
Mac OS X Server
Getting Started
For Version 10.5 Leopard

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# Contents

# Introducing Mac OS X Server

# 1

## Mac OS X Server has everything you need to provide standards-based workgroup and Internet services, making it ideal for education, small businesses, and large enterprises.

Mac OS X Server version 10.5 Leopard blends a mature, stable UNIX foundation with open standards and Macintosh ease of use. It provides an extensive array of services that support Macintosh, Windows, and UNIX client computers over a network.

With Leopard Server, small organizations and workgroups without an IT department can take full advantage of the benefits of a server. Even a nontechnical user can set up and manage Leopard Server for a group. Other users in the group can automatically configure their Macs to get services from Leopard Server. Leopard Server has advanced configuration options and management tools for IT professionals as well.

## What's New in Leopard Server

Mac OS X Server v10.5 Leopard offers major enhancements in several key areas:

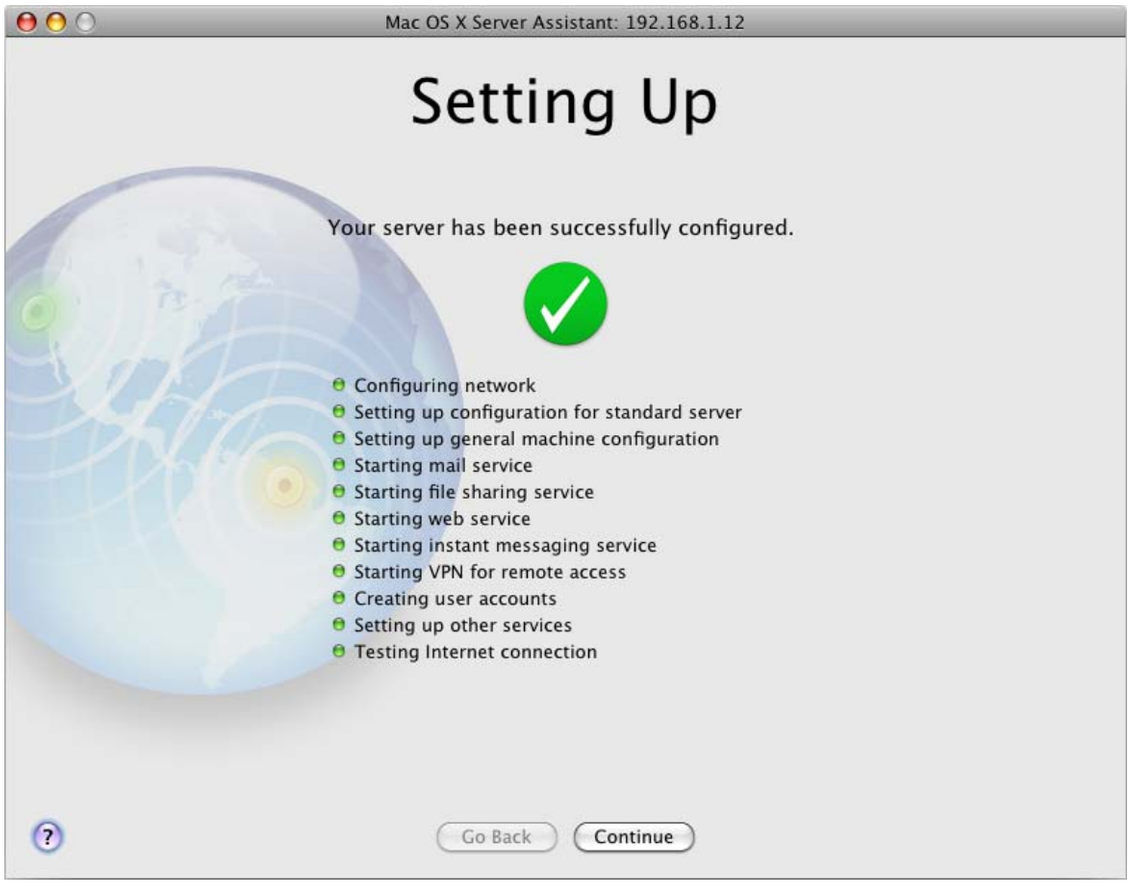
- Simple setup
- Server Preferences and Server Status
- iCal Server
- Group services with wikis and blogs
- Directory application
- Podcast Producer
- Spotlight Server
- UNIX compliance and 64-bit computing

Leopard Server also has significant performance and scalability improvements for key services, such as file sharing and mail services, compared to earlier versions.

If you're an experienced server administrator and want to set up an enterprise server or have other advanced needs, you'll find enhancements to file sharing services, web technologies, media streaming, instant messaging, mail service, directory and network authentication, system imaging, and client management. Server Admin, Workgroup Manager, and System Image Utility are all improved. For more information, see *Server Administration* and the other advanced administration guides described in "Mac OS X Server Administration Guides" on page 144.

## Simple Setup

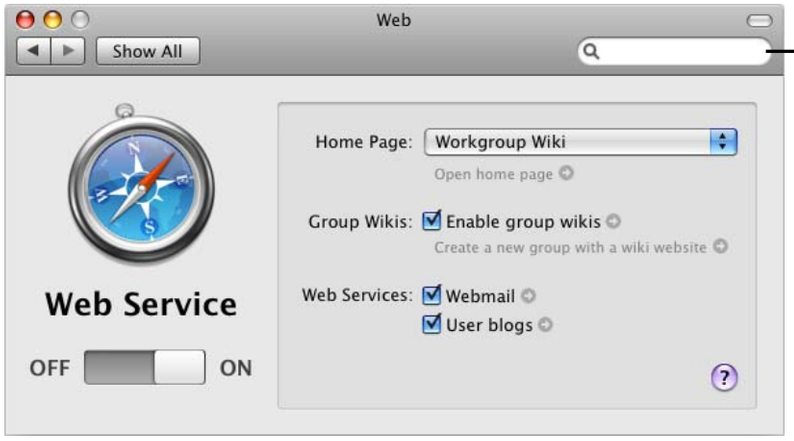
Using Mac OS X Server is easier than ever. Server Assistant eliminates the complexities of configuring a server. It walks you through the setup process and the configuration of essential services. It automatically configures your AirPort Extreme Base Station (802.11n) and runs a built-in network health check to verify local network and Internet connectivity. In a few clicks, Leopard Server readies file sharing, email, group websites, instant messaging, personal calendars, and remote access.



Users can quickly and easily set up Macs with Mac OS X Leopard to get services from the server. They click a button in an invitation email or open the Directory Utility application to open an assistant that connects to the server and sets up applications to use its services. In no time, Mail, iChat, iCal, and a VPN network connection are all ready to use. iChat users see other users in their iChat buddy lists. Mail users are ready to send email to anyone in their group. Address Book, Directory, and Mail are ready to look up shared contact information in the server's directory. A printer connected to the server's USB port is automatically available to users.

## Server Preferences and Server Status

Leopard Server is even easier to keep running. Need to change something? With Server Preferences, you can quickly manage users, groups, services, and system information. You can use Server Preferences on the server, or use it on another Mac to manage your server over the network.




Find the setting you need without knowing its exact location

To monitor server performance and services, you can check graphs and statistics with the Server Status Dashboard widget. Server Status works over the network, so you can keep an eye on the server from another Mac.

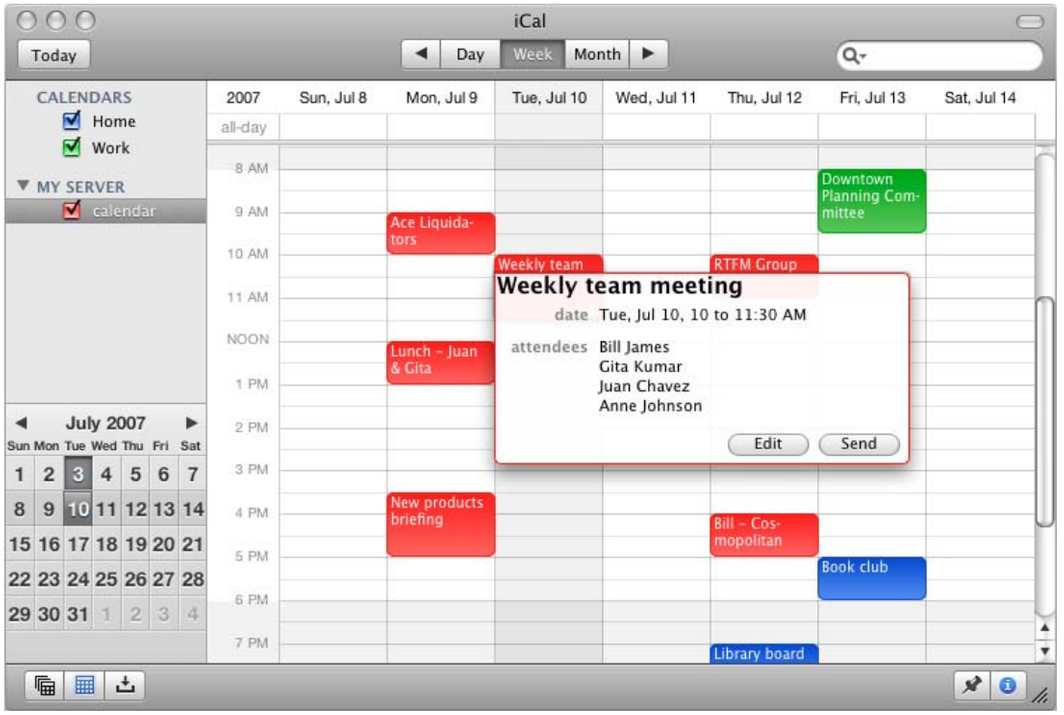

Monitor processor, network, or disk usage

Check service status

## iCal Server

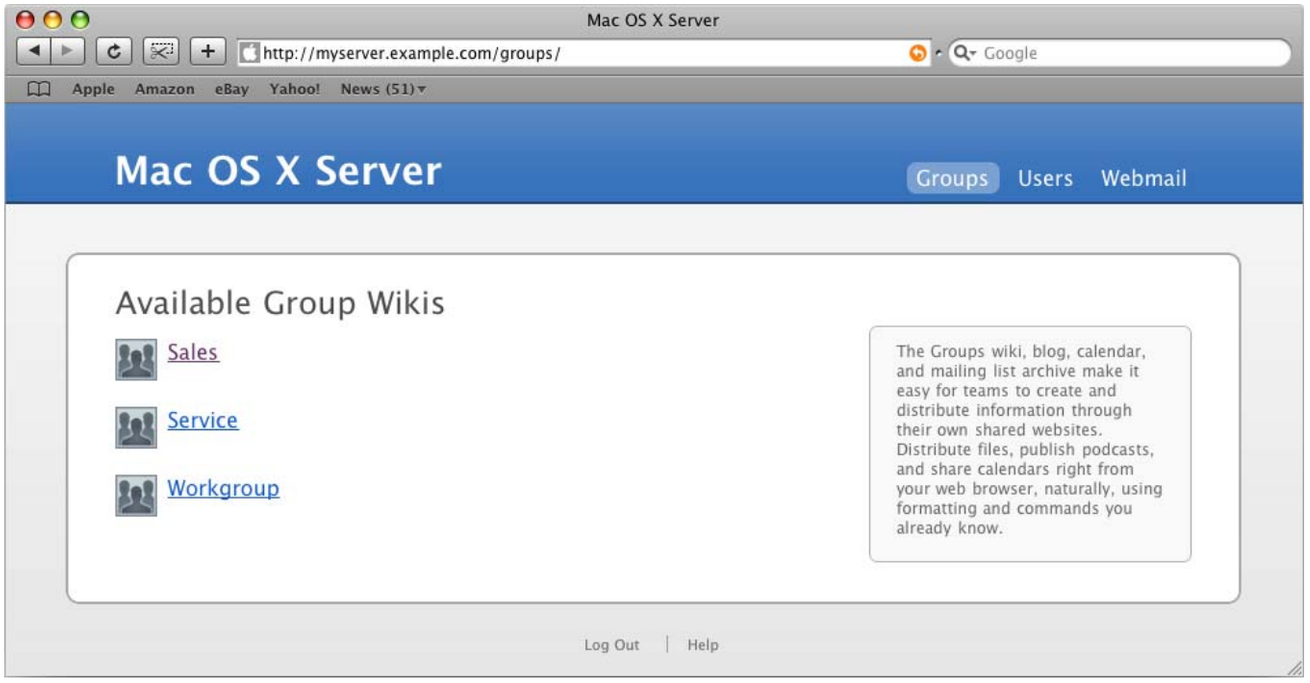
iCal Server makes it easy to share calendars, schedule meetings, and coordinate events within a workgroup, a small business, or a large organization. Colleagues can check each other's availability, propose and accept meetings, book conference rooms, reserve projectors, and more. iCal Server sends meeting invitations with agendas or to-do lists, and tabulates replies.

iCal Server integrates with leading calendar applications including iCal 3 in Leopard and third-party calendar applications that support the standard CalDAV protocol.



## Group Services with Wikis and Blogs

Leopard Server includes a wiki service that makes it easy for groups to create and distribute information through their own shared intranet websites. All members of a group can easily view, search, and edit wiki content in their web browsers. By using included templates, or by creating their own, they can add, delete, edit, and format content naturally—without knowing markup codes or special syntax. With a few clicks, they can attach files and images, publish to podcasts, assign keywords, and link to other wiki pages or other websites. They can also review the wiki's complete history of changes and revert pages to a previous version. In addition, they can view and contribute to shared calendars, blogs, and mailing list archives.




Each user can have a blog, which provides an easy way to keep colleagues up to date with projects, the files they're working on, and pictures or podcasts. A personal blog is the perfect place to put information for your group, or just for your own reference.

## Directory

The Directory application gives users access to shared information about people, groups, locations, and resources within the organization. Users can share contacts, add groups, set up group services, and manage their own contact information.

## Podcast Producer

A video camera, a Mac, and Leopard Server are all you need to produce podcasts of lectures, training, or any other audio and video projects. Podcast Producer automates video and audio capture, encoding, and delivery.


The Podcast Capture application installed on every Mac with Leopard allows users to record high-quality audio and video from a FireWire camera, USB microphone, iSight, or other supported device attached to a local or remote Mac. Podcast Capture automatically sends the completed recording to Podcast Producer on Leopard Server, which encodes and publishes the recording based on your workflow selection in Podcast Capture. Podcast Producer can add effects such as watermarks, titles, and introductory video, and then publish the podcast to a webpage, blog, iTunes, iTunes U, QuickTime streaming server, an iPod, Apple TV, iPhone, or other mobile phone. Leopard Server's mail service can even notify you when the job has completed.

In addition to recording audio and video, you can use Podcast Capture to record screen activity (for example a Keynote presentation) along with audio from a local or remote source. You can also use Podcast Capture to share QuickTime movies with others.

Anyone with an Internet connection and authorization to use Podcast Capture can start the whole process. Simply log in to Podcast Capture, make a few selections, and click a button to start recording. Click another button to stop recording, enter a title and description, and click a button to start the podcast publishing process. Podcast Producer takes care of the rest.

Podcast Producer automatically uses your server's Xgrid 2 service for high performance podcast encoding. Xgrid distributes encoding jobs across the network to Macs that have Leopard set up to share their spare processing power. You can accommodate more podcasts by adding Macs, and Xgrid scales automatically.

## Spotlight Server

Spotlight simplifies finding content on a Mac, and Leopard Server extends Spotlight searching to the network. Spotlight Server lets Mac users quickly and easily find documents, files, and other content stored on your server. It works the way people think, by searching the content on mounted network volumes, not just looking at file names. There is no need to remember what someone else named a particular shared document, project, or file. Use Quick Look to view, play, and read found files without opening them.

Content indexing happens automatically and transparently on the server. No configuration of the server or users' Macs is necessary.

For security, Spotlight Server works with the file access controls and permissions of Mac OS X Server. A user's search lists only items to which the user has access, ensuring that secrets stay secret. So everyone in a group can store files on the server. Group members can easily find shared files, but outsiders can't find them.

## UNIX Compliance

Leopard Server is an Open Brand UNIX 03 Registered Product, conforming to the SUSv3 and POSIX 1003.1 specifications for the C API, Shell Utilities, and Threads. Leopard Server can compile and run all your UNIX 03-compliant code, so it can be deployed in environments that demand full conformance. Mac OS X Server also provides full compatibility with your server and application software.

## 64-Bit Computing

For the first time in Leopard Server, key server software components take advantage of 64-bit computing to achieve higher performance and processing power and to work with larger data sets. Leopard Server runs 64-bit applications alongside 32-bit applications, optimized for each.

## Server Configurations

Leopard Server offers several options for setting up your server to suit your circumstances. The table on the next page lists some reasons for choosing each of the following configurations:

- *Standard:* A simplified configuration ideal for the first server or only server in a small organization
- *Workgroup:* An easy-to-use setup ideal for a workgroup in an organization with an existing directory server
- *Advanced:* A flexible configuration ideal for advanced, highly customized deployments

You can change a standard configuration to a workgroup configuration by connecting the server to a directory server in your organization. Conversely, you can change from workgroup to a standard configuration by disconnecting the server from the directory server. You can also convert to advanced from standard or workgroup (but not the reverse, except by reinstalling Leopard Server). For information about changing configurations, see "Connecting to a Directory Server" on page 135 and *Server Administration* (described in "Mac OS X Server Administration Guides" on page 144).

| Reasons to choose | Standard | Workgroup | Advanced |
|---|---|---|---|
| Set up the first server or only server for a small organization | ✓ | | |
| Have all services set up automatically | ✓ | | |
| Have only selected services set up automatically | | ✓ | |
| Use existing user accounts from your organization's directory server | | ✓ | |
| Use one simple application, Server Preferences, to manage essential settings for user accounts, groups, and services | ✓ | ✓ | |
| Have Leopard users' Macs automatically set up to use the server | ✓ | ✓ | |
| Need no server administration experience | ✓ | ✓ | |
| Completely control hundreds of service configuration settings for multiple servers | | | ✓ |
| Manage user accounts, home folders, and preferences for hundreds or thousands of users, groups, and computers | | | ✓ |
| Set up network home folders and mobile user accounts | | | ✓ |
| Use powerful applications, such as Server Admin and Workgroup Manager, or command-line tools, to configure services and manage clients | | | ✓ |
| Save setup data for automatic setup of multiple servers | | | ✓ |
| Upgrade existing servers | | | ✓ |

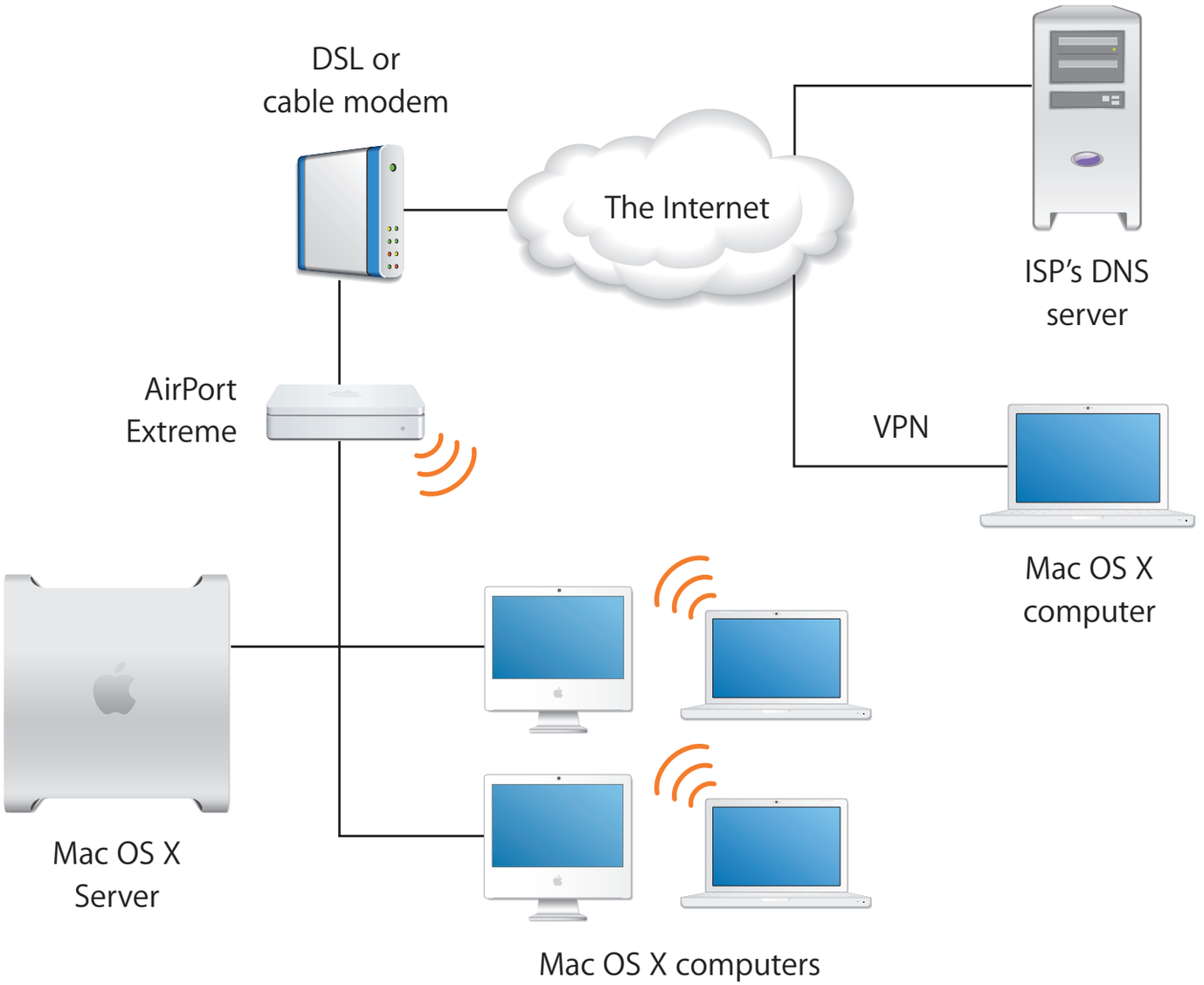
## Leopard Server in Action

The following illustration shows a standard configuration of Mac OS X Server in a small organization. The server connects to a local network together with some users' computers. Other users' computers connect to the local network wirelessly through an AirPort Extreme Base Station. The AirPort Extreme connects to the Internet through a DSL modem or cable modem and shares the Internet connection with the server and users' computers. The server and users' computers get their network addresses from the AirPort Extreme's DHCP server. They get DNS name service from the Internet service provider (ISP).

The server provides user and group accounts, shared folders, shared calendars, instant messaging, and a wiki website with blogs. The ISP doesn't provide enough email addresses for everyone in the organization, so the server provides email addresses and mail service.

Some users may check their email while away, but they don't have portable computers to take home or on the road. They can log in to the server's webmail service from their home computers or any borrowed computer with a web browser.

Other users have their portable computers and home computers set up to connect to the server's VPN via the Internet. This gives them secure remote access, while working at home or traveling, to all the services that the server provides on the local network.


DSL or
cable modem
The Internet
ISP's DNS
server
AirPort
Extreme
VPN
Mac OS X
computer
Mac OS X
Server
Mac OS X computers

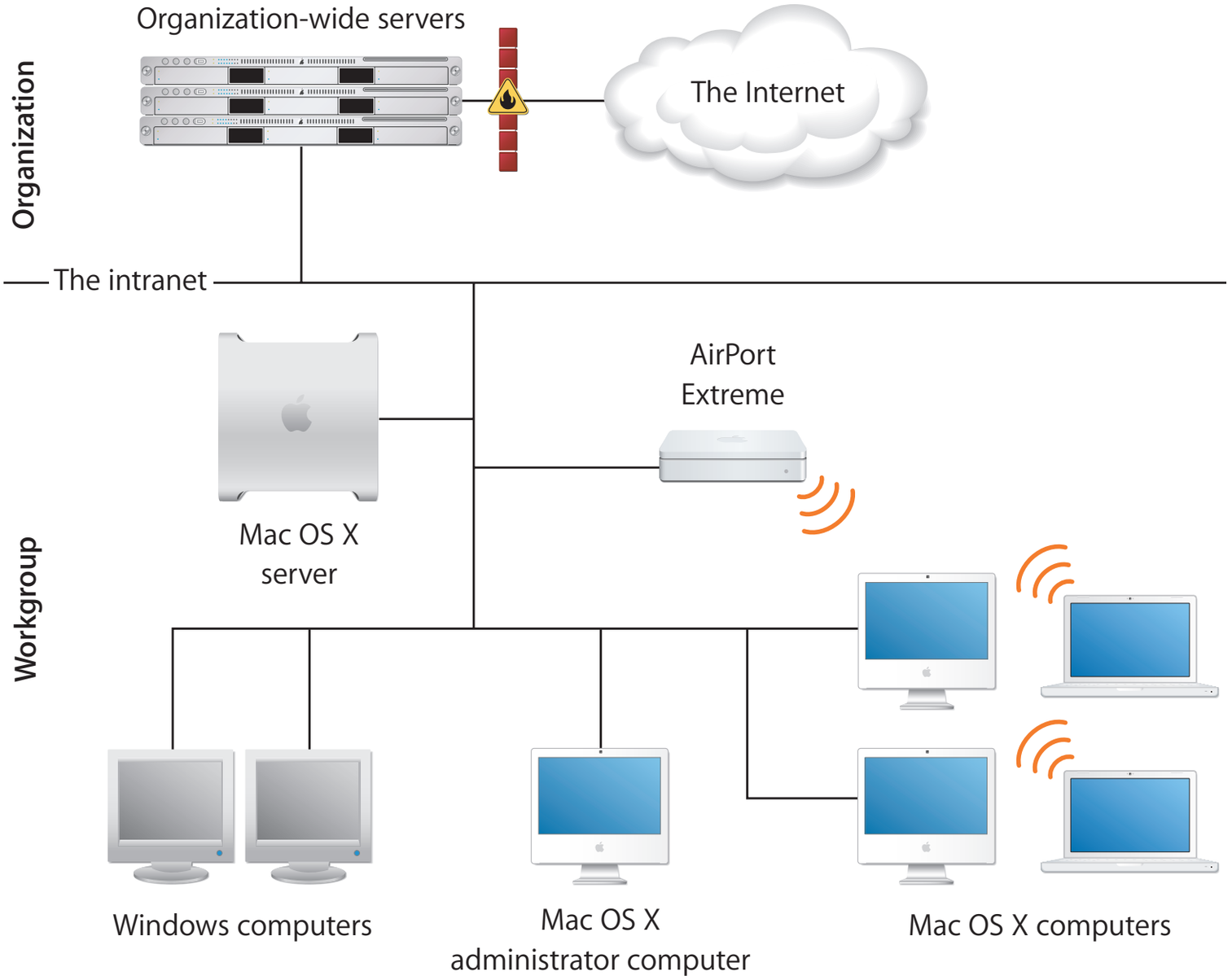
## Leopard Server in a Workgroup

The next illustration depicts a workgroup configuration of Mac OS X Server that serves a department in a large organization. This organization has an IT group that provides DHCP service for assigning network addresses, DNS name service, mail service, Internet access, and a VPN.

Everyone in the department already has a user account provided by the organization's Open Directory server, so these user accounts have been imported to the workgroup server. This means everyone simply uses the user name and password they already know to authenticate for services provided by the workgroup server. Those services were automatically set up to use the Kerberos authentication of the Open Directory server, allowing users to log in once per session for all workgroup services.

The workgroup server provides calendar and instant messaging services that work with the users' Mac OS X iCal and iChat applications. The workgroup server also provides shared folders and wiki websites for groups within the department. Some departmental groups include participants from outside the department. A group's external members use their existing user accounts to access the group's shared folder, calendar, wiki, and blog.

The department has some Windows users, who use Internet Explorer and Safari to access their group's wiki, calendar, and blog. Shared folders appear as mapped drives in their Network Places. They have also set up their PCs to use the workgroup server's Jabber instant messaging.


Organization-wide servers
Organization
The Internet
The intranet
AirPort
Extreme
Mac OS X
server
Workgroup
Windows computers
Mac OS X
administrator computer
Mac OS X computers

## Services

Leopard Server provides the services and system features shown in the following table. Services and system information are set up automatically for a standard or workgroup configuration, using information you provide during the initial server setup.

After setting up a standard or workgroup configuration, you can change service and system settings. You can turn off services that you don't need, perhaps because you already have them. For example, a standard configuration doesn't need to provide mail service if you want to use the mail service provided by an Internet service provider. If no one needs to access your server from home or while traveling, you can turn off VPN service.

A workgroup configuration may not need to provide mail or VPN service if your organization provides them. For information about service and system settings, see Chapter 4, "Managing Your Server," Chapter 8, "Customizing Services," and Chapter 9, "Managing Server Information."

If you select an advanced configuration during initial setup, services are not set up automatically. You use advanced administration applications such as Server Admin and Workgroup Manager, or command-line tools, to configure advanced settings for the services you need the server to provide. For information about an advanced configuration, see *Server Administration* and the other advanced administration guides described in "Mac OS X Server Administration Guides" on page 144.

| Service | Standard | Workgroup | Advanced |
|---|---|---|---|
| File sharing (AFP and SMB protocols) | Included | Optional | Optional |
| File sharing (FTP and NFS protocols) | Not used | Not used | Optional |
| Printer sharing (directly connected USB or FireWire printer) | Automatic | Automatic | Not used |
| Print | Not used | Not used | Optional |
| iCal (calendar sharing, event scheduling) | Included | Optional | Optional |
| iChat (instant messaging) | Included | Optional | Optional |
| Mail with spam and virus filtering | Included | Optional | Optional |
| Web (wikis, blogs, webmail) | Included | Optional | Optional |
| VPN (secure remote access) | Optional | Optional | Optional |
| Internet gateway (NAT, DNS) | Optional | Optional | Optional |
| Time Machine backup of server | Optional | Optional | Not used |
| Open Directory (user accounts and other data) | Automatic | Automatic | Optional |
| Application firewall | Optional | Optional | Not used |
| IP firewall with optional adaptive firewall | Not used | Not used | Optional |
| Podcast Producer | Not used | Not used | Optional |
| Comprehensive user and workgroup management | Not used | Not used | Optional |
| Xgrid (computational clustering) | Not used | Not used | Optional |
| DHCP, DNS, NAT | Automatic | Automatic | Optional |
| RADIUS | Not used | Not used | Optional |
| NetBoot and NetInstall (system imaging) | Not used | Not used | Optional |

| Service | Standard | Workgroup | Advanced |
|---|---|---|---|
| Spotlight (searching) | Automatic | Automatic | Automatic |
| QuickTime Streaming | Not used | Not used | Optional |
| Software update | Not used | Not used | Optional |
| Remote management | Included | Included | Included |
| Remote login (SSH) | Included | Included | Included |

## Applications and Utilities

After setting up Leopard Server, you can change service settings and perform other server administration tasks using the applications described below. You can also use the Directory application, which is designed for users who aren't administrators to manage shared information in the server's directory. It's installed on all Macs with Leopard as well as on your server. For information about using the Directory application or Directory Utility, open it and then use the Help menu. For information about using the other applications, see other chapters in this book.

| Applications for standard and workgroup server administrators | |
|---|---|
| **Directory**<br>(in /Applications/Utilities/) | Gives users access to shared information about people, groups, locations, and resources. Users can share contacts, add groups set up group services, and manage their own contact information. |
| **Directory Utility**<br>(in /Applications/Utilities/) | Connect your server to a directory server in your organization. |
| **Server Assistant**<br>(in /Applications/Server/) | Install or set up Mac OS X Server on a remote computer. |

| Applications for standard and workgroup server administrators | |
|---|---|
| **Server Preferences**<br>(in /Applications/Server/) | Manage users and groups, customize services and system information, and monitor server activity. |
| **Server Status widget for Dashboard** | Monitor server activity from any Mac with Leopard. |

## Advanced Tools and Applications

If you set up an advanced configuration of Leopard Server, you administer it using the applications and tools listed below. For more information, see *Server Administration* and the other advanced administration guides described in "Mac OS X Server Administration Guides" on page 144.

***Important:*** If you have administrative applications and tools from Mac OS X Server version 10.4 Tiger or earlier, do not use them with Leopard Server.

| Applications and tools for advanced server administrators | |
|---|---|
| **Directory Utility**<br>(in /Applications/Utilities/) | Connect the server to a directory server in your organization. |
| **Podcast Capture**<br>(in /Applications/Utilities/) | Lets users record high-quality audio and video from a local or remote camera, capture screen activity, or upload QuickTime files into Podcast Producer for encoding and distribution. |
| **QuickTime Broadcaster**<br>(in /Applications/) | Captures live audio and video and works seamlessly with QuickTime Streaming Server for high-quality network broadcasting. |
| **RAID Admin**<br>(in /Applications/Server/) | Set up and monitor Xserve RAID hardware. |

| Applications and tools for advanced server administrators | |
|---|---|
| **Server Admin**<br>(in /Applications/Server/) | Set up services, manage file share points, change service setup, and customize server settings. Monitor server activity and view detailed service logs. |
| **Server Assistant**<br>(in /Applications/Server/) | Install or set up Mac OS X Server on a remote computer. |
| **Server Monitor**<br>(in /Applications/Server/) | Remotely monitor and manage one or more Xserve systems. |
| **System Image Utility**<br>(in /Applications/Server/) | Create and customize NetBoot and NetInstall images for Mac OS X and Mac OS X Server computers. |
| **Workgroup Manager**<br>(in /Applications/Server/) | Manage users, groups, computers, and computer groups in advanced server deployments. Manage preferences for Mac OS X users. |
| **Xgrid Admin**<br>(in /Applications/Server/) | Remotely manage clusters and monitor the activity of controllers, agents, and the status of jobs on the grid. |
| **Command-line tools** | Use UNIX tools to install and set up server software, administer services, manage users, and so forth. |

# Installing Mac OS X Server

# 2

## Use the Installer to install Leopard Server locally, or use Server Assistant to install remotely.

To get started you need to:

- Make sure the target server meets system requirements
- Connect the target server to your Ethernet network
- Use the *Installation & Setup Worksheet* to collect information you'll need (it's in the Documentation folder on the *Mac OS X Server Install Disc*)
- Install Mac OS X Server version 10.5 Leopard using one of these methods:
  - Install locally if the target server has a display that you can use conveniently
  - Install remotely if the target server is inconveniently located or doesn't have a display

For information about installing Leopard Server on multiple servers, performing automated installations, and other advanced installation methods, see *Server Administration*. For information about upgrading or migrating to Leopard Server from an earlier version of Mac OS X Server, see *Upgrading and Migrating*. These advanced guides are described in "Mac OS X Server Administration Guides" on page 144.

## What You Need to Install Leopard Server

To install Leopard Server, you need a Macintosh desktop computer or server with:

- An Intel processor or PowerPC G5 or G4 (867 MHz or faster) processor
- At least 1 gigabyte (GB) of random access memory (RAM)
- At least 20 gigabytes (GB) of disk space available
- An active connection to a secure Ethernet network

A standard or workgroup server needs significantly more disk space—such as a high capacity external hard drive—if you want to back up the server using Time Machine. (Time Machine backup of server data isn't supported for an advanced server.)

A built-in DVD drive is convenient but you can attach an external FireWire DVD drive or a Mac that has a DVD drive and is operating in target disk mode instead.

A display is optional. You can install and administer Mac OS X Server on a computer that has no display by using an administrator computer. For information, see "Preparing an Administrator Computer" on page 36.

Some encoding operations require a compatible graphics card.

Your server doesn't need to be located where someone has constant access to it. When you need to perform administrative tasks, you can use any Mac that you've set up as an administrator computer.

Unless you have a site license, you need a unique serial number for each server. You must use a Mac OS X Server v10.5 Leopard serial number, which begins with XSVR-105.

## Installing Mac OS X Server Securely

When you start up a computer from the *Mac OS X Server Install Disc,* SSH remote login service and VNC screen sharing service start automatically in order to make remote installation possible.

***Important:*** Make sure the network is secure before you install or reinstall Mac OS X Server, because SSH and VNC give others access to the computer over the network.

For example, set up your local network so that only users you trust can access it. Avoid having Ethernet jacks in public places. If you have an AirPort Base Station or other wireless access point, configure it to use WEP-2 authentication with a strong password. Consider making the wireless network name private. Also, try to keep the hardware serial number confidential, because it's used as the password for remote installation and setup.

## Installing Locally

You can install Mac OS X Server directly onto the target server by starting up the server from the *Mac OS X Server Install Disc*. The Installer application guides you through the interactive installation process. The target server must have a display attached so you can interact with the Installer.


You can perform:

- A new installation of Mac OS X Server on a disk that doesn't already have Mac OS X Server or Mac OS X installed
- A clean installation, which installs Mac OS X Server after erasing and formatting a target disk

**To install Mac OS X Server locally:**

1. If you're planning to erase or partition the target disk, make sure you have a backup of the disk.
2. Make sure the computer has an active connection to a secure Ethernet network.

   This network connection is needed to set up the server's Open Directory domain.
3. Start up the computer, log in if necessary, and insert the *Mac OS X Server Install Disc* into the DVD drive.

4 Open the Install Mac OS X Server application and click the Restart button.

The application is in the Mac OS X Server Install Disc window.

If you see an Install button instead of a Restart button in the lower-right corner of the application window, click Install and proceed through the Installer panes by following the onscreen instructions (skip steps 5 through 8 below). When installation is complete, restart the server. Server Assistant opens so you can set up the server. For information, see Chapter 3, "Setting Up Mac OS X Server."

5 After the computer restarts, choose the language you want to use on the server, and then click the arrow button.

6 Proceed through the Installer panes by following the onscreen instructions.

7 When the Select a Destination pane appears, select a target disk or volume (partition) and make sure it's in the expected state.

If you need to erase the target disk, click Options, select Erase and Install, choose a format, and click OK.

You can instead choose Utilities > Disk Utility to erase the target disk using a less common format, partition the server's hard disk, or create a RAID set.

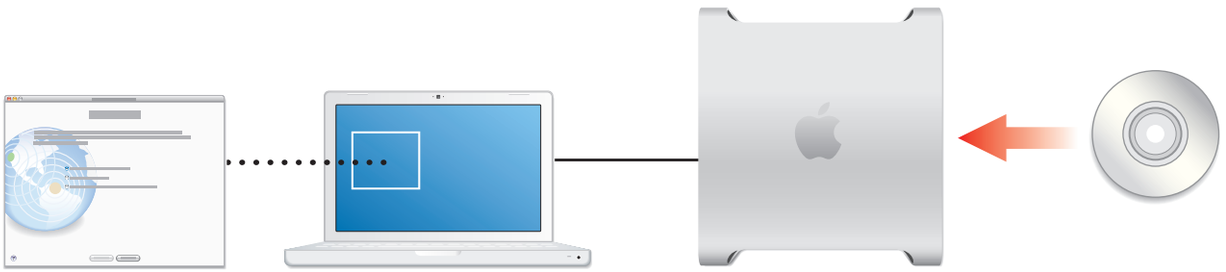
For more information, see Appendix A, "Preparing Disks for Installing Mac OS X Server."

8 After installation is complete, the computer restarts and Server Assistant opens so you can set up the server.

For information, see Chapter 3, "Setting Up Mac OS X Server."

## Preparing an Administrator Computer

You can use an administrator computer to install Mac OS X Server on another computer over the network. As illustrated below, you start up the server using the *Mac OS X Server Install Disc* and use Server Assistant application the administrator computer to perform remote installation. The target server doesn't need a display.



Server Assistant

Administrator computer

Target server with DVD drive

You can also use an administrator computer to set up and manage Mac OS X Server remotely. For information, see "Setting Up a Server Remotely" on page 44 and "Connecting Server Preferences to a Remote Server" on page 51.

You make a Mac OS X computer into an administrator computer by installing server administration software on it. If you have another server with Leopard Server already set up, you can use it as an administrator computer as well.

**To set up an administrator computer:**

1. Make sure the Mac OS X computer has Mac OS X version 10.5 Leopard installed.
2. Insert the *Administration Tools* disc.
3. Open the Installers folder.
4. Double-click ServerAdministrationSoftware.mpkg to open the Installer, and then follow the onscreen instructions.

## Installing Remotely

Using Server Assistant on an administrator computer, you can install Mac OS X Server on another computer over the network. The computer you're installing on doesn't need a display, but it does need a DVD drive for the *Mac OS X Server Install Disc*. If the computer doesn't have a built-in DVD drive, you can attach an external FireWire DVD drive or a Mac that has a DVD drive and is operating in target disk mode.

You can perform:

- A new installation of Mac OS X Server on a disk that doesn't already have Mac OS X Server or Mac OS X installed.
- A clean installation, which installs Mac OS X Server after erasing and formatting a target disk.

**To install Mac OS X Server remotely:**

1. If you're planning to erase the target disk or partition, make sure you have a backup of it, and optionally use Disk Utility to prepare the target disk.

   If you only need to erase the target disk using the most common format, Mac OS Extended (Journaled), you don't need to use Disk Utility. With Disk Utility, you can erase the target disk using other formats, partition the server's hard disk, or create a RAID set. For information about using Disk Utility for these tasks, see Appendix A, "Preparing Disks for Installing Mac OS X Server."

2. Start up the target server with the *Mac OS X Server Install Disc*.

   If the target server has a built-in DVD drive, insert the disc and then restart the computer while holding down the C key on the keyboard. Release the C key when you see the Apple logo.

   If the target server has an external FireWire DVD drive, restart the computer while holding down the Option key, select the icon representing the *Mac OS X Server Install Disc,* and then click the Arrow button.

3. On an administrator computer, open Server Assistant, select "Install Mac OS X Server on a remote computer," and click Continue.

   Server Assistant is located in /Applications/Server/. You can use Server Assistant without an administrator account.

4. In the Destination pane, identify the target server and select it in the list.

   You can identify a server by its IP address, DNS name, or MAC address (also called the Ethernet address or hardware address).

For servers that Server Assistant finds on the local network (IP subnet), the IP address may be assigned automatically by a DHCP server on the network. If no DHCP server exists, the target server uses a 169.254.xxx.xxx address unique among servers on the local network. Later, when you set up the server, you can change the IP address.

If the server you want isn't listed, you can click Refresh List to have Server Assistant look again for servers that are ready for installation on your local network. If the server you want is on a different local network, choose "Server at IP Address" from the "Install to" pop-up menu, and enter an IP address in IPv4 format (for example, 192.0.2.200). You can also choose "Server at DNS Name" and enter the server's DNS name.

5 When prompted for a password, type the first 8 characters of the server's built-in hardware serial number.

To find the serial number, look for a label on the server. Match the capitalization of the serial number when you type it.

For a computer that has no built-in hardware serial number, use 12345678 as the password.

6 Proceed through the Install Language, Important Info, and Software License panes, following the onscreen instructions.

For information about settings in a Server Assistant pane, click the Help button in the pane.

7 In the Volumes pane, select a target disk or partition, make sure it's in the expected state, and click Continue.

For information about the disk status icons, click the Help button in the Volumes pane.

8 If the volume you selected already has Mac OS X Server or Mac OS X installed, select an available option and then click OK.

The options may include:

- *Erase using Mac OS X Extended (Journaled) format, then install:* Completely erases the destination volume before installing a new copy of Mac OS X Server.
- *Upgrade Mac OS X Server:* This option is available only if the target volume has the latest update of Mac OS X Server v10.4 Tiger or has Mac OS X Server v10.3.9 Panther. You can upgrade this volume to an advanced configuration of Leopard Server without erasing the destination volume. For information, see *Upgrading and Migrating* (described in "Mac OS X Server Administration Guides" on page 144).

9 After installation is complete, the target server restarts and you can continue using Server Assistant to set up the server remotely.

For information, see Chapter 3, "Setting Up Mac OS X Server."

Instead of using Server Assistant on an administrator computer, you can remotely control installation by using screen sharing on a Mac with Mac OS X v10.5 Leopard or with Apple Remote Desktop (which you can purchase separately) on another Mac. For more information, see *Server Administration* (described in "Mac OS X Server Administration Guides" on page 144).

# Setting Up Mac OS X Server

# 3

## Server Assistant leads you through setting up your server for the first time.

Server Assistant opens automatically when you:

- Finish installing Mac OS X Server version 10.5 Leopard
- Start up a new server with Leopard Server preinstalled

You can use Server Assistant:

- Locally on the server
- Remotely on an administrator computer to set up the server over the network

For information about interactively setting up multiple servers or automatically setting up an advanced configuration, see *Server Administration* (described in "Mac OS X Server Administration Guides" on page 144).

## Setting Up a Server Locally

You can set up a new server or a computer with Mac OS X Server newly installed by using the server's keyboard, mouse, and display.

**To set up a server locally:**

1. Prepare for setup by filling out a printed copy of the *Installation & Setup Worksheet*.

   The *Installation & Setup Worksheet* is located on the *Mac OS X Server Install Disc* in the Documentation folder.

2. If you have DHCP or DNS service provided by your ISP, Internet router, or other servers on your network, make sure they are set up for your new server and are running.

3. If you want to set up your server as an Internet gateway, so the server shares an Internet connection with other computers on your network, make sure of the following:

   - One Ethernet port, or interface, connects to your DSL modem, cable modem, or other Internet source. The Internet interface must have a public IP address (not a private IP address like 10.0.1.1 or 192.168.1.1).
   - Another Ethernet port connects to your local network.

   During setup, you specify which port connects to the Internet. For example, if the server's built-in Ethernet port connects to the Internet, you would specify it as the Internet port. If your server has more than two Ethernet ports, you select at least one of them as a local network port.

4. If the server is off, turn it on.

   When the server starts up, Server Assistant opens automatically.

5. Proceed through the Server Assistant panes, following the onscreen instructions and entering the information you've recorded on the *Installation & Setup Worksheet*.

For information about settings in a Server Assistant pane, click the Help button in the pane.

When server setup is complete, you can:

- Take a few additional steps to keep your server secure. For information, see "Keeping Your Server Secure" and "Protecting the System Administrator (root) Account," next.
- Use Software Update to install any available Mac OS X Server updates. For information, see "Keeping Leopard Server Up to Date" on page 54.
- Configure an AirPort Base Station or an Internet router so that users can access your server over the Internet. For information, see Appendix B, "Configuring an Internet Router."
- Use Server Preferences to set up users and groups, customize services and system information, and monitor server activity. You can also use the Server Status widget with Dashboard to monitor your server. For information about these tasks, see Chapters 4 through 9 or open Server Preferences and then use the Help menu.

## Keeping Your Server Secure

For security, you should create a standard user account after completing server setup. When you log in on the server, routinely use this standard account instead of an administrator account. Then use your administrator account with each application that requires administrator privileges. For example, use your administrator name and password with Server Preferences when you need to manage users, groups, or services.

To create a standard user account, use the Accounts pane of System Preferences on the server. For information, open System Preferences and then use the Help menu.

## Protecting the System Administrator (root) Account

The administrator password you enter during setup is also used for the server's System Administrator user account, whose short name is root. The System Administrator (root) account can move or delete any file in the system, including system files not available to a server administrator account or any other user account. You don't need root user privileges to administer your server.

***Important:*** Protecting the root user password is very important, so it should not be the same as another account's password.

After setting up the server, you should change the password of the root user account. For information about changing the root user's password, open Directory Utility (in /Applications/Utilities/) and then use the Help menu.

## Setting Up a Server Remotely

If you have a new server or another computer with Mac OS X Server newly installed, you can set it up over the network by using Server Assistant on an administrator computer. The server you're setting up doesn't need a keyboard or display. For information about administrator computers, see "Preparing an Administrator Computer" on page 36.

**To set up a remote server:**

1. Prepare for setup by filling out a printed copy of the *Installation & Setup Worksheet*.

   The *Installation & Setup Worksheet* is located on the *Mac OS X Server Install Disc* in the Documentation folder.

2 If you have DHCP or DNS service provided by your ISP, Internet router, or other servers on you network, make sure they are set up for your new server and are running.

3 If you want to set up your server as an Internet gateway, so the server shares an Internet connection with other computers on your network, make sure of the following:

- One Ethernet port, or interface, connects to your DSL modem, cable modem, or other Internet source. The Internet interface must have a public IP address (not a private IP address like 10.0.1.1 or 192.168.1.1).
- Another Ethernet port connects to your local network.

During setup, you specify which port connects to the Internet. For example, if the server's built-in Ethernet port connects to the Internet, you would specify it as the Internet port. If your server has more than two Ethernet ports, you select at least one of them as a local network port.

4 If the server is off, turn it on.

When the server starts up, Server Assistant opens automatically and waits for remote setup to begin.

5 On an administrator computer, open Server Assistant, select "Set up a remote server," and click Continue.

Server Assistant is located in /Applications/Server/. You can use Server Assistant without an administrator account on the local computer.

6 In the Destination pane, type the preset password in the Password column for the server you want to set up, and then select the Apply checkbox.

If the server isn't listed, click Refresh List to have Server Assistant look again for servers that are ready to set up on your local network (IP subnet). If the server you want is on a different local network, click the Add (+) button and enter its IP address or DNS name.

The preset password consists of the first 8 characters of the computer's built-in hardware serial number, which is located on a label on the computer. Match the capitalization of the serial number when you type it. For a computer that has no built-in hardware serial number, use 12345678 as the password.

7 Click Continue and proceed through the Server Assistant panes, following the onscreen instructions and entering the information you've recorded on the *Installation & Setup Worksheet*.

For information about settings in Server Assistant, click the Help button in any pane.

When server setup is complete, you can:

- Take a few steps to keep your server secure. For information, see "Keeping Your Server Secure" on page 43 and "Protecting the System Administrator (root) Account" on page 44.
- Use Software Update to install any available Mac OS X Server updates. For information, see "Keeping Leopard Server Up to Date" on page 54.
- Configure an AirPort Base Station or an Internet router so that users can access your server over the Internet. For information, see Appendix B, "Configuring an Internet Router."
- Use Server Preferences to set up users and groups, customize services and system information, and monitor server activity. You can also use the Server Status widget with Dashboard to monitor your server. For information about these tasks, see Chapters 4 through 9 or open Server Preferences and then use the Help menu.

# Managing Your Server

# 4

## Use the Server Status widget, Server Preferences, Time Machine, and Software Update to check status, change settings, back up and restore, and update server software.

Check status with Server Preferences or the Server Status widget. Find and change server settings with Server Preferences. Use Server Preferences and the Server Status widget on the server itself or over the network from any Mac with Leopard. Set Time Machine preferences to back up the server, and restore using the Time Machine application or the Installer. Keep the server software current with Software Update.

## Using Server Preferences

With Server Preferences, you can check the status of services and change their settings. You use Server Preferences to manage various aspects of a standard or workgroup configuration of Leopard Server, such as who can use its services, how its services are configured, or what its status is.

When you open Server Preferences, individual preferences are grouped in the categories described below.

- *Accounts:* Manage users and groups.
- *Services:* Customize settings for file sharing, iCal calendar service, iChat instant messaging service, mail service, web services, and VPN remote access service.
- *System:* Check server information, service logs, graphs of server activity, and firewall settings.

**To manage a standard or workgroup server:**

1 Open Server Preferences.

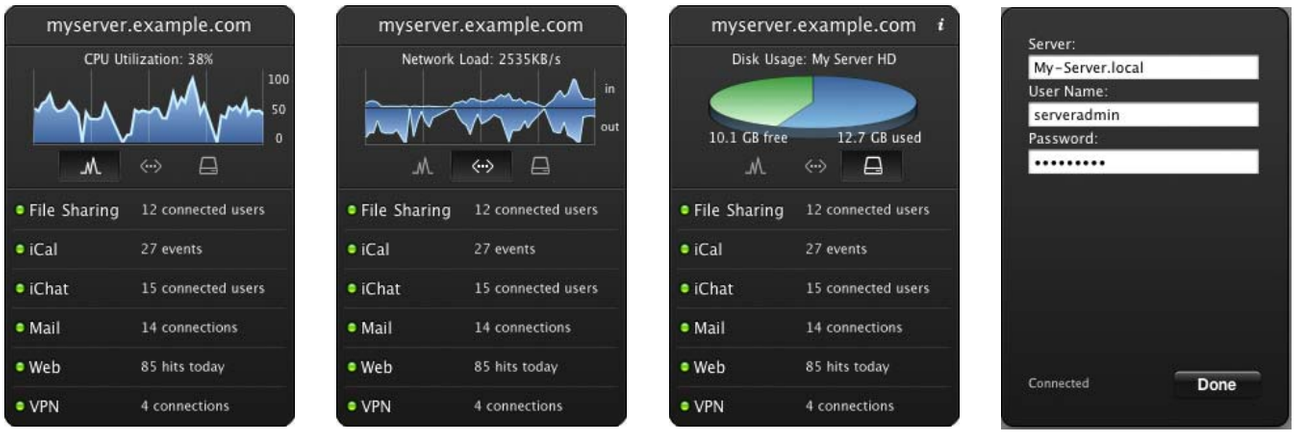
Server Preferences is located in /Applications/Server/.

2 If Server Preferences asks you for Server, User Name, and Password, enter the server's DNS name or IP address, the name of an administrator user account on the server, and the password for the administrator account.

The account you created when you set up the server is an administrator account.

# Using the Server Status Widget

You can use the Server Status widget to monitor the status of Mac OS X Server either on the server itself or from another computer with Mac OS X Server or Mac OS X.




**To use the Server Status widget:**

1. Open Dashboard, click its Open (+) button, and then click or drag the Server Status widget from the widget bar.

   You can open Dashboard by clicking its icon in the Dock or pressing its keyboard shortcut, which is usually the F12 key.

2. Enter the server's DNS name or IP address, an administrator name and password, and then click Done.

3. When the Server Status widget is connected to a server, it displays the server's DNS name and status information about the server and its services.

   Monitor processor utilization, network load, or disk usage by clicking an icon below the graph.

   Change the processor or network graph's time period to one hour, day, or week by clicking the graph.

If your server has more than one disk, you can see the status of each disk in turn by clicking the disk usage graph.

Check the status indicator and current number of connections for the listed services. A green indicator means the service is running.

Open the Server Preferences pane for a listed service by clicking the service in the widget.

Connect to a different server by moving the mouse to the upper left corner of the widget and clicking the small Info (i) button.

You can open another Server Status widget to see more than one aspect of a server's status at once or to monitor another server on the network.

The Server Status widget requires Mac OS X Server version 10.5 Leopard or Mac OS X v10.5 Leopard.

For information about widgets and Dashboard, switch to the Finder and then use the Help menu.

You can also see graphs of server activity using Server Preferences. For information, see "Monitoring Server Graphs" on page 141.

## Finding Settings in Server Preferences

Server Preferences contains dozens of settings you can change to customize your computer. You can quickly search Server Preferences to find the specific setting you want.

**To find settings in Server Preferences:**

1. Open Server Preferences.
2. In the search box, type a word or phrase that describes what you want to change. For example, if you want to add members to a group, type "group members."

   As you type, you see possible matches to what you're typing below the search box.
3. When you see what you're looking for in the search results list, stop typing. One or more preferences are spotlighted in the Server Preferences window.
4. Click the item in the list that matches what you want to change. In the pane that opens, you can change the settings for that item.

## Connecting Server Preferences to a Remote Server

You can connect Server Preferences to a server over the network and manage users, groups, services, and system information remotely.

**To manage a server remotely:**

1. Open Server Preferences on an administrator computer and choose Connection > New Connection.

   For information about administrator computers, see "Preparing an Administrator Computer" on page 36.

2 Enter the remote server's DNS name or IP address and the name and password of an administrator account on the remote server.

When Server Preferences is connected to a remote server, the server's name or IP address is displayed in the title bar of the Server Preferences window.

To reconnect to a server you have connected to recently, choose Connection > Open Recent Connection, and then choose the server you want.

You can connect Server Preferences to standard and workgroup configurations of Leopard Server, but not to an advanced configuration of Leopard Server or an earlier version of Mac OS X Server.

## Closing a Server Preferences Connection

For security, you should close a Server Preferences window when you are not actively using it to manage the server's users, groups, services, or system information. Leaving a server connection open on an unattended server makes it easier for an unauthorized person to make changes to users, groups, or services.

**Here are ways you can close a Server Preferences connection:**

- Close the Server Preferences window.
- Choose Connection > Close.
- Quit Server Preferences.

If you close the only open Server Preferences window, Server Preferences quits automatically.

## Backing Up and Restoring the Server

You can back up server files automatically using Time Machine. It's a comprehensive backup solution for the system. It automatically makes a complete backup of all files on the system to either a locally attached external hard drive or a remote network file system. It also keeps track as files are created, updated, or deleted over time. Time Machine backs up the changes and creates a history of the file system that you can navigate by date. You can use its intuitive time-based visual browser to search back through time to find and restore any files that were backed up.

You can set up a list of folders and disks that you want excluded from backup. Time Machine automatically excludes temporary and cache files located in /tmp/, /Library/Logs/, /Library/Caches/, and /Users/*username*/Library/Caches/.

You set backup options in the Time Machine pane of System Preferences. You use the Time Machine application to restore files. You can also restore the entire system to a previous state using the Installer. For information about backing up and restoring with Time Machine or the Installer, open System Preferences and then use the Help menu.

***Note:*** You can restore a standard or workgroup configuration from a Time Machine backup, but may not be able to completely restore advanced settings changed with Server Admin.

## Keeping Leopard Server Up to Date

When your server is connected to the Internet, Software Update can automatically get the latest free Leopard Server version, security updates, and other enhancements from Apple. Your server is set to check automatically for updates once a week, but you can set it to check daily or monthly. You can also check now.


**To check for updates or adjust automatic updating:**

1. Open System Preferences.
2. Click the Software Update Icon and follow the onscreen instructions.

If your organization has another server with Mac OS X Server, your server may get software updates from it rather than from Apple. An expert administrator can set up Mac OS X Server to provide software update service by using Server Admin.

You can also download software updates directly from the Apple Downloads website: www.apple.com/support/downloads

# Managing Users

# 5

## Create or import user accounts, change their settings, or delete them in the Users pane of Server Preferences.

In the Users pane, you set up accounts for people who use the services that this server provides, and you control which services they can access. You can update their contact information and change their group memberships. You can also edit the email messages that can be sent to new users. For information about the settings and controls in this pane, click the Help button in the lower-right corner of the Server Preferences window.

## About User Accounts

User accounts on your server allow users to gain access to services provided by the server. A user account contains the information needed to prove the user's identity for all services that require authentication. A user account also provides a centralized place to store a user's contact information and other data.

Each user account can provide an email address, iChat instant messaging address, personal calendar, and VPN remote access to your server. Users can also be members of groups, authorizing them to access group resources such as a shared group folder, group website, and group calendar. Of course, if any of these services is turned off, then users don't have access to it.

You can add new user accounts in the Users pane of Server Preferences by:

- Creating new accounts
- Importing existing accounts, if your organization has a directory server and your server is connected to it

You can import user accounts individually. You can also automatically import all user accounts that are members of a group.

New user accounts you create are stored in your server's directory. Imported user accounts remain in your organization's directory server. You can supplement imported accounts with contact information, group membership information, and so forth. The supplemental information is stored in your server's directory. When someone uses an imported user account, your server automatically combines the account information stored in the directory server with supplemental account information stored in your server's directory.

You can use Server Preferences to edit user accounts created on your server. Users can also edit their own accounts using the Directory application.

If your server has imported user accounts, you can use Server Preferences to edit an account's supplemental information in your server's directory, but not the account information in your organization's directory. An administrator of that directory can edit its account information using tools for the directory server.

Users who have administrator privileges on their own computers can create *local* user accounts with the Accounts pane of System Preferences. These local user accounts are stored on the user's computer. Local user accounts have home folders on the computer and can be used for logging in to the computer. Local user accounts can't be used to access the server over the network.

Because your server is also a Mac OS X computer, it has local accounts in addition to server accounts and possibly imported accounts. Your server's local accounts can be used to log in to it, and a local account with administrator privileges can be used to administer the server. For information about administrator privileges, see "About Administrator Accounts," next.

The following table summarizes the key differences between server accounts, imported accounts, and local accounts.

| Account type | Stored in | Created by | Used for |
|---|---|---|---|
| Server accounts | Your server's directory | You (a server administrator), using Server Preferences | Group membership, contact information, authenticating for services |
| Imported accounts | Your organization's directory server, with supplements in your server's directory | Directory server's administrator | Group membership, contact information, authenticating for services |
| Local accounts | Each Mac OS X computer | A user with an administrator account on the computer, using Accounts preferences | Home folders, logging in to the computer |

## About Administrator Accounts

You need an administrator account on your server to create other user accounts, create groups, change server settings, and perform other tasks using Server Preferences. With an administrator account, you can also make changes to locked preferences in System Preferences, install software on the server, and perform other tasks that standard users can't.

Your server has two administrator accounts after you finish the initial setup process described in Chapter 3. The primary administrator account is the one whose name and password you entered while setting up the server. The other administrator account also has the password you entered, but its name is Local Administrator, and its short name is localadmin. The table below summarizes their similarities and differences.

The primary administrator account is in your server's directory together with other user accounts you create using the Users pane of Server Preferences. You can use this administrator account on the server itself, and you can use it to manage your server over the network from another Mac.

The Local Administrator account is stored on the server, not in its directory, together with any user accounts you might create using the Accounts pane of System Preferences. You can use the Local Administrator account to log in on the server and use Server Preferences on the server in the event of a malfunction that makes the other administrator account unusable.

| | Primary administrator | Local administrator |
|---|---|---|
| Name and short name | Specified during setup | Local Administrator and localadmin |
| Password | Specified during setup | Specified during setup |
| Stored in the server's directory | Yes | No |
| Can be used from an administrator computer | Yes | No |

When you create a new user account, you specify whether the user is an administrator or a standard user. You can also make an imported user account a server administrator. If you don't want a user to be able to use Server Preferences or install software on the server, don't make the user an administrator.

To keep your computer secure, don't share an administrator name and password with anyone. Be sure to log out when you leave your computer, or set up a locked screen saver using the Screen Saver pane and Security pane of System Preferences. If you leave your computer while you're logged in and the screen is unlocked, someone could sit down at your computer while you're away and make changes using your administrator privileges.

For added security, routinely log in on the server using a standard user account. Use your administrator name and password when you open Server Preferences or other application that requires administrator privileges.

Never set an administrator to be automatically logged in when the server starts up. If you do, someone can simply restart the server to gain access as an administrator.

## Adding a User Account

You can add an individual user account for each person who uses the services provided by your server. Your server gives each user account a separate email address, iChat address, and personal calendar. User accounts can also have access to the server's shared files and shared websites, and they can use VPN to access the server remotely. Availability of each service is subject to the service being turned on, and you can separately control each user account's access to services.

**To add a new user account:**

1. Click the Add (+) button in the Users pane of Server Preferences.
2. If you see a pop-up menu, choose one of the commands:

   *Import User From Directory:* You can import users' existing accounts from your organization's directory server. For information about doing this, see "Importing Users" on page 62.

   *Create New User:* You generally add new users from your organization's directory server if possible, but you can also create new user accounts in your server's directory. To do this, continue with step 3.

   If you don't see a pop-up menu when you click the Add (+) button, your server isn't connected to a directory server. Continue with step 3 to create a user account in your server's directory.
3. Enter the user's name.

   The name can be as long as 255 characters (from 255 Roman characters to as few as 85 Japanese characters). It can include spaces.
4. If you don't want to use the short name generated automatically, type a new short name. (Once the account is created, you won't be able to change the short name.)

   The short name typically is eight or fewer characters, but can be as long as 255 Roman characters. Use only the characters a through z, A through Z, 0 through 9, _ (underscore), or - (hyphen).

   ***Note:*** If the user whose account you're creating already has a Mac set up, try to use the same short name for the user's account on the server. Having the same short name will facilitate logging in for services.

5 Enter the user's password in the Password and Verify fields.

You can use Password Assistant to help you choose a new password. Click the Key button to the right of the Password field to see how secure the new password is.

6 Select "Allow user to administer this computer" if this user account needs to create other user accounts, create groups, install software on the server, or change server settings.

## Importing Users

If your server is connected to your organization's directory server, you can import users' existing accounts. Your server gives each imported user account a separate iChat address and personal calendar. Imported user accounts can also have access to the server's shared files and shared websites. If your server's mail service and VPN service are turned on, imported user accounts get email addresses and can use VPN to access the server remotely. Access to each service is subject to the service being turned on, and you can separately control each imported user account's access to services.

**To import a user account:**

1 Before importing a user account, be sure the invitation email is worded to suit your needs.

For information, see "Customizing the Server Invitation Email" on page 75.

2 In the Users pane of Server Preferences, click the Add (+) button and choose "Import User From Directory" from the pop-up menu.

If you don't see a pop-up menu when you click Add (+), your server isn't connected to a directory server in your organization. See "Connecting to a Directory Server" on page 135.

If your organization doesn't have a directory server (apart from your server), you can create new user accounts. For information about creating new user accounts, see "Adding a User Account" on page 60.

3 Select a user account from the list of accounts on your organization's directory server, optionally select "Send imported users an email invitation," and then click Import.

4 When you're finished importing user accounts, click Done.

User accounts you import using this procedure are listed as "Imported" in the Users pane.

Instead of importing user accounts individually using this procedure, you can import user accounts automatically from groups. For information about how to do this, see the next section.

## Importing Groups of Users Automatically

If your server is connected to your organization's directory server, you can import groups of existing user accounts. If you import a group, your server automatically imports user accounts for all group members. Your server periodically checks with your organization's directory server for changes in each imported group's membership, and automatically adds and removes imported user accounts as users are added to or removed from an imported group.

Your server gives each imported user account a separate iChat address and personal calendar. Imported user accounts can also have access to the server's shared files and shared websites. If your server's mail service and VPN service are turned on, imported user accounts get email addresses and can use VPN to access the server remotely. Access to each service is subject to the service being turned on, and you can separately control each imported user account's access to services.

**To import user accounts automatically from groups:**

1. Before importing user accounts from groups, be sure the invitation email is worded to suit your needs.

   For information, see "Customizing the Server Invitation Email" on page 75.

2. In the Users pane of Server Preferences, click the Action (gear) button and choose "Import Users From Groups" from the pop-up menu.

   If the Action pop-up menu doesn't include this option, your server isn't connected to a directory server. See "Connecting to a Directory Server" on page 135.

   If your organization doesn't have a directory server (apart from your server), you can create new user accounts. For information about creating new user accounts, see "Adding a User Account" on page 60.

3 Change the list on the right so it contains the groups whose members you want to import automatically.

   Add an available group by selecting it in the list on the left and clicking Add.

   Remove a group to import by selecting it in the list on the right and clicking Remove.

4 Optionally select "Send new imported users an email invitation."

5 When you're satisfied with the list of groups to import, click Save.

User accounts that are imported automatically from groups are listed as "Automatic" in the Users pane.

You can also import user accounts individually. For information about how to do this, see "Importing Users" on page 62.

## Deleting a User Account

You can use Server Preferences to delete user accounts that are no longer needed for your server. Deleting a user account cancels its group memberships and stops it from being an automatic iChat buddy. Deleting a user account also deletes the mail the user has stored on the server and makes the user's personal calendar inaccessible.

**To delete a user account:**

1 In the Users pane of Server Preferences, select the user account you want to change in the list on the left.

2 Click the Delete (–) button.

# Changing a User's Account Settings

Change a user's name, password, picture, or administrator privilege by clicking Account in the Users pane of Server Preferences.

**To change account settings for a user:**

1. In the Users pane of Server Preferences, select the user account you want to change in the list on the left.
2. Click Account, and then change any available setting, using the following information as a guide:

   *Name:* Enter the user's name. It can be used with the password to authenticate for services.

   *Short Name:* This is an abbreviation of the user's name. It's used for the user's email and iChat addresses. It can also be used with the password to authenticate for services. It can't be changed after the account is created.

   *Reset Password:* Click to reset the password. The password can't be changed for a user account that's imported from a directory server.

   *Picture:* Click to set the user's picture by choosing a picture, taking a picture with an attached camera, or applying a visual effect.

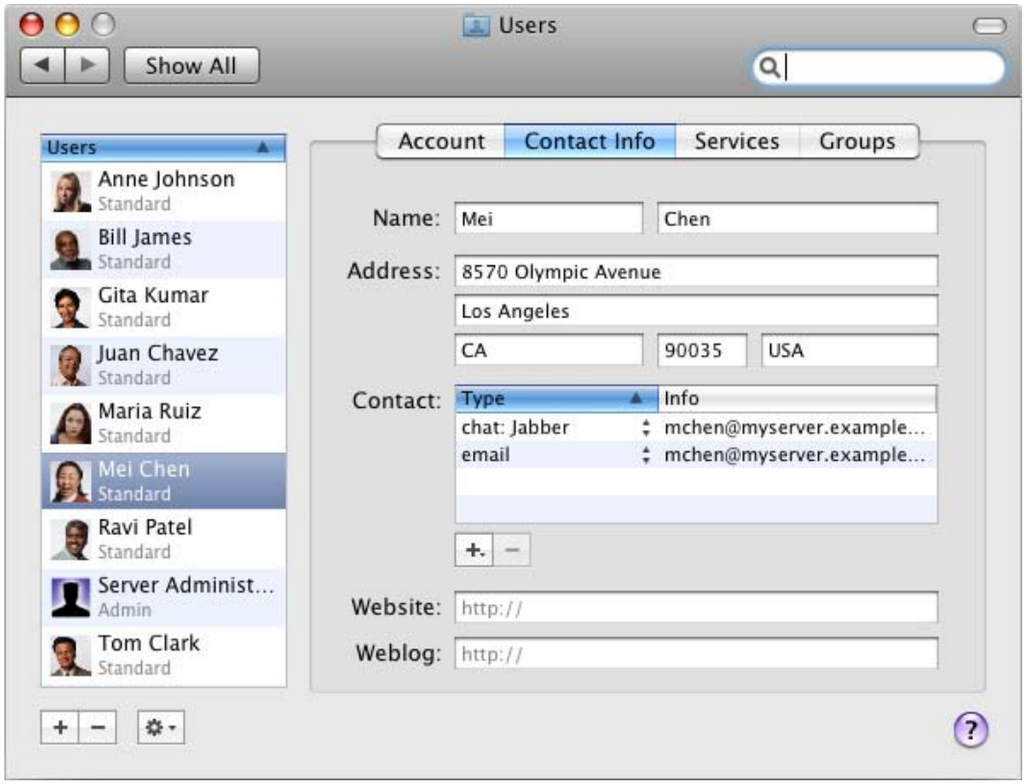
   *Allow user to administer this server:* If selected, this user account can manage users, groups, and services with Server Preferences.

   If settings besides the short name are dimmed in the Account pane, you can't change them because they are stored the directory server that your server is connected to.

   Users with Leopard can change their own account information using the Directory application.

# Changing a User's Contact Info

Change a user's first and last names, address, email and chat addresses, website address, and blog address by clicking Contact Info in the Users pane of Server Preferences.



**To change contact information for a user:**

1. In the Users pane of Server Preferences, select the user account you want to change in the list on the left.
2. Click Contact Info, and then change any available setting, using the following information as a guide:

   *Name:* The user's first name and last name.

   *Address:* The user's postal address.

   *Contact:* The user's instant messaging addresses and email addresses.

   - To add an address, click the Add (+) button.
   - To remove an address, select it and click the Delete (–) button.

   *Website:* The user's personal website address, beginning with http://.

   *Weblog:* The user's personal blog address, beginning with http://.

   If some settings in the Contact Info pane are dimmed, you can't change them because they are stored in the directory server that your server is connected to.

   Users with Leopard can change their own contact info using the Directory application. For information, see "Working with Directory Information on Leopard Users' Macs" on page 90.

## Controlling a User's Access to Services

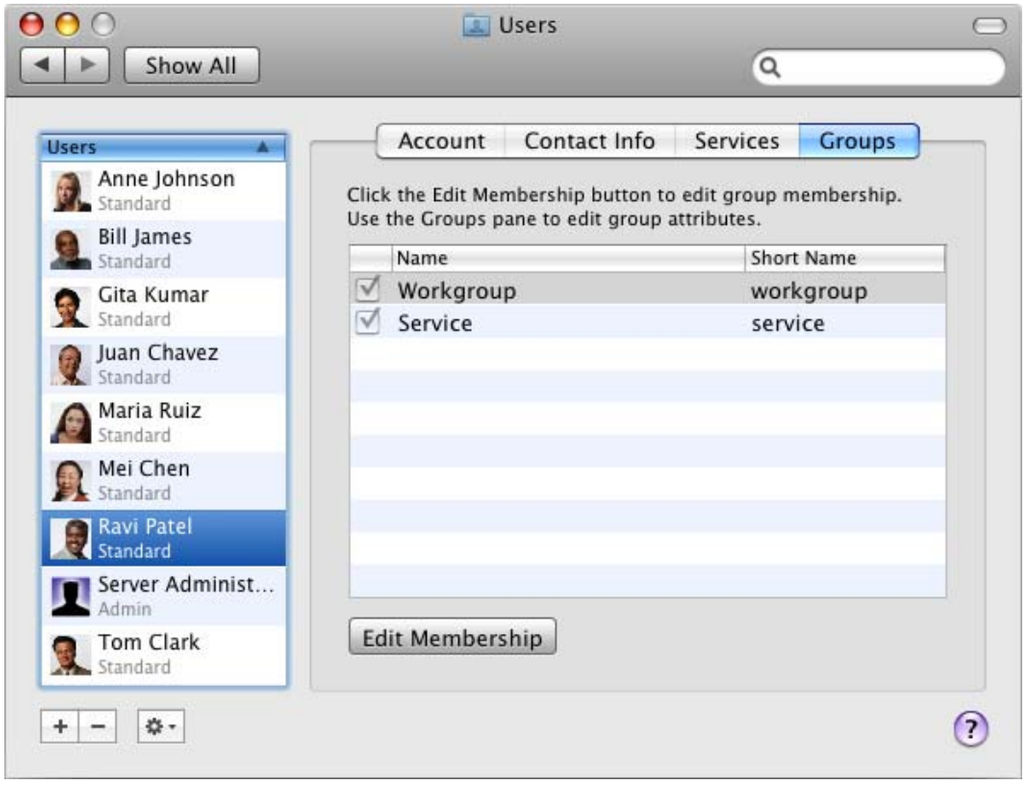
Control a user's access to individual services by clicking Services in the Users pane of Server Preferences.

**To change service access settings for a user:**

1. In the Users pane of Server Preferences, select the user account you want to control in the list on the left.
2. Click Services, and then select the services that you want to let the user access. Deselect the services you don't want the user to access.

## Changing a User's Group Membership

Make a user a member of a group or remove a user from a group by clicking Groups in the Users pane.



**To change group membership for a user:**

1. In the Users pane of Server Preferences, select the user account you want to change in the list on the left.
2. Click Groups, and then click Edit Membership.
3. Select the checkbox next to each group you want the user to be a member of. Deselect the checkbox next to each group you don't want the user to be a member of.
4. When you finish making changes, click Edit Membership again to display a static list of groups that the user belongs to.

For information about adding, removing, or configuring groups, see Chapter 7, "Managing Groups."

## Changing a User's Name or Password

You can use Server Preferences to change the name or password for a standard user account or an administrator account.

**To change a user account's name or password:**

1. In the Users pane of Server Preferences, select a standard or administrator user account you want to change in the list on the left, and then click Account.
2. If you want to change the name, edit the Name field.

   The name can be as long as 255 characters (from 255 Roman characters to as few as 85 Japanese characters). It can include spaces.

   You can't change a user account's short name using Server Preferences.
3. If you want to change the password, click Reset Password, enter the new password in the New Password and Verify fields, and click Change Password.

You can use Password Assistant to help you choose a new password. Click the Key button to the right of the New Password field to see how secure the new password is.

Users with Leopard can change their name and password using the Directory application. Users can change their passwords when authenticating for file sharing.

If your server has imported user accounts, or user accounts imported automatically from groups, their names or passwords can be changed by an administrator of the directory server where the accounts are stored. If that directory server is a standard configuration of Mac OS X Server and you are an administrator of it, you can connect Server Preferences to it remotely and then make the changes. For information about how to connect remotely, see "Connecting Server Preferences to a Remote Server" on page 51.

If your server's imported user accounts are stored on an advanced configuration of Mac OS X Server, the directory administrator can use Workgroup Manager to change the account name and password. For information about using Workgroup Manager, open it and then use the Help menu.

To change the password or other attributes of the Local Administrator account, use the Accounts pane of System Preferences after setting up the server. For information about changing local accounts, open System Preferences and then use the Help menu.

To change the password of the System Administrator (root) account, use the Directory Utility application after setting up the server. For information about using Directory Utility, open it and then use the Help menu.

## Changing a User's Picture

You can use Server Preferences to change the picture for a standard user account or an administrator account. If your server has imported user accounts or user accounts imported automatically from groups, you can change their pictures unless the pictures were set on your organization's directory server.

**To change the picture for a user account:**

1. In the Users pane of Server Preferences, select a user account you want to change in the list on the left, and then click Account.
2. To use an included picture, click the picture field and choose a picture from the pop-up menu.
3. To edit the picture or use a one from a camera or a file, click the picture field, choose Edit Picture from the pop-up menu, make changes to the picture as desired, and then click Set or Cancel.

   To choose a picture you've used recently, click Recent Pictures.

   To move the picture, drag it up, down, or sideways.

   To crop the picture, drag the slider.

   To capture a new picture using a video camera attached to the computer, click the Camera button.

   To apply a visual effect, click the Visual Effects (grid) button, scroll through the available effects, and select the effect you want.

   To use a picture file, click Choose.

Users with Leopard can change their own pictures using the Directory application. For information, see "Working with Directory Information on Leopard Users' Macs" on page 90.

## Customizing the Welcome Email

You can use Server Preferences to add your name, email address, and a personal introduction to the standard email message that your server sends to tell new users about its services. The standard message specifies the server's DNS name and the recipient's email address, and it explains the services that the server provides. The standard message also includes links to available file sharing and web services.

The server sends the email automatically when you add a new user account. However, your server doesn't send the email if its mail service is stopped when you add new user accounts.

**To customize the email sent to newly added user accounts:**

1. In the Users pane of Server Preferences, click the Action (gear) button and choose "Email Message Settings" from the pop-up menu.
2. Enter the sender's name and email address in the Admin Full Name and Admin Email fields.
3. Optionally enter a personal message in the Welcome field.

   You can use the message to introduce yourself, so recipients know the email is genuine. Example: Hi, I'm the administrator for our server, myserver.example.com. If you need help getting services from it, please don't hesitate to send me an email or call me at 310-555-4357. —Bill

Users receive the welcome email when they start using their email accounts. They see your name and message in a boxed section set apart from the standard message text that the server generates.

## Customizing the Server Invitation Email

You can use Server Preferences to add your name, email address, and a personal introduction to the standard email message that your server can send to tell newly imported users how to get its services. The standard message specifies the server's DNS name, and it explains the services that the server provides. Recipients who have Mac OS X v10.5 Leopard can click a button in the email to automatically set up their Macs to get services from your server. The standard message also includes links to available file sharing and web services.

You can select an option to send the email when you import users or a group of users. The server sends the invitation to email addresses that already exist in the imported user accounts. The server doesn't send the invitation to an imported user account that doesn't contain an email address.

**To customize the email sent to newly imported user accounts:**

1. In the Users pane of Server Preferences, click the Action (gear) button and choose "Email Message Settings" from the pop-up menu.
2. Enter the sender's name and email address in the Admin Full Name and Admin Email fields.
3. Optionally enter a personal message in the Invitation field.

   If you don't see an Invitation field, your server isn't connected to a directory server. See "Connecting to a Directory Server" on page 135.

You can use the message to introduce yourself, so recipients know the email is genuine. Example:  Hi, I'm the administrator for our server, myserver.example.com. If you need help setting up your computer to get services from it, please don't hesitate to send me an email or call me at 310-555-4357. —Bill

Recipients see your name and message in a boxed section set apart from the standard message text that the server generates.

## Customizing the Group Invitation Email

You can use Server Preferences to add your name, email address, and a personal introduction to the standard email message that your server can send to tell new external members of a group how to use the group's services. The standard message specifies the group name and the server's DNS name, and it explains the services that the server provides. The standard message also includes links to available file sharing and group services.

You can select an option to send the email when you add users or groups from your organization's directory server as external members of a group on your server. The server sends the invitation to email addresses that already exist in each new external member's user account. The server doesn't sent the invitation to a new external member whose user account doesn't contain an email address.

**To customize the email sent to new external members of a group:**

1. In the Users pane of Server Preferences, click the Action (gear) button and choose "Email Message Settings" from the pop-up menu.
2. Enter the sender's name and email address in the Admin Full Name and Admin Email fields.
3. Optionally enter a personal message in the Group Invitation field.

   If you don't see the Group Invitation field, your server isn't connected to a directory server. See "Connecting to a Directory Server" on page 135.

   You can use the message to introduce yourself, so recipients know the email is genuine. Example: Hi, I'm the administrator for the server myserver.example.com, which provides services for the group. If you need help getting group services from the server, please don't hesitate to send me an email or call me at 310-555-4357. —Bill

   Recipients see your name and message in a boxed section set apart from the standard message text that the server generates.

# Managing Users' Computers

# 6

## Learn how to help users set up their computers to use the services you server provides.

Users need to set up their computers to get services from your server. Users with Mac OS X version 10.5 Leopard can have their computers set up automatically. Users with earlier Mac OS X versions or Windows need to set up their computers manually.

Users whose Macs have Leopard and are connected to your server can use the Directory application to share contacts, add groups, set up group services, and manage their own contact information.

## Setting Up Leopard Users' Macs Automatically

Users who have Mac OS X v10.5 Leopard can automatically set up their Macs to get services from your server. The procedure is different for three types of Leopard users, as explained in the following table.

| Automatic setup for | Begins after users | For information, see |
|---|---|---|
| New users of Leopard (with a new Mac or Leopard newly installed) if your server is a standard configuration | Complete the "Connect to Mac OS X Server" pane during Leopard setup | "Setting Up Services for New Leopard Users," next |
| Current users of Leopard whose accounts you import from a directory server | Click the button in the invitation email they receive | "Setting Up Leopard Users with an Invitation Email" on page 84 |
| Current users of Leopard whose accounts you create on the server | Open the Directory Utility application (or after it opens automatically) | "Setting Up a Mac by Using Directory Utility" on page 85 |

After a user finishes one of the automatic setup procedures, the user is ready to access services as shown in the table on the next page. (Of course, the user can only access services that are turned on.)

The user's local account is tied to the user's server account, and the local account is labeled "Managed" in the Accounts pane of System Preferences. Both accounts have the same password.

- If the user's server account is new, its password is changed to the password from the user's existing local account.
- If the user's server account is imported from an existing account in a directory server, this account's password replaces the user's local account password.

If the user changes the password in the Accounts pane of System Preferences, the server account password will change to match.

If a user's accounts were created with different user names, the user can change the long name of the local account by using the Accounts pane of System Preferences. The user can also use the Directory application to change the long name of the server account.

For information about local, server, and imported user accounts, see "About User Accounts" on page 56.

| Application | Is ready to access |
|---|---|
| **Address Book** | Other users' contact information |
| **Directory** | User, group, and resource information |
| **Finder** | Shared folders |
| **iCal** | User's personal calendar and group calendar |
| **iChat** | User's Jabber account and buddy list |
| **Mail** | User's email account and other users' email addresses |
| **Safari** | Server website: http://*myserver.example.com*<br>Group wikis: http://*myserver.example.com*/groups<br>User blogs: http://*myserver.example.com*/users<br>Webmail: http://*myserver.example.com*/webmail |
| **Network preferences** | VPN connection |

## Setting Up Services for New Leopard Users

During initial setup of a new Mac or a Mac with Mac OS X v10.5 Leopard newly installed, the "Connect to Mac OS X Server" pane lets the user choose your server if it has a standard configuration of Leopard Server and the user has an account on it. (A server is a standard configuration if it doesn't have imported user accounts and isn't connected to a directory server.)

This pane appears only if the Mac detects a standard configuration of Leopard Server on the network. This pane doesn't allow a user to choose a workgroup configuration of Leopard Server. (A server is a workgroup configuration if it's connected to a directory server. See "Connecting to a Directory Server" on page 136.)

If the user completes this pane:

- A local user account is created on the user's Mac based on the specified account on the server. Both accounts have the same long name, short name, and password.
- A home folder is set up on the user's computer.
- The user's computer is automatically connected to your server and configured to get services from it. For information about how the computer gets services, see "Setting Up Leopard Users' Macs Automatically" on page 79.

The user may be unable to complete the "Connect to Mac OS X Server" pane for several reasons. For example:

- The user may not know your server's name or may not have a user account on the server. In these cases, the user can skip the "Connect to Mac OS X Server" pane by deselecting "Use the following Mac OS X Server."
- The user's Mac may not be connected to the network during initial setup. In this case, the "Create Your Account" pane appears instead of the "Connect to Mac OS X Server" pane, and the user creates a new account not based on a server account.

If the user doesn't complete the "Connect to Mac OS X Server" pane for any reason, the user can finish initial setup and then configure the Mac to get services from your server. For information about how the user does this, see "Setting Up a Mac by Using Directory Utility" on page 85.

## Setting Up Leopard Users with an Invitation Email

If some users already have Mac OS X v10.5 Leopard set up and you import their user accounts from a directory server, you can have an email sent inviting them to join the server. Leopard users can click a button in the invitation email to begin using an assistant that connects their computers to the server and sets up their applications to get its services. For information about the assistant, see "Setting Up a Mac by Using Directory Utility," next.

***Note:*** To receive an invitation email, an imported user must have an email address in the user's account on the directory server. Only users with imported user accounts receive the invitation email. Users with accounts you create on your server don't receive the invitation email. The next two sections describe how their computers get set up.

When Leopard users click the button in the invitation email to use the assistant, it checks the server for a user account with a long name or short name that matches the local user account that's currently logged in on the user's computer. If the assistant finds a match, it asks whether the user wants to tie the local account to the server account. If the user agrees, the local account is changed to use the password from the account on the server. The user's home folder remains on the user's computer.

The user chooses whether to have applications set up to get services from the server. For information about how applications are set up, see "Setting Up Leopard Users' Macs Automatically" on page 79.

For information about adding your name, email address, and a personal introduction to the standard message text that the server generates for the invitation email, see "Customizing the Server Invitation Email" on page 75.

## Setting Up a Mac by Using Directory Utility

If a Mac with Mac OS X v10.5 Leopard isn't connected to a server yet, and Leopard detects your server on the network, Directory Utility opens automatically. It displays an assistant that connects the Mac to the server and sets up applications to use its services. The user can also open Directory Utility manually, and it will display the assistant if it detects your server.


While using the assistant:

- The user decides whether to set up the Mac to get services from your server. If Directory Utility discovers more than one server that can provide services, it lists the servers by computer name and IP address and the user has to know which server to choose. The list includes only servers with a standard or workgroup configuration of Leopard Server.

- The user enters the name and password of the user account on the server and the password of the local user account that's currently logged in on the user's computer. The password of the server account changes to the password of the local account. The user's home folder remains on the user's computer.
- The user chooses whether to have applications set up to get services from the server. For information about how the applications get services, see "Setting Up Leopard Users' Macs Automatically" on page 79.

## Setting Up Users' Computers Manually

Users who have Mac OS X v10.4 Tiger or earlier, or who are running Windows, can get services from your server by configuring their applications manually. They can use the settings in the following table, replacing the italicized placeholders with your server's DNS name and the user's short name.

| Application | Settings |
|---|---|
| **Finder**<br>(File sharing) | afp://*myserver.example.com*<br>smb://*myserver.example.com* |
| **iChat**<br>(XMPP instant messaging application) | Account type: Jabber<br>Server: *myserver.example.com*<br>Jabber ID: *usershortname@myserver.example.com*<br>Authentication: Kerberos v5 preferred<br>Port: 5223 |

| Application | Settings |
| --- | --- |
| **Mail**<br>(Email application) | Account type: IMAP or POP<br>Incoming mail server: *myserver.example.com*<br>Outgoing mail server: *myserver.example.com*<br>Email address: *usershortname@myserver.example.com*<br>Authentication: Kerberos v5 preferred |
| **iCal**<br>(CalDAV calendar application) | Subscribe to: http://*myserver.example.com*:8008/principals/users/*usershortname*<br>If the calendar application supports SSL, subscribe to: https://*myserver.example.com*:8443/principals/users/*usershortname* |
| **Safari**<br>(Web browser) | Website: http://*myserver.example.com*<br>Group wikis: http://*myserver.example.com*/groups<br>User blogs: http://*myserver.example.com*/users<br>Webmail: http://*myserver.example.com*/webmail |
| **Internet Connect**<br>(VPN connection) | See "Setting Up a Mac User's VPN Connection," next, or "Setting Up a User's VPN Connection Manually" on page 89 |

## Setting Up a Mac User's VPN Connection

You can use Server Preferences to generate a file that Mac users can open to create a VPN configuration automatically. Then a user can make a VPN connection to the server and its network via the Internet. The configuration file works with Mac OS X v10.3 or later. For information about generating the configuration file, see page 126.

When you give Mac users a VPN configuration file you have generated, you can also give them the following instructions for using it.

## Using a VPN Configuration File

If you got a VPN configuration file from the person who manages your server, and you have Mac OS X version 10.3 or later, you can use the file to set up your computer for making VPN connections to the server. The configuration file contains all the information necessary to make a VPN connection to the server, except the name and password of your user account on the server.

**To import a VPN configuration from a file:**

1 Open the file and select VPN (L2TP) if asked where to put the imported configuration.

2 Enter your user account name in the Account Name field.

3 If the server administrator tells you to enter your user account password, enter it in the Password field.

If you have Mac OS X v10.5 Leopard, click Authentication Settings to see the Password field.

For security, the administrator may tell you not to enter your password now.

4 Quit the application, and save or apply your changes when prompted.

If you want to make a VPN connection from a network with a firewall, configure it to allow traffic on UDP ports 500 and 4500, and on IP protocol 50.

If you didn't enter your password before saving the VPN configuration, you'll be asked to enter it each time you make a VPN connection to the server.

## Setting Up a User's VPN Connection Manually

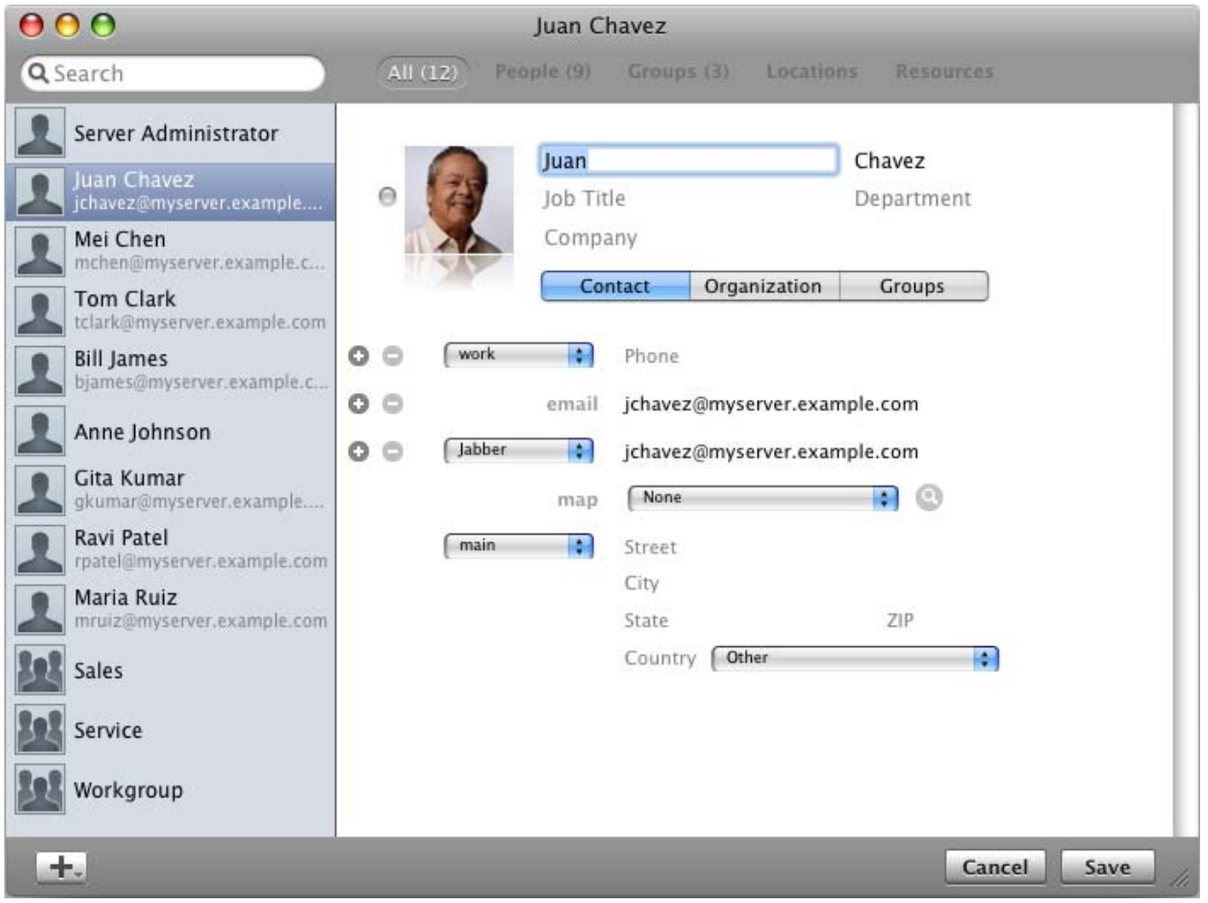
Users may be unable to import VPN settings from a configuration file because they don't have the file or they have Windows computers, which can't use the file. These users can manually set up their computers for a VPN connection to your server. They need to create a new VPN configuration and enter the following VPN connection settings:

- *VPN server or host:* your server's DNS name or public IP address
- *VPN type:* L2TP over IPSec
- *Shared secret (key) for IPSec:* shown in the VPN pane of Server Preferences when you click Edit and select "Show shared secret"
- *Account name:* the short name of the user's account on your server
- *User password:* the password of the user's account on your server

Users who want to make a VPN connection from a computer or network with a firewall need to configure the firewall to allow traffic on UDP ports 500 and 4500, and on IP protocol 50.

## Working with Directory Information on Leopard Users' Macs

Users who have Mac OS X v10.5 Leopard can use the Directory application to view shared information about people, groups, locations, and resources. They can use Directory to share contacts, add and remove groups, change group membership, set up group services, and manage their own contact information.



When users look up information about other people, they'll see more than just contact information. Directory can display the picture a person has provided, list public groups the person belongs to, list the person's manager and direct reports, and show a map that pinpoints the person's location.

Directory works together with several Mac OS X applications. Users can create shared contacts from Address Book entries, click email addresses to send email using Mail, or visit group wiki websites in Safari.

Directory shows users the records from your server's directory. If your server is connected to a directory server, Directory also shows its records.

***Note:*** Changes that users make with Directory show up in Server Preferences. To see the most recent changes made with Directory, you may need to choose View > Refresh in Server Preferences.

For information about how to use Directory, open it and then use the Help menu. Directory is located in /Applications/Utilities/.

# Managing Groups

# 7

## Use the Groups pane to add or delete groups, see and change group membership, or configure group services.

In the Groups pane, you create groups, set up group services such as wikis and blogs, add and remove group members, and delete unneeded groups. For information about the settings and controls in this pane, click the Help button in the lower-right corner of the Server Preferences window.

## Creating a New Group

You can create a new group whenever some server users need their own mailing list, shared group folder, wiki and blog, calendar, or mailing list archive. You select which of those services each group has.

**To create a new group:**

1. Click the Add (+) button in the Groups pane of Server Preferences.
2. Enter a name for the group, optionally change the short name, and click Create Group.

   The group name can be as long as 255 characters (from 255 Roman characters to as few as 85 Japanese characters). It can include spaces.

   Once the account is created, you won't be able to change the short name. If you don't want to use the short name generated automatically, type a new short name.

   The short name typically is eight or fewer characters, but can be as long as 255 Roman characters. Use only the characters a through z, A through Z, 0 through 9, _ (underscore), or - (hyphen).
3. Select the services you want this group to have.

   *File sharing folder:* A shared group folder is set up, and group members can get files from the shared group folder and put files in it. It's named after the group's short name and located on the server's startup disk at /Groups/.

   *Mailing list:* A group email address is set up using the group short name, and group members receive all mail sent to the group address.

*Wiki and blog:* Group members can view and contribute to the group wiki using their web browsers.

*Web calendar:* Group members can check the group calendar and add events to it using their web browsers.

*Mailing list web archive:* Group members can read archived email sent to the group email address.

4 Add users to the group by clicking Members, and add users and groups from your organization's directory server by clicking External Members.

For instructions, see "Adding or Removing Members of a Group" on page 97 and "Adding or Removing External Members of a Group" on page 99.

If you don't see an External Members tab (shown on page 99), your server isn't connected to a directory server. See "Connecting to a Directory Server" on page 135.

To access group services, group members must authenticate using their user account name and password. Availability of group services is subject to file sharing service, iCal service, web services, and mail service being turned on.

Users with Leopard can add groups using the Directory application. For information, see "Working with Directory Information on Leopard Users' Macs" on page 90.

## Deleting a Group

You can use Server Preferences to delete groups that are no longer needed.

**To delete a group:**

1. In the Groups pane of Server Preferences, select the group you want to delete in the list on the left.
2. Click the Delete (–) button.

After you delete a group, the group's shared folder and website folder remain on the server's startup disk. The shared folder is located at /Groups/, and the group website folder is at /Library/Collaboration/Groups/. You can keep these folders or drag them to the Trash.

Users with Leopard can remove groups using the Directory application. For instructions, users can open Directory and then use the Help menu.

# Adding or Removing Members of a Group

In the Groups pane, you can add or remove group members who are users you have created or imported in the Users pane. (To have imported users, your server must be connected to a directory server.)

**To add or remove members of a group:**

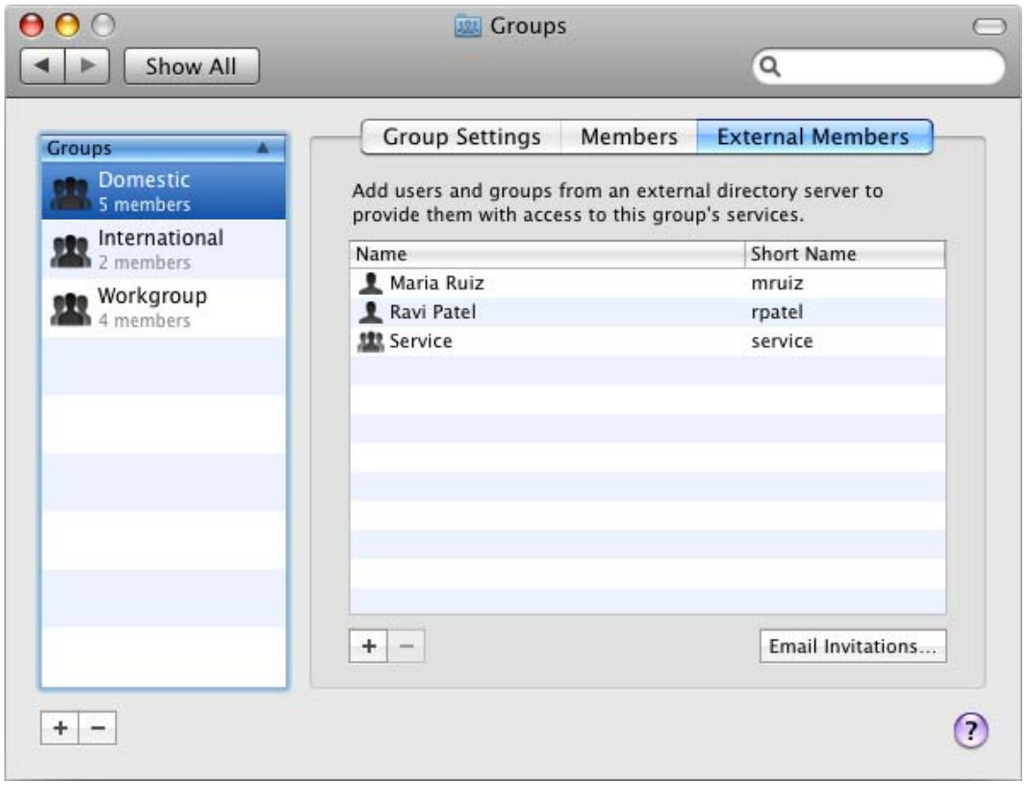
1. In the Groups pane of Server Preferences, select the group you want to edit in the list on the left.
2. Click Members, and then click Edit Membership.
3. Select the checkbox next to each user you want to be a member of the group. Deselect the checkbox next to each user you don't want to be a member.
4. When you finish, click Edit Membership again to display a static list of group members.

Users with Leopard can add and remove group members using the Directory application. For information, see "Working with Directory Information on Leopard Users' Macs" on page 90.

For information about adding, deleting, or configuring user accounts, see Chapter 5, "Managing Users."

## Adding or Removing External Members of a Group

If your server is connected to a directory server, your group members can include users and group from the directory server. External members don't have user accounts on your server, but they can use the group's wiki website. You use the Groups pane to add or remove external group members.



**To add or remove external group members:**

1. Before adding external group members, be sure the group invitation email is worded to suit your needs.

   For information, see "Customizing the Group Invitation Email" on page 76.

2. In the Groups pane of Server Preferences, select the group you want to change in the list on the left, and click External Members.

   If you don't see an External Members tab, your server isn't connected to a directory server. See "Connecting to a Directory Server" on page 135.

3. To remove an external group member, select the member in the list on the right, and then click the Delete (–) button below the list.

4. To add a group member, click the Add (+) button below the list of members.

5. Select a prospective member from the list, optionally select "Send added users an email invitation," and click Add to Group.

   To search for a user or group, type the first part of the name in the search box.

   To show or hide users and groups below a heading, click the triangle in the heading.

6. When you finish adding members, click Done.

   For information about adding, deleting, or configuring user accounts, see Chapter 5, "Managing Users."

## Changing Group Settings

Change a group's name or set up group services by clicking Groups in the Users pane of Server Preferences. Group services include a shared group folder, group mailing list, group website with wiki and blog, web calendar, and web mailing list archive. For information about the settings and controls in this pane, click the Help button in the lower-right corner of the Server Preferences window.

## Changing a Group's Name

You can use Server Preferences to change the name of a group.

**To change a group's name:**

1. In the Groups pane of Server Preferences, select the group you want to change in the list on the left, and then click Group Settings.
2. Edit the Group Name field.

   The name can be as long as 255 characters (from 255 Roman characters to as few as 85 Japanese characters). It can include spaces.

   You can't change a group's short name using Server Preferences.

## Setting Up a Group File Sharing Folder

You can use Server Preferences to set up a shared folder for a group. Group members can get files from the shared group folder and put files in it. It's named using the group's short name and is located on the server's startup disk at /Groups/.

**To set up a file sharing folder for a group:**

1. In the Groups pane of Server Preferences, select a group in the list on the left or create a new group, and then click Group Settings.

   For information, see "Creating a New Group" on page 94.
2. Select "File sharing folder."

3 Click Show All, click File Sharing, and make sure file sharing service is on and access to the Groups shared folder is turned on.

Group members authenticate using their user account name and password to access the group's shared folder.

## Setting Up a Group Mailing List

You can use Server Preferences to set up a mailing list for a group. A group email address is set up using the group's short name. The server takes mail sent to that address and delivers it to the email address of each member of the group.

**To set up a mailing list for a group:**

1 In the Groups pane of Server Preferences, select a group in the list on the left or create a new group, and then click Group Settings.

2 Select "Mailing list."

3 Click Show All and make sure mail service is on.

## Setting Up a Group Wiki Website

You can use Server Preferences to set up a group website with wiki, blog, optional calendar, and optional mailing list archive. Using their web browsers, group members can view and contribute to the group wiki and blog, check the group calendar and add events to it, and read archived email sent to the group email address.

**To set up a wiki website for a group:**

1. In the Groups pane of Server Preferences, select a group in the list on the left or create a new group, and then click Group Settings.
2. Select "Wiki and blog."
3. Select "Web calendar" if you want the group website to include a shared calendar of events.
4. Select "Mailing list web archive" and "Mailing list" if you want the group website to include a group mailing list archive.
5. Click Show All, click Web, and make sure web service is on and the "Enable group wikis" option is selected.
6. If you turned on the web calendar in step 3, click Show All and make sure iCal service is on.
7. If you turned on the web mailing list web archive in step 4, click Show All and make sure mail service is on.

You can open the group wiki website by clicking the link arrow next to "Wiki and blog." You can open the group web calendar by clicking the link arrow next to "Web calendar."

For information about using the wiki, blog, calendar, and mailing list archive, see the built-in help on the group website.

Group members can view their website at:

http://*serverDNSname*/groups/*groupshortname*

Replace the italicized placeholders with the server's DNS name and the group short name. The server's DNS name is shown in the Information pane of Server Preferences.

Group members log in using their user account name and password to access the group's wiki, blog, web calendar, or web mailing list archive.

You can control access to group services by using the Directory application (located in /Applications/Utilities/). For information about using Directory, open it and use the Help menu.

## Setting Up a Group Calendar

You can use Server Preferences to set up a group calendar as part of a group wiki website. Users can check the group calendar and add events to it using their web browsers.

**To set up a web calendar for a group with a wiki website:**

1. In the Groups pane of Server Preferences, click Group Settings and in the list on the left, select a group that has a wiki website.
2. Select "Web calendar."
3. Click Show All, click iCal, and make sure iCal service is on.

You can open the group web calendar by clicking the link arrow next to "Web calendar."

Group members can view their web calendar at:

http://*serverDNSname*/groups/*groupshortname*/calendar

Replace the italicized placeholders with the server's DNS name and the group short name. The server's DNS name is shown in the Information pane of Server Preferences.

Group members log in using their user account name and password to access the group's web calendar.

## Setting Up a Group Mailing List Archive

You can use Server Preferences to set up a mailing list archive as part of a group wiki website. This service lets users read archived email sent to the group email address, using their web browsers.

**To set up a mailing list web archive:**

1. In the Groups pane of Server Preferences, click Group Settings and in the list on the left, select a group that has a wiki website.
2. Select "Mailing list web archive" and "Mailing List."
3. Click Show All, click Mail, and make sure mail service is on.

Group members can view their mailing list web archive at:

http://*serverDNSname*/groups/*groupshortname*/mailinglist

Replace the italicized placeholders with the server's DNS name and the group short name. The server's DNS name is shown in the Information pane of Server Preferences.

Group members log in using their user account name and password to access the group mailing list web archive.

# Customizing Services

# 8

## Use Server Preferences to change settings for file sharing, iCal, iChat, mail, web, and VPN services.

## Managing File Sharing Service

Use the File Sharing pane to turn file sharing service on or off, or control access to the Groups and Public shared folders. You can also add your own shared folders, also known as share points, or delete them. For information about the settings and controls in this pane, click the Help button in the lower-right corner of the Server Preferences window.

## About File Sharing Service

Mac OS X Server file sharing service lets users access shared folders and store files on the server. They can use Macintosh, Windows, or UNIX computers to access their files and shared folders without special software, using native file protocols including AFP and SMB. Windows users see Mac OS X Server file servers in their Network Places, just like Windows file servers.

## Adding a Shared Folder

You can add a shared folder for users to select when they connect to the server for file sharing. Mac users see the shared folder as a shared disk in the Finder. Windows users see the shared folder in Network Places. Shared folders are also called share points.

**To add a shared folder:**

1. If you want to share a folder that doesn't exist yet, create it and name it in the Finder.
2. In the File Sharing pane of Server Preferences, click the Add (+) button, choose the folder you want to share, and click Open.

   If you're using Server Preferences on the server, you can also drag a folder that you want to share from a Finder window to the list in the File Sharing pane.
3. To allow users to access this shared folder without logging in, or change the list of users who can access this shared folder, click Edit Permissions.

   For instructions, see "Controlling Access to a Shared Folder" on page 109.

   If you want to set up a group file sharing folder, use the Groups pane of Server Preferences. Group file sharing folders are located in the /Groups/ shared folder. For information, see "Setting Up a Group File Sharing Folder" on page 102.

## Removing a Shared Folder

You can use Server Preferences to remove shared folders that you no longer want available for file sharing. When you remove a shared folder, the folder and its contents remain on the server's disk.

**To remove a shared folder:**

- In the File Sharing pane of Server Preferences, select the shared folder you want to remove, and then click the Delete (–) button.

## Controlling Access to a Shared Folder

You can enable or disable access to each shared folder listed in the File Sharing pane of Server Preferences. You can specify which users have read and write access to each shared folder and its contents: all users with accounts on your server or only users and groups you select. You can also choose whether guest access is on or off for each shared folder. Enabling access to a shared folder allows users to use the AFP and SMB file sharing protocols to access the folder. Guests can access a shared folder without logging in.

**To change settings for a shared folder:**

1. In the File Sharing pane of Server Preferences, locate the shared folder in the list.
2. To enable access to a shared folder, select its checkbox.
3. To give all users with accounts on your server read and write access to the shared folder and its contents, click Edit Permissions and select "All Registered Users."
4. To restrict read and write access to the shared folder and its contents, click Edit Permissions, select "Only these Registered Users and groups," and select the checkbox next to each user and group you want to have read and write access.

If you give a group read and write access, all users who are members have read and write access even if their individual checkboxes are deselected.

5 To allow guest users to read the contents of a shared folder, click Edit Permissions and select "Allow Guests read-only access." Deselect this option to disallow guest access.

If you enable access to a shared folder, users can access it with the most common file sharing protocols, AFP and SMB.

You can also change access permissions for a shared folder or any item in it by using the Info window in the Finder. For information about setting permissions for folders and files, switch to the Finder and then use the Help menu.

## Finding a Server's File Sharing Address

Users and optionally guests can connect to the server's shared folders using the AFP or SMB protocols at these addresses:

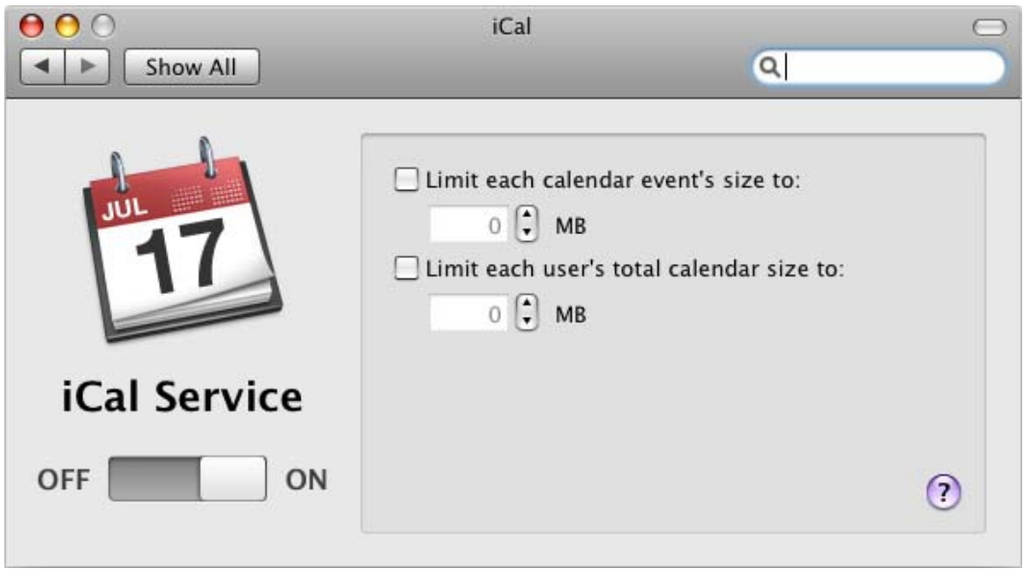
- smb://*serverDNSname*
- afp://*serverDNSname*

Replace the italicized placeholder with your server's DNS name, which is shown in the Information pane of Server Preferences.

To access shared folders that don't have guest access enabled, users must log in using the name and password of their user account on the server. After logging in, users have access to the shared folder of each group they belong to. If guest access is enabled for a shared folder, users can connect without logging in. For information, see "Controlling Access to a Shared Folder" on page 109.

# Managing iCal Service

Use the iCal pane to turn iCal calendar service on or off, limit file attachment size, or limit each user's total calendar data.




**To configure the iCal pane:**

- Change any available setting, using the following information as a guide:

  *On/Off* indicates the status of iCal service, and clicking the On/Off switch turns the service on or off.

  *Limit each calendar event's size to __ MB:* Sets the maximum total size of an event, to-do item, or other calendar object, including the total size of all attached files. If a user tries to save a larger calendar object, the server sends an error message to the user's calendar application.

  *Limit each user's total calendar size to __ MB:* Limits how much disk space a user's events, to-do items, and other calendar data can use on the server. If a user exceeds this limit, the server sends an error message to the user's calendar application.

## About iCal Service

The calendar service for Mac OS X Server, iCal Server, makes it easy for users to share calendars, schedule meetings, and coordinate events. Colleagues can quickly and easily check each other's availability, set up and propose meetings, book conference rooms, reserve projectors, and more. iCal Server sends the invitations, which can include information such as an agenda or to-do list, and tabulates replies.

A computer with Mac OS X version 10.5 Leopard can have its iCal application automatically set up to use iCal Server. See "Setting Up Leopard Users' Macs Automatically" on page 79.

iCal server also works with other popular calendar applications that support the standard CalDAV protocol.

# Managing iChat Service

Use the iChat pane to turn iChat instant messaging service on or off, make all users buddies, enable chatting with other instant messaging systems, or set up logging and archiving of all chats. For information about the settings and controls in this pane, click the Help button in the lower-right corner of the Server Preferences window.


## About iChat Service

iChat service provides secure instant messaging (IM) for Macintosh, Windows, and Linux users. Team members can brainstorm solutions, make plans, exchange URLs, or transfer files without worrying about outsiders intercepting confidential information. iChat service provides text messaging between users or among multiple users. It also facilitates direct connections between users for audio, video, and multiway audio and video sessions.

Users' iChat account information is stored on the server. Users may access their accounts from any Mac and see the same buddy lists, groups, and so forth.

A computer with Mac OS X version 10.5 Leopard can have its iChat application automatically set up to use your server's iChat service. See "Setting Up Leopard Users' Macs Automatically" on page 79.

iChat service also works with Jabber-compatible instant messaging software available for Windows, Linux, and even popular PDAs.

## Making All Users Buddies

You can have the Jabber IDs (screen names) of all users with accounts on the server automatically added to each user's Jabber buddy list. Users see their Jabber buddy lists in iChat (or other XMPP instant messaging application), and may add and remove buddies.

**To make all users Jabber buddies:**

1. In the iChat pane of Server Preferences, select "Automatically make all users buddies."
2. Restart iChat service by clicking On/Off twice.

Changes to iChat service settings take effect once iChat service is restarted.

If you deselect "Automatically make all users buddies," users are not automatically removed from each other's buddy lists. Users can remove buddies that were automatically added to their buddy lists.

## Chatting with Users of Google Talk and Other XMPP Services

You can allow users of the server to exchange instant messages with users of Google Talk and other instant messaging systems that use the XMPP protocol.

**To allow chatting via Google Talk and other XMPP services:**

1. In the iChat pane of Server Preferences, select "Enable server-to-server communication."
2. Restart iChat service by clicking On/Off twice.

   Changes to iChat service settings take effect once iChat service is restarted.

## Saving and Archiving Instant Messages

You can have iChat service save a transcript of all instant messages in a text file. The service compresses the transcript and saves an archive once a week. The latest transcript and the compressed archives are in /var/jabberd/message_archives/.

**To save and archive instant messages:**

1. In the iChat pane of Server Preferences, select "Log and archive all chats."
2. Restart iChat service by clicking On/Off twice.

   Changes to iChat service settings take effect once iChat service is restarted.

## Managing Mail Service

Use the Mail pane to turn mail service on or off, edit the welcome message sent to new users, specify a relay server for outgoing mail, or adjust junk mail and virus filtering. For information about the settings and controls in this pane, click the Help button in the lower-right corner of the Server Preferences window.


## About Mail Service

Mail service lets users send and receive email on your local network and the Internet, using any email application. Mail service can provide mailing lists for groups, and it includes filters that protect users from junk mail and viruses.

Everyone with a user account gets an email address. A computer with Mac OS X version 10.5 Leopard can have its Mail application automatically set up to use your server's mail service. See "Setting Up Leopard Users' Macs Automatically" on page 79.

Mail service also works with other popular mail applications that use standard email protocols. Users can get mail using the IMAP or POP protocol and send it using the SMTP protocol.

## Specifying a Mail Relay Server

Your mail service can relay outgoing mail through another server, and that relay server will forward the mail to its destination.

- If you use a commercial Internet service provider (ISP), it may stipulate that all outgoing email be relayed through a designated server.
- If your organization provides your Internet service, your server may need to use a relay server to deliver outgoing mail through a firewall. In this case, your organization will designate a particular server for relaying mail through the firewall.

***Important:*** Use a relay server only if your ISP or organization requires one. Relaying mail through another server without permission may make your server appear to be a mail service abuser.

**To relay outgoing mail through another server:**

1. In the Mail pane of Server Preferences, select "Relay outgoing mail through ISP."

   If this option is already selected, click the Edit button next to it.

   A dialog appears for entering the relay server connection details.
2. Enter the relay server's DNS name or IP address supplied by your ISP or organization.
3. If your ISP or organization also requires your server to authenticate before sending mail, select "Enable SMTP relay authentication" and enter the user name and password from your ISP or organization.

## About Junk Mail and Virus Filtering

Mail service can screen incoming mail before delivering it to check for viruses and junk mail. Mac OS X Server uses SpamAssassin (spamassassin.apache.org) to analyze the text of a message, and scores the probability of it being junk mail.

No junk mail filter is 100% accurate in identifying unwanted email. So Mac OS X Server doesn't delete junk mail. Instead it delivers the mail with "***JUNK MAIL***" added to the subject. The recipient can decide if it's really junk mail and deal with it accordingly.

Each message is analyzed and the word frequency statistics are saved. Mail messages that have more of the same words as junk mail receive a higher score of probably being junk mail.

Mac OS X Server uses ClamAV (www.clamav.net) to scan mail messages for viruses. Email infected with a suspected virus is deleted, and a notice is sent to the notification email address designated in the Information pane of Server Preferences. The server automatically updates virus definitions once a day via the Internet.

## Scanning for Incoming Junk Mail and Viruses

You can have mail service scan incoming messages for junk mail and viruses. Messages containing known viruses are deleted. Messages suspected of being junk mail are marked ***JUNK MAIL*** and delivered.

**To have mail service scan for junk mail and viruses:**

1. In the Mail pane of Server Preferences, select "Enable junk mail and virus filtering."
2. Adjust the slider to set how tolerant the filter is of indications that an incoming message is junk mail.

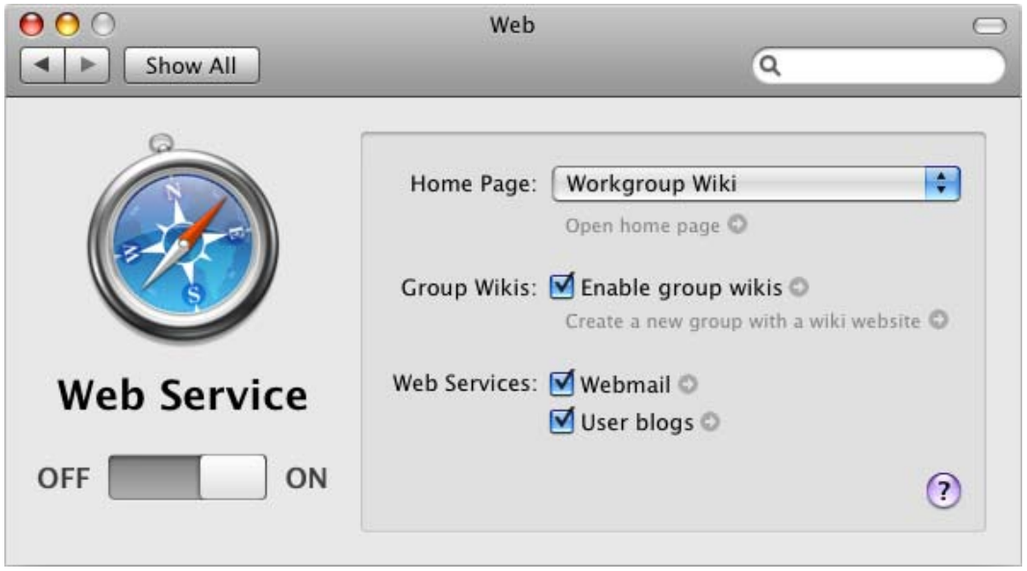
   *Aggressive:* The junk mail filter tolerates few signs of being junk mail.

*Moderate:* The junk mail filter tolerates some signs of being junk mail.

*Cautious:* The junk mail filter marks an incoming message as junk mail only if it contains many signs of being junk mail.

## Managing Web Services

Use the Web pane to turn web services on or off, change your website's homepage location, enable group wiki websites, or enable other web services. For information about the settings and controls in this pane, click the Help button in the lower-right corner of the Server Preferences window.



## About Web Services

Web services can host a conventional website or provide group websites with wikis, blogs, optional calendars, and optional mailing list archives. Other web services provide web access to email.

All members of a group can easily view, search, and edit wiki content right from their web browsers. By using included templates or creating their own, they can add, delete, edit, and format content naturally—without knowing markup codes or special syntax. With a few clicks, or by dragging and dropping, they can attach files and images, publish to podcasts, assign keywords, and link to other wiki pages or other websites. They can also review the wiki's complete history of changes and revert any page to a previous version. They can also view and contribute to shared calendars, blogs, and mailing lists.

Blogs give nontechnical users a way to keep their colleagues up-to-date with projects, the files they're working on, and pictures or podcasts. Users publish their own blogs, with drag-and-drop ease, using a selection of built-in professional templates.

With webmail, users can receive and send mail from a web browser anywhere on the Internet. They can access all their email as if they were using Mac OS X Mail or another mail application on their computers.

## Finding the Server's Website Address

The address of your server's website is:

http://*serverDNSname*

Replace the italicized placeholder with your server's DNS name, which is shown in the Information pane of Server Preferences.

If your server website is a group wiki, visitors must log in using the name and password of a group member.

## Hosting a Conventional Website

Instead of using a group wiki website set up for you by Mac OS X Server, you can have your server host a conventional website consisting of static HTML files. You create the website using web development software of your choice, or have someone do it for you, and copy the website files to your server.

**To host a conventional website:**

1. Make sure your website's main page is named index.html or index.php.
2. Open the server's website folder at /Library/WebServer/Documents/, and optionally delete the placeholder files.
3. Copy your website files to the website folder.
4. In the Web pane of Server Preferences, choose Server Home Page from the Home Page pop-up menu.
5. If web services are not on, click the On/Off switch in the Web pane.

## Setting Up Group Wiki Service

You can use the Web pane of Server Preferences to make all group wiki websites available or unavailable on the network. When group wiki websites are available, each group's members can access the group wiki, blog, optional calendar, and optional mailing list archive. You turn on and set options for each group's wiki individually in the Groups pane.

**To enable wiki service for all groups:**

1. In the Web pane of Server Preferences, select "Enable group wikis" and make sure web service is on.

   If web service isn't on, click the On/Off switch.

2. If you want to visit the wiki page with links to all group wikis, click the link arrow next to "Enable group wikis."

3. If you want to set up a wiki for a new group or an existing group, click "Create a new group with a wiki website."

   Clicking this link takes you to the Groups pane, where you can create a new group or select an existing group and then set up the group's wiki. For information about creating groups and setting up group wikis, see "Creating a New Group" on page 94 and "Setting Up a Group Wiki Website" on page 103.

## Setting Up Webmail Service

You can use Server Preferences to turn webmail service on or off. This service lets all server users access their mail using a web browser over the Internet.

**To turn webmail service on or off:**

- In the Web pane of Server Preferences, select or deselect "Webmail."

  If this option is selected, clicking the link arrow next to it opens the webmail website.

  Users access your server's webmail by appending /webmail to your server's website address. For example:

  http://server.example.com/webmail

## Setting Up User Blogs

You can use Server Preferences to turn the web service for user blogs on or off. This service lets all server users create their own blogs using a web browser.

**To turn user blogs on or off:**

- In the Web pane of Server Preferences, select or deselect "User blogs."

  If this option is selected, clicking the link arrow next to it opens the user blogs website.

  Users access their blogs by appending /users/*shortname* to your server's website address. For example:

  http://server.example.com/users/rpatel

## Managing VPN Service

Use the VPN pane to turn VPN remote access service on or off, inspect or change the VPN secret, set the IP address range for VPN users, or save a VPN configuration file for Mac OS X users. For information about the settings and controls in this pane, click the Help button in the lower-right corner of the Server Preferences window.


## About VPN Service

VPN (virtual private network) service lets users connect to your network from home or other remote locations over the Internet. Users make a secure VPN connection to access workgroup services such as file sharing, mail, iChat, iCal, and web. VPN service uses the L2TP protocol with a shared secret to ensure confidentiality, authentication, and communications integrity.

A secure shared secret is generated automatically when you set up your server. The shared secret isn't used to authenticate client computer users for a VPN connection. Instead it allows the server to trust client computers that have the shared secret, and it allows client computers to trust the server that has the secret.

Both server and client computers must have the shared secret. A computer with Mac OS X version 10.5 Leopard can automatically get the shared secret and be set up to make connections to the server's VPN service. See "Setting Up Leopard Users' Macs Automatically" on page 79.

Other Mac and Windows computers can be configured in different ways to connect to the VPN service. See "Setting Up a Mac User's VPN Connection" on page 87 and "Setting Up a User's VPN Connection Manually" on page 89.

## Changing the VPN Shared Secret

You can use Server Preferences to change the shared secret that the server and a client computer use for authentication when making a VPN connection. Periodically changing the shared secret improves VPN security, but is inconvenient because users must also change the shared secret on computers they use for VPN connections.

**To change the VPN shared secret:**

1. In the VPN pane of Server Preferences, click Edit.
2. Select "Show shared secret" so you can read the secret, enter a new secret, and click OK.

   The shared secret should be at least 8, but preferably 12 or more characters including letters, digits, and symbols, but without spaces. Initially the shared secret is 32 random characters.

You can use the Password Assistant to help you compose a new shared secret. Temporarily switch to the Users pane, click Account, click Reset Password, click the Key button to the right of the New Password field, and then click Cancel and go back to the VPN pane. The Password Assistant remains open, and you can use it to generate a new shared secret that you copy from the Suggestion field and paste into the Shared Secret field.

After you change the secret here, all VPN users must make the same change in their VPN configurations. For information about making this change, see "Setting Up a User's VPN Connection Manually" on page 89.

## Creating a VPN Configuration File

You can use Server Preferences to generate a file that Mac users can open to create a VPN configuration automatically. After creating the VPN configuration, a user can make a VPN connection to the server and its network via the Internet. The configuration file works with Mac OS X v10.3 or later.

**To generate a VPN configuration file:**

1. In the VPN pane of Server Preferences, click Save As, select a location for the VPN configuration file, and click Save.
2. Distribute the saved configuration file to users who need to set up a VPN configuration on their Macs.

To set up a Mac, a user simply opens the VPN configuration file you generated. Opening this file opens either the Network pane of System Preferences or Internet Connect (depending on the Mac OS X version), and then imports a VPN configuration with all information necessary to make a VPN connection except the name and password of a user account on the server. If Internet Connect asks the user where to put the imported configuration, the user should select VPN (L2TP). The user should not select VPN (PPTP) or any other option.

When Network preferences or Internet Connect finishes importing the VPN configuration, the user needs to enter an account name and can also enter a password, and then save them as part of the VPN configuration upon quitting the application. If the user saves both name and password as part of the VPN configuration, anyone using that computer will then be able to log in automatically for a VPN connection to your server.

For security, you can instruct users to enter their account name but leave the password blank, and then quit the application (System Preferences or Internet Connect). If users don't save a password as part of the VPN configuration on their computers, they will be asked to log in each time they make a VPN connection to your server.

For information you can give users instructing them how to use the VPN configuration file, see "Setting Up a Mac User's VPN Connection" on page 87.

## Changing the IP Address Range for VPN

You can use Server Preferences to change the range of addresses you want the server to reserve for assigning to remote computers when they make VPN connections to the server. For example, you might make the range larger to make more IP addresses available for VPN connections.

*Important:* These are addresses on the server's network, and they must not be used by other computers or devices on the network. This range of addresses must not include any static IP addresses in use on the network or overlap the range of IP addresses that the DHCP server assigns.

**To change the IP address range for VPN service:**

1. In the VPN pane of Server Preferences, change the first IP address in the range, the last IP address in the range, or both.

   The range of addresses needs to be large enough for the maximum number of remote computers that will have concurrent VPN connections. VPN service assigns an IP address for the duration of a VPN connection, and reclaims the address assigned to a remote computer that disconnects.

2. If you have an AirPort Base Station or other Internet router (gateway) that provides DHCP service, you may need to adjust its IP address range so that the DHCP and VPN address ranges don't overlap.

   For information about changing the settings of an Internet router, see its documentation.

When a remote computer makes a VPN connection, the server assigns the remote computer an unused IP address from the range of reserved addresses. This IP address doesn't replace the IP address that the remote computer is already using to connect to the Internet. The remote computer keeps this IP address and any other IP addresses it's using, and adds the IP address assigned to it for VPN.

## Providing VPN Service Through an Internet Router

If your server provides VPN service through an AirPort Base Station or other Internet router, and users' computers need to make VPN connections through their own base stations or Internet routers, your server must be on a different IP subnet than the VPN users' computers. In other words, your server's IP address can't begin with the same three numbers as VPN users' IP addresses, such as 10.0.1 or 192.168.1.

You can avoid this conflict by changing the third number of the IP address of all the devices on your server's local network—AirPort Base Station or other Internet router, server, and other computers. Use a number between 2 and 254. For example, if your server and other devices on its network have IP addresses that begin with "10.0.1," change them to begin with "10.0.2" or "10.0.100." If their IP addresses begin with "192.168.1," you might change them to begin with "192.168.5" or "192.168.70." You can also use 172.16.0 through 172.31.255. In all cases, use subnet mask 255.255.255.0.

If your AirPort Base Station, other Internet router, or DHCP server assigns IP addresses to computers on your network, change it to assign IP addresses that begin with the same three numbers as the server's IP address. If possible, make these changes before setting up your server. You make these changes on an AirPort Base Station using AirPort Utility (located in /Applications/Utilities/). For instructions, open AirPort Utility and then use the Help menu. For information about configuring another kind of Internet router or gateway, see its documentation.

For information about changing your server's IP address, see "Changing Your Server's IP Address" on page 134.

After changing the IP address of your AirPort Base Station or other Internet router, change your server and other computers on its network to use the new address as their router address. You make this change in the Network pane of System Preferences on your server and other Macs. For information about changing the IP addresses of other devices, see their documentation.

## Customizing Services Using Advanced Applications

Although a standard or workgroup configuration of Leopard Server is best administered using Server Preferences and the Server Status widget, you can also use Server Admin, Workgroup Manager, and the other advanced applications and tools listed in "Advanced Tools and Applications" on page 29. You can use the advanced applications and tools to customize services by changing advanced options. You can also turn on services that aren't part of a standard or workgroup configuration, such as QuickTime Streaming Server. For information about advanced services, options, and applications, see *Server Administration* and the other advanced administration guides described in "Mac OS X Server Administration Guides" on page 144.

***Important:*** Before using Server Admin, Workgroup Manager, or other advanced tools and applications to make changes to a standard or workgroup configuration, carefully note current settings in case you need to revert to them. For example, you can make a screen shot of each pane and dialog before changing settings in it. (For information about screen shots, switch to the Finder and then use the Help menu.)

# Managing Server Information

# 9

Use Server Preferences to get general information, check service logs, see graphs of server activity, and change firewall settings.

## Managing Server Information

Use the Information pane of Server Preferences to get information about your server, including the hardware and software installed, network names and address, and serial number. You can also change the server's computer name and serial number. For information about the settings and controls in this pane, click the Help button in the lower-right corner of the Server Preferences window.

## Changing the Serial Number or Site License Details

You can use Server Preferences to change the Mac OS X Server software serial number or site license information.

**To change the software serial number or site license:**

1. In the Information pane of Server Preferences, click the Edit button next to the Server License information.
2. Enter a different serial number or edit the site license details as needed, and then click Save.

## Changing the Notification Settings

You can use Server Preferences to change the email address to which the server sends messages about low disk space, software updates, and deleted email that was infected with a virus. You can also turn each type of notifications on or off.

**To change the notification email address:**

1. In the Information pane of Server Preferences, click the Edit button on the Notifications line.
2. Enter the desired email address in the Notifications Email field.

   If you don't want any notifications sent, leave the Notifications Email field blank.
3. Select the types of notifications you want the server to send, and then click Save.

   *Low disk space:* Sends an email when a disk or partition has less than 5 percent free space available.

*Software updates available:* Sends an email when new software updates become available for the server.

*Virus detected in incoming email:* Sends an email when the email virus filter detects a virus.

## Changing Your Server's Name

You can use Server Preferences to change the server's computer name. It identifies the server to client computers that are browsing for network file servers, print queues, or other network resources identified by computer name, rather than by DNS name.

**To change the server's computer name:**

- In the Information pane of Server Preferences, edit the Computer Name field.

  Specify a name that's 63 Roman characters or fewer including spaces, and avoid using =, :, or @. Mac OS X automatically converts the computer name to a form that's valid with SMB file sharing.

  To change the server's local hostname, use the Sharing pane of System Preferences on the server. Other computers on the server's local network (IP subnet) can use the server's local hostname to contact the server. If you change your server's local hostname, users of other computers may have to change their bookmarks or other settings to use the server's new local hostname. For information about using System Preferences, open it and use the Help menu.

The server's DNS name can only be changed by the administrator of your DNS service. You should avoid having the server's DNS name changed, because changing it will require users of its services to reconfigure their computers:

- Users with Mac OS X v10.5 Leopard will have to use Directory Utility to disconnect their computers from the server, and then use Directory Utility to connect to the server again.
- Users who have an earlier Mac OS X version, or who are running Windows, will have to deal with changes to shared calendar subscriptions, iChat addresses, email addresses, the server's website address, group wiki addresses, and the server's VPN address.

## Changing Your Server's IP Address

The server's IP address is one of the network connection settings in the Network pane of System Preferences. For information about changing Network preferences, open System Preferences on the server and use the Help menu.

*Important:* If your DNS service is provided by your ISP or another server on your network, have your server's DNS record changed to use the new IP address.

Changing your server's IP address may disrupt the connections of users' computers that have Mac OS X v10.5 Leopard. If this happens, users need to use Directory Utility to disconnect their computers from the server, and then use Directory Utility to connect to the server again.

## Connecting to a Directory Server

If your organization has a directory server but you didn't connect your server to it during setup, you can connect your server to it now. Then you can import user accounts from it for people in your workgroup. You can also give other user accounts in the directory server access to the services of your workgroup by making them external group members. For information, see "Importing Groups of Users Automatically" on page 63 and "Adding or Removing External Members of a Group" on page 99.

You use the Directory Utility application (located in /Applications/Utilities/) to connect to a directory server. For information about connecting to a directory server, open Directory Utility and then use the Help menu.

Your server is considered a workgroup configuration if it's connected to a directory server.

## Changing Firewall Settings

Use the Firewall pane of Server Preferences to set up a firewall that protects your server from users on other networks or the Internet. The firewall controls incoming connections that originate outside your server's local network (IP subnet). The firewall can allow individual services to accept incoming connections from computers outside your server's local network, or restrict selected services to accept incoming connections only from computers on your server's local network. You can start the firewall and select the services that restrict incoming connections. You can also stop the firewall to allow incoming connections to all services from outside your server's local network.

**To change firewall settings:**

1. In the Firewall pane of Server Preferences, click the On/Off switch to turn the firewall on or off.

   Turn the firewall on if you want to control incoming connections for each listed service separately.

   Turn off the firewall to allow all services to accept incoming connections from outside your server's local network.

2. In the list of services, select a service's checkbox if you want the service to accept incoming connections only from the server's local network.

   Deselect a service's checkbox if you want the service to accept incoming connections from all networks including the Internet.

   Settings in the list of services take effect only if the firewall is on.

## About the Firewall

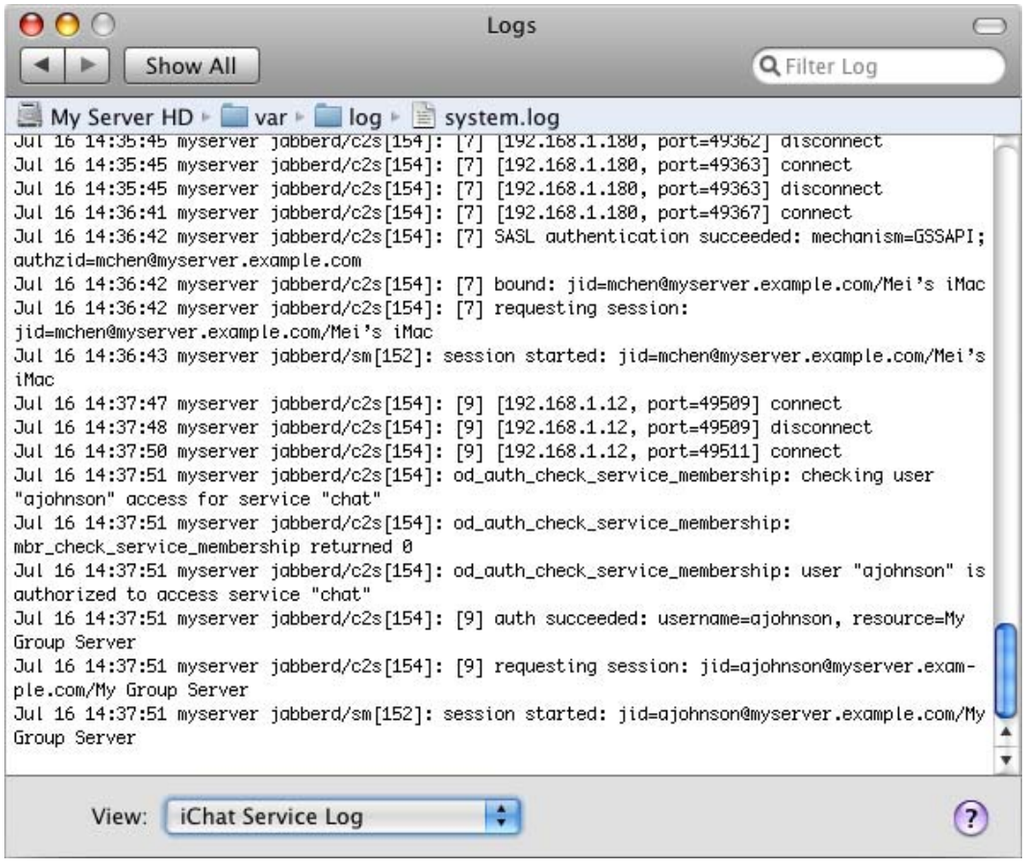
Mac OS X Server includes firewall software you can use to block unwanted network communication with your server. This firewall is called an *application firewall* because it accepts or denies an incoming connection based on the particular application, service, or other software module that is trying to accept the connection. This firewall doesn't control outgoing network traffic. Settings in the Firewall pane of Server Preferences control the same firewall as settings in the Firewall pane of the Security pane in System Preferences.

Mac OS X Server has another firewall that works differently. Called an *IP firewall,* it accepts or denies incoming and outgoing traffic based on attributes of the traffic, such as its destination port or originating IP address. The IP firewall can be used at the same time as the application firewall. For information about the IP firewall, see *Network Services Administration* (described in "Mac OS X Server Administration Guides" on page 144).

## Checking Server Logs

Use the Logs pane of Server Preferences to view the message logs kept by the Mac OS X Server software components as they provide services. These logs include the messages you see in alert dialogs, plus messages you won't see anywhere else about routine actions, warnings, and errors. If you've received an error message in a dialog, a log may show additional detail about the issue.

Log messages are rather technical and not very meaningful to the average user, but they can help support technicians solve problems.



**Here are ways you can use the Logs pane:**

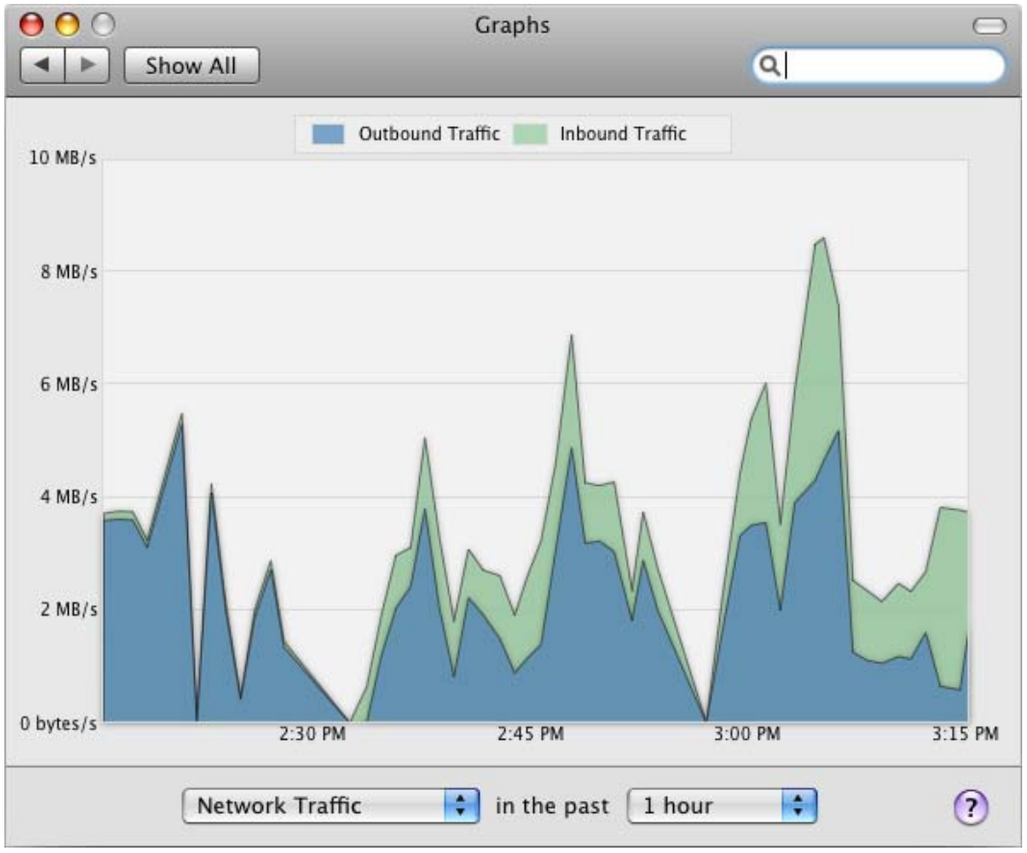
- Choose a log from the View pop-up menu.

  The log's filename and its location on the server are shown above the contents of the log.
- Show only log entries that contain a word or phrase by typing it in the Filter field at the top of the window.
- Show all entries for the selected log by deleting the contents of the Filter field or clicking the X button in the field.

You can also view the Mac OS X Server logs and other logs using Console (located in /Applications/Utilities/) on the server. For example, you can use Console to view the console.log file, which contains important messages from applications that are open on the server. For information about using Console, open it and then use the Help menu.

# Monitoring Server Graphs

Use the Graphs pane of Server Preferences to get a picture of server activity over time. You can find out when the server is usually busy, whether it's operating near capacity, and when it's likely to be least used.



**Here are ways you can use the Graphs pane:**

- Choose a type of activity and a time period from the pop-up menus.

  *Processor Usage:* Monitor the workload of the server's processor or processors (also called the central processing unit, or CPU).

  *Network Traffic:* Track how much incoming and outgoing data the server transfers over the network.

  *Disk Space:* See how much space is used and available on each mounted disk or volume (partition).

  *File Sharing Traffic:* Track how much incoming and outgoing data the file sharing services transfer over the network.

  *Web Traffic:* Track how much incoming and outgoing data the web services transfer over the network.

  You can also monitor server activity using the Server Status widget on the server or on another computer on the network. For information, see "Using the Server Status Widget" on page 49.

  If the server has a display, you can use Activity Monitor (located in /Applications/Utilities/) on the server. Activity Monitor shows the processes and applications that are currently open on the computer. You can also use Activity Monitor to monitor short-term processor workload, disk activity, and network activity. For information about using Activity Monitor, open it and then use the Help menu.

# Learning More

# 10

More information about using Mac OS X Server is available from onscreen help, a suite of advanced guides, and the web.

## Using Onscreen Help

You can get task instructions in the onscreen help system while you're managing Leopard Server. You can view help on a server or an administrator computer. (An administrator computer is a Mac OS X computer with Leopard Server administration software installed on it. For information, see "Preparing an Administrator Computer" on page 36.)

**To get help for a standard or workgroup configuration of Leopard Server:**

- Open Server Preferences and then:
  - Choose Help > Server Preferences to browse and search the help topics.
  - Click a help button in Server Preferences.
  - Use the Help menu to search for a task you want to perform.

The onscreen help for Server Preferences contains all the instructions from this book for managing a standard or workgroup configuration of Leopard Server. Server Preferences Help contains additional topics that focus more narrowly than the book on specialized tasks.

**To get help for an advanced configuration of Leopard Server:**

- Open Server Admin or Workgroup Manager and then:
  - Choose Help > Server Admin Help or Help > Workgroup Manager Help to browse and search the help topics.
  - Use the Help menu to search for a task you want to perform.

The help contains instructions taken from *Server Administration* and other advanced administration guides described in "Mac OS X Server Administration Guides," next.

**To see the most current server help topics:**

- Make sure the server or administrator computer is connected to the Internet while you're getting help.

  Help Viewer automatically retrieves and caches the most current server help topics from the Internet. When not connected to the Internet, Help Viewer displays cached help topics.

## Mac OS X Server Administration Guides

*Getting Started* covers installation and setup for standard and workgroup configurations of Mac OS X Server. For advanced configurations, *Server Administration* covers planning, installation, setup, and general server administration. A suite of additional guides, listed below, covers advanced planning, setup, and management of individual services. You can get these guides in PDF format from the Mac OS X Server documentation website:

www.apple.com/server/documentation

| This guide... | tells you how to: |
| --- | --- |
| *Getting Started* and *Installation & Setup Worksheet* | Install Mac OS X Server and set up a standard or workgroup configuration. |
| *Command-Line Administration* | Install, set up, and manage Mac OS X Server using UNIX command-line tools and configuration files. |
| *File Services Administration* | Share selected server volumes or folders among server clients using the AFP, NFS, FTP, and SMB protocols. |
| *iCal Service Administration* | Set up and manage iCal shared calendar service. |
| *iChat Service Administration* | Set up and manage iChat instant messaging service. |
| *Mac OS X Security Configuration* | Make Mac OS X computers (clients) more secure, as required by enterprise and government customers. |
| *Mac OS X Server Security Configuration* | Make Mac OS X Server and the computer it's installed on more secure, as required by enterprise and government customers. |
| *Mail Service Administration* | Set up and manage IMAP, POP, and SMTP mail services on the server. |
| *Network Services Administration* | Set up, configure, and administer DHCP, DNS, VPN, NTP, IP firewall, NAT, and RADIUS services on the server. |
| *Open Directory Administration* | Set up and manage directory and authentication services, and configure clients to access directory services. |

| This guide... | tells you how to: |
| --- | --- |
| *Podcast Producer Administration* | Set up and manage Podcast Producer service to record, process, and distribute podcasts. |
| *Print Service Administration* | Host shared printers and manage their associated queues and print jobs. |
| *QuickTime Streaming and Broadcasting Administration* | Capture and encode QuickTime content. Set up and manage QuickTime streaming service to deliver media streams live or on demand. |
| *Server Administration* | Perform advanced installation and setup of server software, and manage options that apply to multiple services or to the server as a whole. |
| *System Imaging and Software Update Administration* | Use NetBoot, NetInstall, and Software Update to automate the management of operating system and other software used by client computers. |
| *Upgrading and Migrating* | Use data and service settings from an earlier version of Mac OS X Server or Windows NT. |
| *User Management* | Create and manage user accounts, groups, and computers. Set up managed preferences for Mac OS X clients. |
| *Web Technologies Administration* | Set up and manage web technologies, including web, blog, webmail, wiki, MySQL, PHP, Ruby on Rails, and WebDAV. |
| *Xgrid Administration and High Performance Computing* | Set up and manage computational clusters of Xserve systems and Mac computers. |
| *Mac OS X Server Glossary* | Learn about terms used for server and storage products. |

## Viewing PDF Guides Onscreen

While reading the PDF version of a guide onscreen:

- Show bookmarks to see the guide's outline, and click a bookmark to jump to the corresponding section.
- Search for a word or phrase to see a list of places where it appears in the document. Click a listed place to see the page where it occurs.
- Click a cross-reference to jump to the referenced section. Click a web link to visit the website in your browser.

## Printing PDF Guides

If you want to print a guide, you can take these steps to save paper and ink, and improve readability:

- Save ink or toner by not printing the cover page.
- Save color ink on a color printer by looking in the panes of the Print dialog for an option to print in grays or black and white.
- Reduce the bulk of the printed document and save paper by printing more than one page per sheet of paper. In the Print dialog, choose Layout from the untitled pop-up menu. If your printer supports two-sided (duplex) printing, select one of the Two-Sided options. Otherwise, choose 2 from the Pages per Sheet pop-up menu, and change Scale to 115% (155% for *Getting Started*).
- If you're printing *Getting Started* from PDF, you may want to enlarge the CD-size pages even if you don't print two pages per sheet. Try changing Scale to 155%.

If you're using Mac OS X v10.4 or earlier, the Scale setting is in the Page Setup dialog.

## Getting Documentation Updates

Periodically, Apple posts revised help pages and new editions of guides. Some revised help pages update the latest editions of the guides.

- To view new onscreen help topics for a server application, make sure your server or administrator computer is connected to the Internet and click "Latest help topics" or "Staying current" in the main help page for the application.
- To download the latest guides in PDF format, go to the Mac OS X Server documentation website:

  www.apple.com/server/documentation

## Getting Additional Information

| For more information, consult these resources |
| --- |
| **Read Me documents (on the *Mac OS X Server Install Disc* and the *Administration Tools* disc)**<br>Important updates and special information |
| **Mac OS X Server website (www.apple.com/server/macosx)**<br>Extensive product and technology information |
| **Mac OS X Server Support website (www.apple.com/support/macosxserver)**<br>Access to hundreds of articles from Apple's support organization |
| **Apple Discussions website (discussions.apple.com)**<br>A way to share questions, knowledge, and advice with other administrators |
| **Apple Mailing Lists website (www.lists.apple.com)**<br>Subscribe to mailing lists so you can communicate with other administrators using email |

# Preparing Disks for Installing Mac OS X Server

A

Use the Installer, Server Assistant, or Disk Utility if you need to erase a disk, partition it into multiple volumes, or set up a RAID set.

| Use this | To do this | When |
|---|---|---|
| **Installer** | Erase the target disk using a common format | During local install |
| **Server Assistant** | Erase the target disk using the most common format, Mac OS X Extended (Journaled) | During remote install |
| **Disk Utility** | Erase the target disk using less common formats, partition the whole disk into multiple volumes, or set up a RAID set | During local install<br>Before remote install |

For information about using Installer, Server Assistant, and Disk Utility during installation, see Chapter 2, "Installing Mac OS X Server." For information about controlling Disk Utility remotely from another computer with Apple Remote Desktop (which you can purchase separately) before installing remotely, see *Server Administration* (described in "Mac OS X Server Administration Guides" on page 144).

***WARNING:*** Before partitioning a disk, creating a RAID set, or erasing a disk or partition on a server, preserve any user data you want to save by copying it to another disk.

## Erasing with the Installer

You can erase the target disk while using the Mac OS X Server Installer. When you select the target disk in the Installer, you can also select an option to have the target disk erased during installation. You have a choice of two disk formats:

- *Mac OS Extended (Journaled)* is recommended and is the most common format for a Mac OS X Server startup volume.
- *Mac OS Extended (Case-sensitive, Journaled)* is worth considering if you are planning to have your server host a conventional website with static web content instead of group wiki websites. A case-sensitive volume can host static web content with a more direct mapping between files and URLs.

*Important:* Third-party software may not function properly when installed on a case-sensitive volume due to an unforeseen capitalization mismatch. For example, an application may have a folder named PlugIns, but some parts of the application may refer to it as Plugins. This would work on a volume with the Mac OS Extended (Journaled) format, but wouldn't work on a volume with the Mac OS Extended (Case-sensitive, Journaled) format.

## Erasing with Server Assistant

If you're using Server Assistant to install Mac OS X Server remotely, and the target disk already has Mac OS X Server or Mac OS X installed, Server Assistant can erase the disk using the Mac OS Extended (Journaled) format only.

## Erasing with Disk Utility

For additional format choices, use the Installer's Utilities menu to open the Disk Utility application, and then use Disk Utility to erase the target disk. You can choose the formats described on the previous page or choose the non-journaled variants of them: Mac OS Extended and Mac OS Extended (Case-sensitive). Do not use the ZFS format for a Mac OS X Server startup disk.

Earlier versions of Mac OS X and Mac OS X Server can also erase disks using the UNIX File System (UFS) format. You should not use UFS format for a Mac OS X Server startup disk.

## Partitioning a Hard Disk

Partitioning the hard disk creates a volume for server system software and one or more additional volumes for data and other software. The minimum recommended size for an installation partition is 20 GB. A larger volume is recommended for a standard or workgroup configuration, because these configurations keep shared folders and group websites on the startup volume together with the server software. Use Disk Utility to partition a hard disk.

## Creating a RAID Set

If you're installing Leopard Server on a computer with multiple internal hard disk drives, you can create a RAID (Redundant Array of Independent Disks) set to optimize storage capacity, improve performance, and increase reliability in case of a disk failure. For example, a mirrored RAID set increases reliability by writing your data to two or more disks at once. If one disk fails, your server automatically starts using one of the other disks in the RAID set.

You use Disk Utility to set up a RAID set. You can set up RAID mirroring after installing Mac OS X Server if you install on a disk that isn't partitioned. To prevent data loss, you should set up RAID mirroring as soon as possible. For information about setting up a RAID set, open Disk Utility and then use the Help menu.

# Configuring an Internet Router

# B

## Configure an AirPort Base Station or an Internet router to make your server's services available on the Internet.

If you have an Internet router or gateway device that shares an Internet connection among computers on your local network, it isolates your local network from the Internet. Computers on the Internet can't access services provided by your server unless your router is configured to forward requests for each service to your server. This process is called port forwarding or port mapping, because each service communicates through an abstract, numbered communication port. These ports are not physical like the Ethernet port on your computer.

## Configuring Port Mapping on an AirPort Extreme Base Station

A standard or workgroup configuration of Mac OS X Server version 10.5 Leopard can configure port mapping automatically on an AirPort Extreme Base Station (802.11n). The server configures the AirPort Extreme to make the iChat, mail, web, and VPN services available on the Internet. The server configures the AirPort Extreme separately for each service when the service starts and stops.

The server can configure port mapping automatically on an AirPort Base Station that has the default password (*public*). If the base station has a different password, you can enter it while setting up the server locally, and the server will be able to configure port mapping on the base station. If you set up your server remotely, it will be able to configure port mapping automatically as long as your base station uses the default password. However, the default password is fairly well known, and using it will compromise the security of your wireless network.

Automatic configuration of an AirPort Base Station requires that the setting IPv6 Mode be set to Tunnel in the AirPort Utility application (located in /Applications/Utilities/). The AirPort Base Station must be set up to share an Internet connection with computers connected to it by Ethernet.

Only standard and workgroup configurations of Leopard Server configure an AirPort Base Station automatically. An advanced configuration of Leopard Server leaves port mapping to the administrator.

***Note:*** Users who have accounts on your server should make a VPN connection to your server to get secure remote access to all services over the Internet. Setting up port forwarding, whether automatically on an AirPort Extreme or manually as described next, makes only some of your server's services available on the Internet.

## Manually Configuring Port Mapping on an Internet Router

You can manually configure port mapping on most Internet routers by using their configuration software. Usually the configuration software consists of several webpages. Using Safari, you go to the webpage with settings for port mapping or port forwarding. In some cases, you can select standard services such as web or VPN and specify that each be mapped to your server's IP address. In other cases, you must enter port numbers for services and enter your server's IP address for each one.

The following table lists services and the corresponding ports for which you might want to set up port mapping or forwarding. Some Internet routers may ask you to specify TCP or UDP for each port, while other routers don't. For specific information about how to configure port forwarding on your Internet router, see its documentation.

| Service | Port | TCP or UDP |
|---|---|---|
| **iChat service** | | |
| iChat server-to-server | 5269 | TCP |
| iChat file transfer proxy | 7777 | TCP |
| **Mail service** | | |
| SMTP | 25 | TCP |
| **Web service** | | |
| HTTP | 80 | TCP |
| **VPN service** | | |
| ISAKMP/IKE | 500 | UDP |
| L2TP | 170 | UDP |
| PPTP | 1723 | TCP |
| IKE NAT Traversal | 4500 | UDP |

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