Mac OS X Server

Version 10.5 Leopard

Product Overview
October 2007

Contents

Servers Made Easy

Mac OS X Server version 10.5
Leopard Server is the sixth release of Apple's award-winning server operating system.

Improve communication inside and outside your organization. Facilitate collaboration on group projects. Provide secure access to confidential information. Centralize storage of backups and shared files. For the first time ever, the benefits of a server are accessible to small businesses, classrooms, and departmental workgroups—no IT department and no technical support staff is required.

Introducing Mac OS X Server version 10.5 Leopard. Combining Apple's legendary ease of use with a rock-solid UNIX® operating system, Leopard Server enables even non-technical individuals to set up and manage a server. There's no need to worry about protocols, or network settings. In fact, configuring Leopard Server is about as easy as configuring a desktop computer. In just a few clicks, you can create users and groups on the server and set up shared services.

But Leopard Server goes one step further. It unlocks new capabilities in Mac OS X v10.5 Leopard, putting the power of a server into the hands of your organization's users. Before you know it, they'll be exchanging files, scheduling events, reserving conference rooms, contributing and commenting in wikis, publishing blogs, participating in secure chat rooms, and accessing documents while away from the office. And whether they're working onsite or remotely, they can do it all without jeopardizing the confidentiality of the information they share.

Leopard Server. Bringing people and information together in powerful new ways.

New in Version 10.5

Xserve and Mac Pro
Leopard Server has been optimized for the latest multicore Intel processors in Mac Pro and Xserve systems.

With the introduction of Mac OS X Server v10.5 Leopard, Apple offers intuitive new features for setting up and managing a server, as well as innovative solutions that help workgroups collaborate and communicate in powerful ways.

- **Simplified setup.** The redesigned Server Assistant steps you through configuration of key server applications, networking settings, and user accounts. Once setup is complete, the new Server Preferences application allows you to manage key services in just a few clicks. And to help you keep an eye on things, the Server Status Dashboard widget provides instantaneous, at-a-glance information on the status of essential services, as well as on disk space and CPU use.
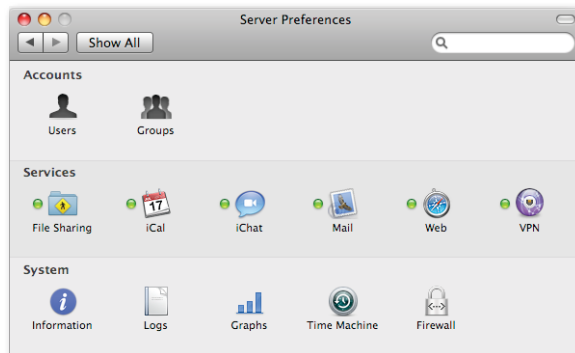
- **Podcast Producer.** This complete, end-to-end solution for producing professional-quality podcasts is ideal for product training, sales presentations, university lectures, or employee updates. With the Podcast Capture application in Mac OS X v10.5 Leopard, users can capture audio and video, record onscreen actions, or submit existing QuickTime content to the server. Once the content is uploaded, Podcast Producer in Leopard Server automatically publishes it in formats optimized for playback on almost any device, from HD video to iPod, Apple TV, or any multimedia-enabled cell phone.

- **Wiki Server.** With Leopard Server, it's easy for anyone to create collaborative web pages, called wikis, complete with group calendar, blog, and mailing list archive. Wiki Server includes 20 Apple-designed themes for wiki-powered websites, where group members can create blog entries, tag and cross-reference material, upload files and images, add comments, and perform keyword searches—all with just a few clicks. And there's no need to worry about mistakes, because the wiki maintains the complete history, so you can always revert to a previous version of any page.

Directory application

The new Directory application in Mac OS X Leopard integrates with Leopard Server, so everyone in your organization can find people, groups, locations, and resources—complete with maps and user pictures. Directory allows users to manage their own personal contact information and to share it with colleagues.

- **iCal Server.** Leopard Server includes a complete calendaring platform that makes it easy for individuals and groups to share calendars, coordinate events, schedule meetings, reserve resources, and use their time more effectively. The first commercial calendar server to support the open CalDAV standard, iCal Server enables integration with popular CalDAV-based calendar programs without requiring client access licenses—so businesses and schools can add users freely as they expand, at no additional cost.

- **Spotlight Server.** The fastest way to search and find content on servers, Spotlight Server is designed for workgroups with shared documents, projects, and file archives. It works with Mac OS X Leopard clients to deliver lightning-fast searches of content stored on shared volumes across the entire network. And with the Quick Look feature in Leopard, you can use Cover Flow to scan hundreds of files in just seconds—without ever needing to open them.

- **Infrastructure enhancements.** Leopard Server is fully UNIX-compliant, providing compatibility and portability with existing UNIX 03 products. New kernel process and scheduling enhancements provide optimal performance on the latest generation of Intel multicore processors. In addition, many services in Leopard Server—including Apache 2, MySQL 5, Postfix, Podcast Producer, and QuickTime Streaming Server—are 64-bit, able to take maximum advantage of the processing power and addressable memory of 64-bit system hardware. And since Leopard Server is also 32-bit compatible, 32-bit and 64-bit applications can run side by side, both at native performance.

Mac OS X Server Fundamentals

Full UNIX conformance
Mac OS X Server is now an Open Brand UNIX 03 Registered Product. This means it conforms to the SUSv3 and POSIX 1003.1 specifications for the C API, Shell Utilities, and Threads. Since version 10.5 can compile and run all existing UNIX 03–compliant code, it can be deployed in environments that demand full conformance.

The sixth major release of Apple's award-winning server operating system, Mac OS X Server v10.5 Leopard is built on a fully compliant UNIX foundation. This rock-solid core provides the stability, performance, and security that organizations require—and full UNIX conformance ensures compatibility with existing server and application software.

High-Performance Networking

Incorporating the latest industry-standard networking and security protocols, Mac OS X Server uses the time-tested BSD sockets and TCP/IP stack to provide compatibility and integration with IP-based networks. A fully multithreaded IP stack and advanced process- and thread-scheduling algorithms enable Mac OS X Server to efficiently service requests—even when hundreds of users are simultaneously connected to the server. From the lowest levels of the kernel to everyday applications, performance gains are especially noticeable on the latest Intel multicore systems.

Advanced Server Features

While Mac OS X Server is built on the same robust UNIX architecture as Mac OS X, it adds industrial-strength features required for business-critical server deployments. Designed for "headless" operation, Mac OS X Server enables administrators to install and configure services without needing to connect a display to the server. Powerful remote administration tools permit secure service management from anywhere on the network or over the Internet, and support for SSH provides secure access from the UNIX command line.

To keep critical services up and running, Mac OS X Server has built-in tools for monitoring systems, preventing accidental shutdown, and recovering services quickly in case of network or power failure.

Security and Access Controls

Mac OS X Server is designed to be secure right out of the box—no security expertise is required. Included are features that keep your systems secure, such as advanced security architectures, a built-in firewall, and strong encryption and authentication technologies.

Intuitive Setup and Management

With Mac OS X Server v10.5 Leopard, Apple applies its legendary ease of use to the configuration, management, and monitoring of a server. Intelligent interfaces simplify administration so that even nontechnical users can deploy powerful network services—no dedicated IT department required. In just a short time, you'll be up and running and the users in your organization can start enjoying the benefits of shared files, group calendars, wiki-powered websites, secure remote access, and more.

**Server Admin for advanced IT services**
Advanced IT administrators can use Server Admin to set up, manage, and monitor advanced services. Completely redesigned in Leopard Server, Server Admin includes new file-sharing and permission controls, tiered administration, and options for organizing servers into smart groups.

Server Assistant

It's now easier than ever to install and configure a server. The redesigned Server Assistant walks you through the initial setup, helping you quickly configure server applications, define networking information, set up user accounts, and choose the services you want to deliver to your organization. Server Assistant even runs a built-in network health check to verify network settings and Internet connectivity.

Setting Up Mac OS X Server
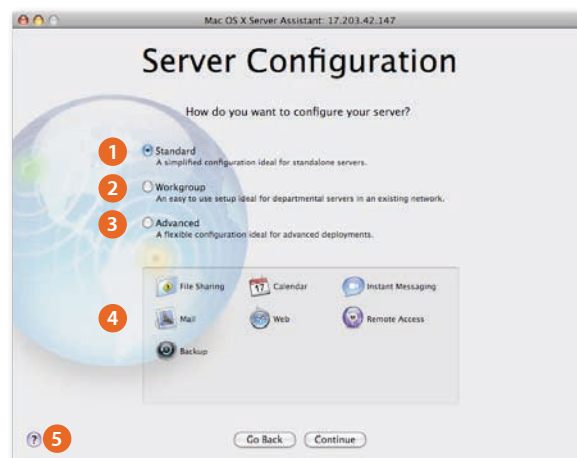
1 Choose the Standard configuration to set up an independent server for a small organization.

2 Choose the Workgroup configuration if your workgroup needs to integrate with an existing directory server.

3 The Advanced configuration gives experienced system administrators complete control of advanced network and Internet services.

4 Depending on which configuration you've chosen, this window shows the services you are able to manage.

5 Click ? to get help at any time as you proceed through setup.

To accommodate a wide variety of needs in small business, education, and enterprises, Mac OS X Server provides a selection of typical configurations. Both Standard and Workgroup configurations feature automated setup and simplified server administration using Server Preferences. For experienced system administrators, the Advanced configuration allows you to use Server Admin, Workgroup Manager, and command-line tools to configure advanced services such as DNS, DHCP, NAT, Open Directory, Podcast Producer, and Xgrid.

Server Preferences

This intuitive new administration application makes it easy for server novices to customize settings and monitor server status—so small businesses and workgroups without an IT department can take full advantage of the benefits of a server. With Server Preferences, you can add users and groups to the server, control access privileges, and use the simple Off/On button to stop and start individual services. A straightforward interface simplifies management of key services such as file sharing, calendaring, instant messaging, mail, websites with wikis and blogs, virtual private networking for remote access, and Time Machine backups.

Server Preferences also makes it easy to maintain your server. Mac OS X Server will automatically notify you via email when software updates become available, when available disk space is getting low, or when email viruses have been detected and quarantined.

Managing User Services
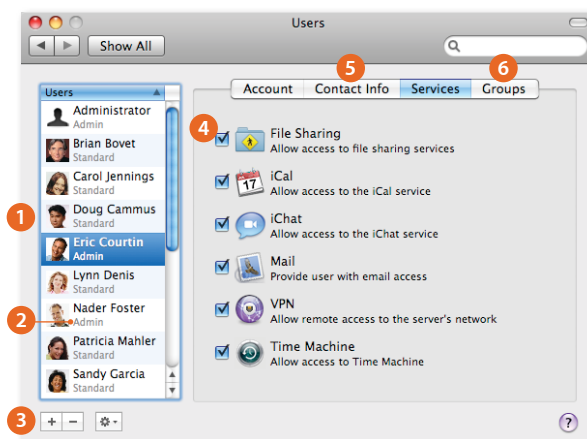
1 Select a user in order to manage that individual's account, contact information, services, and group membership.

2 You can see which users have administrative privileges and which are Standard members of your workgroup.

3 Click + to add a user to the server. Or select a user and click – to remove that individual.

4 Check the services you wish to enable for each user.

5 Add contact information, such as home address or alternate email addresses. Leopard users can edit their own contact information.

6 Assign the user to a group on the server. Individual Leopard users can also create groups and invite members to join using the Directory application.

Server Status Widget

To help you keep an eye on your server, the new Server Status Dashboard widget provides instantaneous, at-a-glance information. A single widget gives you a wealth of information. Over any time period you choose, you can view network traffic, available disk space, processor load, and more.

Server Status Widget
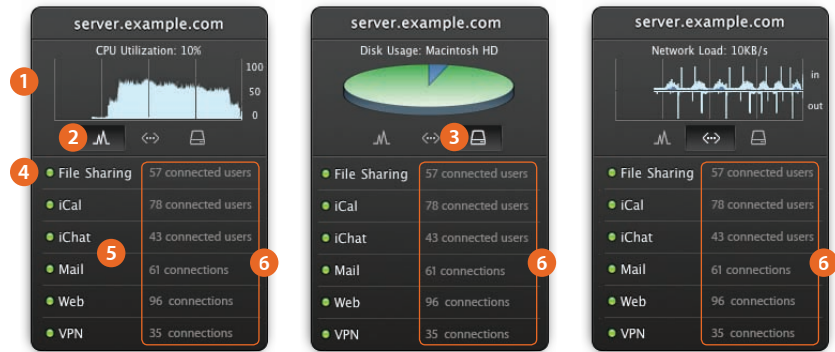
1. The Server Status widget displays status information in a convenient window.

2. Click the graph to change the time period you wish to monitor.

3. Click an icon below the graph to switch your view from processor load to disk usage to network traffic.

4. A green status indicator means the service is running.

5. Click the service name to open its pane in Server Preferences, where you can make changes to the service itself.

6. For each service, you can see the current number of connections.

Adding Clients

Adding clients to the network requires no IT expertise whatsoever. Whenever a new Mac starts up for the first time, it looks for Mac OS X Server and gives the user the opportunity to take advantage of any services that have been set up for that individual.
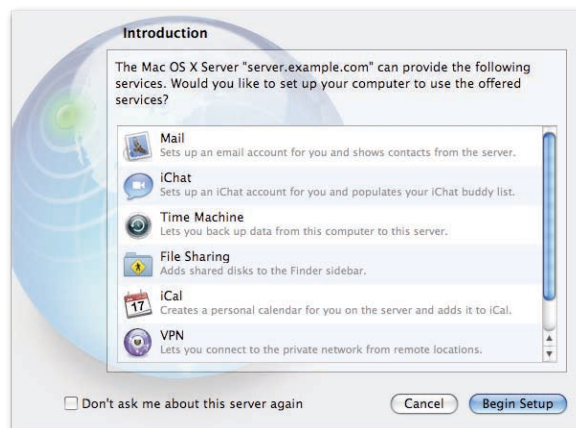
Adding an existing Mac to the network is just as easy. Simply launch Directory Utility to configure it, and all default services—such as Mail, iChat, iCal, VPN, and Address Book— are set up and ready for use. Mac OS X Server keeps these settings updated, so you'll never need to manually configure or reconfigure user settings or applications again.

When you create new user accounts in Server Assistant or Server Preferences, Mac OS X Server automatically sends a message welcoming the users to Mac OS X Server and listing the services available to them. They'll see this message the first time they check their email.
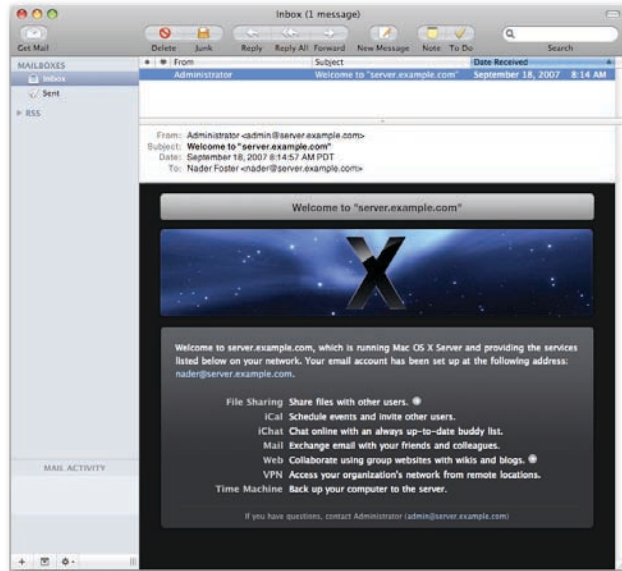
Built-in Services

Whether you're supporting a creative team, a distributed sales force, a class of multi-media students, or just about any small business or workgroup, you know your users need to share information to work effectively. With Mac OS X Server, you can help them communicate and collaborate using powerful and intuitive new solutions.

File Sharing

Mac OS X Server is the easiest and most cost-effective way for small businesses, classrooms, and departments to share files, whether locally or over the Internet. As soon as a group is created on your network, the group gets its own shared folder on the server, as well as a guest folder and drop box. Whether they're on Mac or PC systems, all group members can read and write to files in the shared folder, just as if they were using their own hard drive. Built-in file-level locking keeps any Mac or PC from overwriting changes when a file is opened by more than one user at a time; only the user who unlocked the file can make changes.

Group collaboration is smoother and productivity is higher when users store work in centralized folders rather than on individual computers. By centralizing file storage, all users have access to the same up-to-the-minute file. And since a single version resides on the server, there's no worry about multiple versions of the same document. Users also don't need to be concerned about losing important data in the event of system failure or if their laptop is lost or stolen. The file is always safe on the server.

Managing File Services
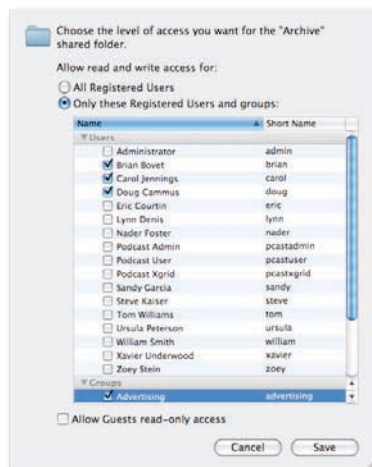
Edit file permissions
Use Server Preferences to set and change file access permissions. With just a click in a checkbox, you can authorize or de-authorize any user or group from accessing information in shared folders.

1. Turn file sharing on or off with an easy "slide" of the button.
2. View a list of all shared folders and their location on the server.
3. See who has permission—and what kind of permission—to access the folder.
4. Click to change which users or groups may access each folder.
5. Help is always just one click away.

Access controls in Spotlight Server

To safeguard your organization's data, Spotlight Server works with the file access controls in Mac OS X Server, so users see only those search results that they have permission to see. If they don't have access to a file, it will never appear in their results. This makes it easy for everyone in a group to store files in a single shared location, while protecting confidential information from unauthorized viewing.

Finding files with Spotlight Server

Spotlight Server provides an instant way to find content on servers within your network. Designed for workgroups with shared documents, projects, and files, this new feature delivers lightning-fast search results for content stored on the server. And now with richer Spotlight vocabulary in Leopard, your searches can be even more exact. New options include Boolean logic, quoted phrase searching, category labels, and range support. Use search terms and search logic to create project-specific Smart Folders, so workgroups can always find their shared work, no matter where the files were actually saved.

Digital asset management no longer needs to be a complex and expensive proposition. By combining the power of Spotlight Server with the rich Quick Look feature in Leopard, your users have a straightforward way to find digital assets on shared volumes. Content indexing occurs on the server—automatically and transparently—so searches are always up-to-the-moment accurate.

Searching with Spotlight Server

1. Leopard users in your organization can use Spotlight to search all the volumes on the server.
2. Type in search words and Spotlight Server searches the content stored on the server.
3. Save search terms, including search logic, for the next time you use Spotlight.
4. With Cover Flow, users can scan hundreds of files in just seconds.

iCal Server

With the introduction of iCal Server, Mac OS X Server leverages the power of iCal in Leopard, making it easy for workgroups and small businesses to share calendars, schedule meetings, and coordinate events. When anyone in your organization sets up a group, iCal Server automatically enables a group calendar. Members of the group can view the calendar on its own page of the group's wiki—or they can subscribe to it in iCal, where group events are displayed in a distinct color.

Need to reserve a projector, a particular conference room, or even a car? You can also use iCal Server to manage the scheduling of these and other resources, whether part of a group event or not.

CalDAV

Standards-based calendaring
Built on open standards, iCal Server integrates with existing calendar solutions. The first commercial CalDAV server, iCal Server demonstrates Apple's commitment to open standards–based calendaring and scheduling protocols, giving organizations a choice of calendar clients.

Managing iCal Server
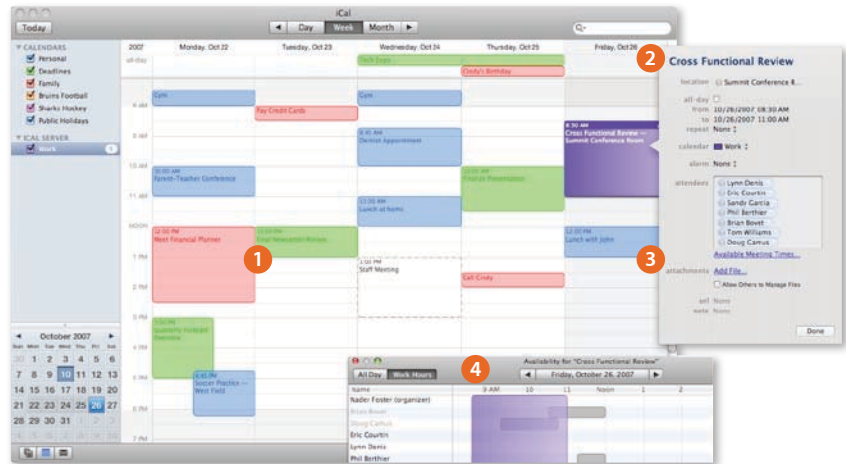
1. When users subscribe to a group calendar, its events show up on their individual calendar in a separate color.

2. Users can set up meetings, add attendees, find locations, and even attach files to an invitation.

3. Meeting proposers can attach files—such as agendas, to-do lists, presentations, or QuickTime movies—to the invitation.

4. iCal Server can search the calendars of everyone in the group to find free time.

Shared information with the Directory application

Mac OS X Server unlocks the capabilities of the new Directory application in Leopard by allowing shared access to organizational information. Users can change their own account information, share it with others, and create and manage groups, locations, and resources—there's no need for administrator support. And since Directory works in conjunction with iCal Server, users can easily schedule conference rooms, reserve shared resources, and set up meetings with individuals or groups.

Using the Directory Application
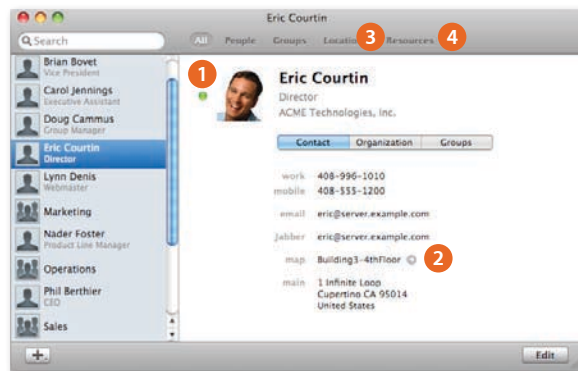
1. Directory displays the individual's contact information and photograph.

2. Click ⊙ to display a map of the individual's office location.

3. Users can locate buildings, meeting rooms, resources, and employees.

4. Users can create shared resources—such as projectors, printers, or cars—and others can use iCal to book them.
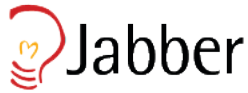
Industry-standard IM
iChat Server is based on Jabber, the industry-standard IM protocol also known as XMPP. Jabber enables support for Mac computers using iChat, as well as for other Jabber clients running on Windows and Linux systems, PDAs, and even cell phones.

iChat Server

iChat Server brings the collaborative power of instant messaging to your organization. Now workgroups can transfer files securely, share a persistent chat room, conduct an audio conference, or—with the new iChat Theater feature in Leopard—even broadcast a presentation, movie, or photo slideshow to other iChat users.

Group collaboration made easy

iChat in Leopard works with the directory to automatically populate users' buddy lists with members of the groups to which they belong, so it's easy for them to start communicating. And thanks to new store-and-forward functionality, iChat Server allows users to send messages to buddies who are offline, combining the advantages of IM with the advantages of email.

With iChat in Leopard, users can request iChat Server to create and host a persistent chat room. Perfect for virtual team scenarios, project-specific discussions, and real-time blow-by-blow updates, the chat room allows individuals to join at any time, leave when they need to—even log out and shut down—and still come back to review all communications since the chat room opened.

Strong authentication and encryption

By integrating with your organization's directory service for user account information and authentication, iChat Server ensures that whoever is logging in under an iChat name is really that person. All text messages and file transfers are encrypted, so there's no risk of third-party access to the information that circulates within your iChat Server. And with support for IM Federation, iChat Server allows your users to engage in encrypted server-to-server chats with buddies on other Jabber or XMPP systems such as Google Talk.
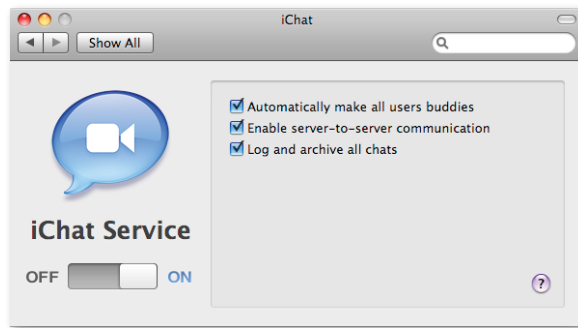
For organizations with strict compliance and regulatory requirements, iChat Server can be configured in a single click to keep all IM login, authentication, and chat transcripts.
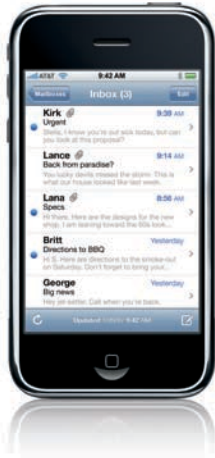
iPhone compatibility
The Mail application in iPhone works with standards-based email systems that support IMAP, POP, and SMTP. And using the IMAP over SSL protocol, Mac OS X Server even provides iPhone users with secure over-the-air access to email.

Mail Services

With the latest releases of Mac OS X and Mac OS X Server, Apple offers a state-of-the-art mail client—with features such as stationery templates, notes, and to-do lists—and a robust mail server that's also easy to use. When you create users on your server, Mac OS X Server automatically assigns them an email address. The ideal solution for small businesses or companies without an existing mail server, Mac OS X Server allows you to bring email in-house using your own domain name, rather than relying on an ISP to host your email.

Mac OS X Server mail services are great for organizations with an existing mail server too. Not only does Mac OS X Server provide locally hosted email accounts and group mailing lists, it also ensures that all email traffic is securely encrypted and filtered for junk mail and viruses. And since Mac OS X Server integrates seamlessly into your network, your group's outbound email can be forwarded—or relayed—through your company's existing mail servers. Based on industry standards, Mac OS X Server is compatible with standards-based mail clients on Mac and Windows systems, as well as with Apple's iPhone. And with support for thousands of users per server and no per-user licensing fees, organizations of any size can enjoy significant cost savings.

Protecting your organization's email
Mac OS X Server encrypts mail messages and attachments using SSL 3.0 and TLS 1.0 with 128-bit encryption, matching security standards used for commerce transactions on Amazon.com and for financial transactions on eTrade.com. In addition, Mac OS X Server integrates technologies that defend your server and your users against unwanted mail and destructive viruses. It analyzes the content of each mail message and trains itself to recognize—and filter out—marginal mail. Mac OS X Server also scans both messages and attachments for viruses; suspect email can be quarantined, deleted, or bounced back automatically. As the administrator, you can choose how aggressively you want Mac OS X Server to deploy junk mail and virus filtering functions.
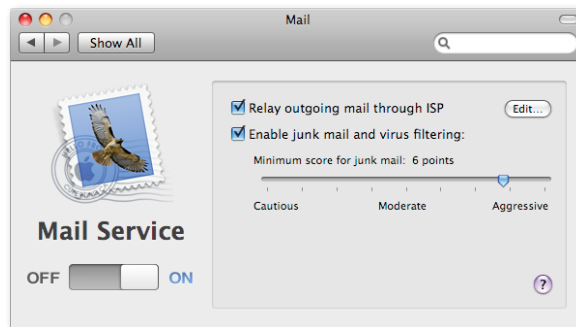
Easy group mailing lists
With the latest releases of Mac OS X and Mac OS X Server, anyone in your organization can create a mailing list simply by creating a group in the Directory application—since every group gets its own mailing list. Through the directory, group addresses are visible to everyone else in the organization. To make it easier to manage and search group mail, you can use the group's wiki to maintain an archive of all messages sent to the group mailing list.

Web Hosting

Mac OS X Server allows small businesses, classrooms, and workgroups to host their own website or home page, which can be accessed over the Internet or on your local network. Thanks to Wiki Server, groups have a powerful new collaboration tool. Any group, small or large, can have its own wiki website, a single place where everyone on the team can share information, distribute documents, and stay up to date. Wikis can be especially beneficial for new additions to an existing team, providing a complete easy-to-search record of shared communications. And because the wiki is accessible from any browser on any platform, group members can be in touch, no matter where they are.

Using the Group Wiki

1. Choose from 20 Apple-designed templates with different fonts and layouts. Customize your layout with a unique banner and sidebar that displays page titles.

2. A project-specific blog is the perfect way for teams to brainstorm, share news, or comment on work.

3. Team members can post meetings, milestones, deadlines, and other threshold events on the group calendar.

4. Whenever a team member sends a message to the group address, the email shows up in the mailing list archive.

5. Use Spotlight to search the content of documents, blog entries and comments, calendar events, and email messages among group members.

6. By adding tags to wiki pages, you can use keywords to search the wiki.

7. You and other group members can add, delete, and edit content. As the administrator, you can specify which members may make changes to the wiki and which may only view it.

8. Changes are highlighted, so it's easy to track revisions. In fact, the wiki maintains a complete revision history, so you can always revert to a previous version of the page.

9. Any page, tag, or search result can be subscribed to as an RSS feed, so users are automatically notified whenever pages are updated, modified, or deleted.

RSS

Instant notification
Thanks to the power of RSS, you and your users can easily track updates or subscribe to automatic notifications. There's even an option for subscribing to a podcast, so anyone who missed that important conference call can catch up on the news.

Creating a wiki is quick and easy. In fact, whenever a group is created—whether by you as the administrator using Server Preferences or by someone in your organization using the Directory application—Mac OS X Server automatically creates a wiki for the group, complete with blog, calendar, and mailing list archive.

Editing the Wiki
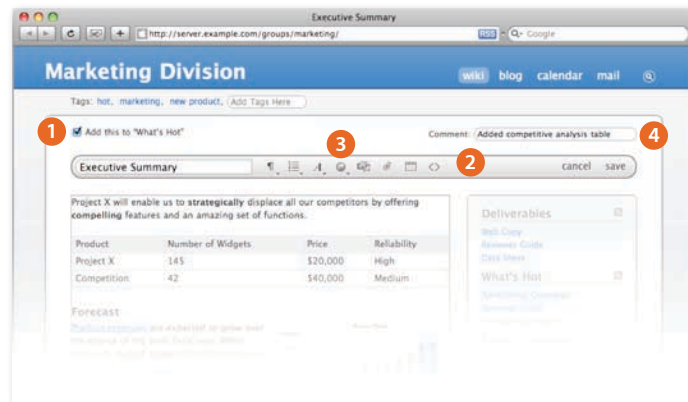
1 Click to add important pages to the What's Hot section of the sidebar.

2 The intuitive toolbar makes it easy for users to customize fonts and add text, tables, charts, and even audio or video files. No syntax or markup knowledge is required.

3 Just by dragging and dropping, users can insert hyperlinks and cross-reference material—again, no HTML required.

4 As people make significant changes, they can make a note.

Hosting external websites
Interested in using Mac OS X Server to host your own external website? Just create your site with the web publishing tool of your choice and drop the pages in the Library/WebServer folder on your server. Once your site is published, you can set it as your server's default home page—or choose any of your group wikis as the home page.

Podcast Producer

Podcast Producer takes the complexity out of capturing and publishing professional-quality podcasts. Instead of using a slew of ad hoc applications and utilities, you can rely on a single solution that integrates seamlessly from start to finish. With the latest releases of Mac OS X and Mac OS X Server, your organization has all the software you need for end-to-end podcast production.

Podcasts are ideal for distributing university lectures, training salespeople, delivering product demos, or simply to keep employees, students, and customers up to date. With Podcast Producer, your organization can produce more podcasts with less work—and maintain a high degree of standardization among them. This workflow-based solution automates the details, such as encoding into specific file formats or adding standard title frames and opening videos. So the podcasts from your group will always have a consistent look and feel, and you never have to worry about missing an important step.

Xgrid
Podcast Producer is built on Xgrid, Apple's robust distributed processing technology. With Xgrid, Podcast Producer expedites processor-intense encoding tasks by distributing them across multiple systems.

Easy recording using Podcast Capture
Creating a podcast starts with the new Podcast Capture application in Mac OS X Leopard. This innovative tool makes it easy for users to capture high-quality audio and video from a wide range of local and remote devices, including USB microphones, built-in iSight cameras and microphones, and digital video cameras connected via FireWire. An intuitive interface allows you to select the type of podcast you want to record: audio only, video with audio, or screen capture with audio—perfect for recording presentations and software demos. If you already have the content you want to publish, you can simply select an existing QuickTime media file and click Publish.

Workflow-based encoding and publishing
At the heart of Podcast Producer is a powerful workflow engine that automates encoding, processing, and publishing. A workflow is a script, a set of actions that defines how to handle the recorded video or audio. Podcast Capture uploads recorded media to Podcast Producer in Mac OS X Server, which executes the script. Leveraging QuickTime technology, Podcast Producer encodes media content into most Internet-standard formats. This means you can publish your content to any hosting server you want. Podcast Producer integrates with the wiki in Mac OS X Server, so you can post the new podcast to your group's blog, complete with RSS subscription functionality. Using QuickTime Streaming Server, you can even deliver podcasts to multimedia-enabled cell phones over high-speed wireless networks.

Sample Workflow
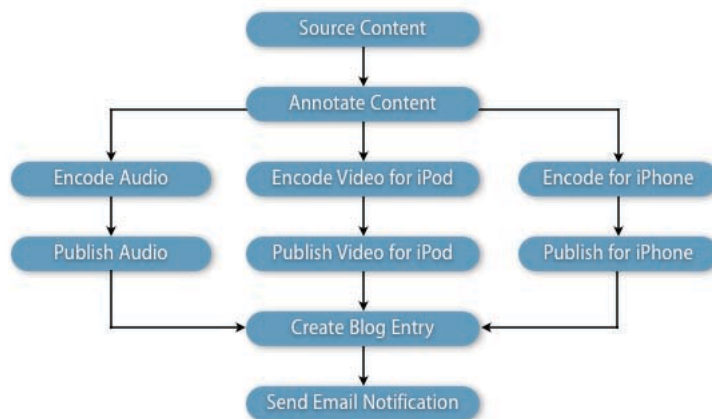
After Podcast Producer has done its work, your viewers can play your productions anywhere: on a Mac, PC, iPod, iPhone, or Apple TV. Podcast Producer can even send your audience an automatic email that a new podcast is available for viewing.

Networking and VPN

With Mac OS X Server, you don't need to be a networking expert to set up a secure server for your organization. With Server Assistant and Server Preferences you can configure it just the way you want—in just a few clicks.

Secure private network access

Virtual private network (VPN) access enables your users to take advantage of network services even while they're offsite, while preventing access by unauthorized individuals. Mac OS X Server supports standards-based L2TP/IPSec and PPTP tunneling protocols to provide encrypted VPN connections for Mac and Windows systems—and even Apple's iPhone. These VPN services use highly secure authentication methods, including MS-CHAP and network-layer IPSec. In addition, L2TP/IPSec connections support mutual client and server authentication of the VPN tunnel using shared secret.

Built-in firewall

A firewall application is built into Mac OS X Server, making it easy to protect the emails, wikis, blogs, and Time Machine backups on your server from unauthorized access. You can activate the firewall with a single click, then choose which services should have restricted access. The Mac OS X Server firewall is adaptive, which means it responds to suspicious activity—such as an unusual volume of access attempts—by creating a temporary rule to restrict access. In fact, it can even be useful to turn the firewall on without selecting any services, so it can always be watching for odd behavior that might threaten the security of your network.

Easy-to-configure gateway

If you have a Mac Pro or Xserve with dual Ethernet interfaces, you can use your server as a gateway between your local network and an Internet source. Especially valuable if your ISP has given your entire organization a single IP address, this configuration enables users on the local network to use your server to connect to the Internet.

Time Machine Backups

The new Time Machine feature in Leopard enables users to go back in time and revisit their Mac as it appeared in a particular timeframe in the past. By making a copy of everything on the system—digital photos, music, movies, TV shows, and documents—Time Machine makes it easy for users to recover their data and undo their mistakes.

Mac OS X Server can automatically back up your users' previous versions to the server or other designated hard drive on the network, protecting valuable data and freeing up disk space on individual hard drives—or eliminating the need for backup drives altogether.

Managing Time Machine Backups

1 To help you manage storage resources in your organization, Mac OS X Server allows you to enable or disable Time Machine backups to the server. You can also prohibit backups on a user-by-user basis.

2 If you don't want to take up room on your server, you can designate a separate hard drive just for client Time Machine backups.

3 You can choose to disallow backups of system files, which rarely change and are very large.

Time Machine for servers
Time Machine isn't just for client systems. You can take advantage of it to back up your server system—complete with all service data, such as wikis, calendars, mail, and shared files—to another hard drive, giving you an easy way to restore your network to an earlier configuration.

Test-Drive Mac OS X Server

Installation & Setup Worksheet
Apple makes it easy to wrangle all your important setup information before you start the installation process. Just fill out the Installation & Setup Worksheet, which you'll find in the Documentation folder on your installation DVD.

How simple is it to configure a server? We invite you to set up Mac OS X Server v10.5 Leopard and find out for yourself. With a fully functioning copy of Mac OS X Server, you have everything you need to configure and manage a suite of standard services for a workgroup.

If you haven't already, you might want to print these pages, so you have hard-copy instructions in hand as you step through the test-drive.

Installing Mac OS X Server

Before you get started, make sure your Xserve or Mac meets the system requirements for Mac OS X Server and has an active Ethernet connection. Choose your system carefully, since installation will erase the contents of the target drive you select.

· **Insert the Mac OS X Server Install Disc.** Double-click Install Mac OS X Server. Click Restart and authenticate after your system restarts. Mac OS X Server will boot from the installation DVD.

· **Choose your language.** Click ➡ to continue.

· **Welcome.** This screen gives you the opportunity to review system requirements and other information before proceeding. Click Continue. Agree to the terms of the license.

· **Select a Destination.** Choose a hard drive where you want to install Mac OS X Server. If you select a drive that already has an operating system, you will see a warning—you will need to change the drive's settings. Click Options to change settings. Select "Erase and Install" and click OK. Click Continue.

· **Install Summary.** This is the last chance to back out before erasing the destination hard drive. If you're set to proceed, click Install.

· **Installing.** Installation will take 20 to 30 minutes.

· **Install Succeeded.** Your system will restart automatically.

Stepping up to advanced services
Although you're setting up Mac OS X Server with the Standard configuration, you can use the Server Admin application to access more specialized services—such as Podcast Producer, the new integrated solution for producing professional-quality podcasts.

Setting Up Mac OS X Server

At restart, your system will boot from the destination hard drive, eject the Install Disc, and launch Server Assistant—which steps you through all the information needed to configure your server.

· **Welcome.** Click Continue.

· **Server Configuration.** Mac OS X Server gives you a choice of three configurations: Standard, Workgroup, and Advanced. To get an idea of how they differ, select each option and the screen shows you which services can be deployed for that configuration.

Since this test-drive covers the Standard configuration only, choose Standard and click Continue.

- **Keyboard.** Confirm that Mac OS X Server has recognized the keyboard you are using and click Continue.

- **Serial Number.** Enter the serial number that's on the card included with your Mac OS X Server discs. Click Continue.

- **Registration Information.** Fill in your name and contact information. This will register your copy of Mac OS X Server with Apple. Click Continue.

- **A Few More Questions.** Please provide additional information about how you expect to use Mac OS X Server. Click Continue.

- **Administrator Account.** Create a name, short name, and password for yourself as the administrator. If you like, you can also edit your picture in the directory. Click Continue.

- **TCP/IP Connection.** This screen allows you to enter the IP address and TCP/IP information provided to you by your ISP or network administrator. If your connection has already been set up, you can choose "Using DHCP" without needing to enter additional information.

- **Network Names.** For your Primary DNS Name, Mac OS X Server can detect your computer's IP address from information provided by your Ethernet connection. If it is not correct, contact your ISP before finishing configuration. If Mac OS X Server does not detect an IP address, you can enter your own name, such as myserver.private. You also need to enter a more colloquial name for your server—something like My Mac OS X Server. This is how users will see the server on the network. Click Continue.

- **Time Zone.** Choose your time zone. This is very important for accurately capturing times for wiki and blog entries, sent and received emails, and logins and logouts. Click Continue.

- **Server Backup.** If your server has more than one hard drive, Mac OS X Server gives you the option to back up your system, as well as all service data, such as wikis, calendars, mail, and shared files—making it easy to restore your server in the event of system failure. Click Continue.

- **Mail Service.** Click to relay your mail through your ISP's outbound mail server. Just specify the relay server name, such as relay.ISPname.com. You also have the opportunity to customize the welcome email that will notify your users that their account has been set up. Click Continue.

- **Remote Access.** You can allow your users to connect to Mac OS X Server when they are offsite, giving them remote access to wikis, blogs, shared calendars, email, and shared volumes. Click Continue.

- **Gateway.** You will see this screen only if your system has more than one Ethernet connection. In this case, you may want to set up your system as an Internet gateway. One Ethernet interface connects to an Internet source and the other connects to the local network, so the server can share its Internet connection with the users on the network. Select which port will connect to which source. Click Continue.

- **Client Computer Backup.** You can allow your users to back up to the server, so that they can restore deleted files or previous versions from their periodic backups using Time Machine. Choose a drive for storing these client backups. To conserve storage space and network bandwidth, the default is set to skip backup of system files. Click Continue.

- **Add User Accounts.** To enter user names now, click Continue.

Getting help along the way
If you need help—or simply want more information—you can always click the ⓘ icon on any screen. This brings up a Help window, which you can keep at the side of the Server Assistant window or Server Preferences pane. As you move through installation and setup, you'll see the Help information change to support you—wherever you are in the process.

Mail services for workgroups
Even if you are part of a larger organization with its own email system, you may wish to use Mac OS X Server to relay outgoing email and to manage mailing lists for your users and groups.

Directory application
With the new Directory application in Leopard, users in your group have the ability to edit their own account information at any time. They can also make changes to groups to which they belong.

- **Add New User Accounts.** Enter names for at least four users, real or hypothetical, clicking ⊞ for a blank field. For each user, Mac OS X Server assigns a short name, which you may edit. Create a password for each user. Click Continue.

  This step automatically creates an email address and a chat address for each user.

- **Setting Up.** As Mac OS X Server configures itself, it provides a review of all your settings. Click Continue.

- **Thank You.** Your server is now ready to use. Click Go to manage accounts and change settings using Server Preferences.
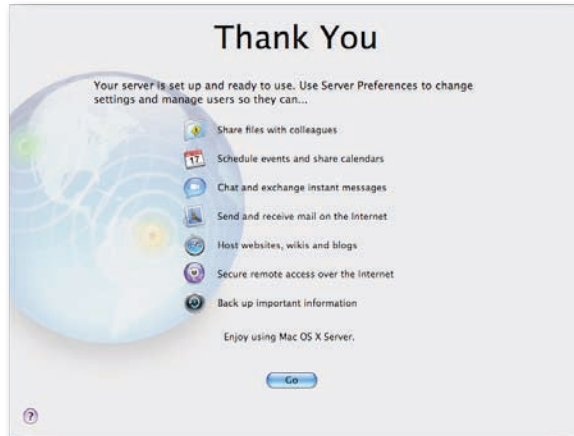
Managing the Server

New in Mac OS X Server v10.5 Leopard, Server Preferences presents a straightforward interface that makes it easy for even nontechnical users to manage a server, control access privileges, and change service settings. This means your organization doesn't need to have experienced IT staff in order to enjoy the advantages of a small business or workgroup server.

Server Preferences works just like System Preferences on a Mac. Click an icon to make changes and additions; when you're done, click Show All to see all the icons again. If you're not sure where to go to accomplish a particular task, you can always use the power of Spotlight to find what you need. For example, if you want to change your virus detection settings, start typing virus and Spotlight will direct you to the Mail pane.

If you get interrupted during this test-drive, no problem. Preferences are saved as you go, so you can come back and continue at any time. Just click the Server Preferences icon in the Dock.

Managing accounts: users and groups
- **Users pane.** Mac OS X Server displays a list of the users you added earlier, including yourself as Admin user. Click a user to add information and change that individual's settings.

  – **Account.** You can drop in a picture for each account or change the password you set earlier.

  – **Contact Info.** Add contact details for each user. Notice that Mac OS X Server has supplied an email and chat address automatically. If the user has a website and blog, you may also add these URLs. The information you enter will be stored in the directory, so all users can have access to information about others in the group.

Adding users and groups in the Workgroup configuration
Had you chosen the Workgroup configuration, you would be able to add users and groups simply by pulling names from your corporate directory.

– **Services.** By default, all clients can use all Standard services. Click to uncheck any services you wish to disable for this user.

– **Groups.** Mac OS X Server has created a group called Workgroup and all users are members by default. In the Groups pane, you will be able to create new groups. Once you've done this, you can come back to the Users pane to manage a user's participation in these groups—just click the Edit Membership button and check or uncheck group names.

• **Groups pane.** Mac OS X Server displays a list of the groups you've created. In this case, you have only the one default Workgroup group. Click ⊞ and create one or two new groups, supplying a full name and editing the short name if you wish. Click Create Group.

– **Group Settings.** For each group, you can define which services—file sharing, mailing list, and wiki—you want to enable. On the wiki, you can create, with a single click, a shared calendar and an archive of emails sent to the mailing list.

Leave all services checked, so that you can explore them later. This will automatically create a folder on the server, which all members can see under shared folders. It also creates a mailing list and a wiki for the group.

– **Membership.** To populate a group, select one of the groups you just added and click Edit Membership. Mac OS X Server gives you a list of all your users—just check those you want to assign to this group. Repeat this process for any other groups you created.

When you're done, go back to the Users pane and click Groups to cross-check your assignments. You can use Edit Membership in the Users pane to check or uncheck groups.

Managing services
Mac OS X Server enables all services by default. But with Server Preferences, you can disable (or re-enable) any service with an easy "slide" of the Off/On button.

• **File Sharing pane.** Mac OS X Server prebuilds your server with a Groups folder, as well as Backup and Public folders in the Shared Items folder. To add to the list of shared folders, just drag a folder or entire hard disk into the window.

This is where you set file access permissions. Select a folder and click Edit Permissions to check the users who can access the folder. You can also select an entire group—so that when you add users to a group, they'll have instant access to the appropriate folders. If you want others outside your workgroup to be able to read files, check to allow guest access. Click Save.

Shortcuts to services
Notice the arrow icon after each service. Clicking it takes you directly to the shared service. For example, click ➡ after "Wiki and blog" and the wiki opens; click ➡ after "Mailing list" to create a new Mail message addressed to the group.

• **iCal pane.** You'll want everyone in your workgroup to benefit from a shared calendar. iCal Server permits users to add files—such as presentations or discussion documents—to events, so shared calendars can get very large. For this reason, you can choose to constrain the size of any single event or the size of each user's calendar.

• **iChat pane.** By default, everyone in your workgroup is everybody's buddy, making it easy for users to communicate and collaborate. Also by default, your users can IM buddies on other IM servers—though you may choose to restrict this. To watch for possible abuse, you can also choose to log users' IM activity and to archive their chats.

• **Mail pane.** During your setup with Server Assistant, you may have entered your company's relay address for outgoing mail. Server Preferences allows you to edit the address at any time. For junk mail and virus filtering, you can choose how aggressively you want Mac OS X Server to respond to questionable incoming mail.

- **Web pane.** Mac OS X Server automatically creates a wiki for your workgroup and any other groups you have created. The Workgroup Wiki is the default home page, but you can use the pop-up menu to change it to another group's wiki—or to your external website, if you have one. Mac OS X Server also gives you a "master switch" to enable or disable all wikis on the server. If at any time you realize you want a new wiki, Mac OS X Server gives you a shortcut back to the Groups pane—where you can add a group, which automatically creates a wiki for the group.

- **VPN pane.** The built-in VPN server makes it easy to prevent unauthorized remote access to your server. It starts by generating a shared secret, which you can choose to keep hidden—or click Edit to change or to show the actual characters. To configure your VPN server, Mac OS X Server auto-discovers a range of IP addresses, or you can enter the IP address yourself. Click Save As, and Mac OS X Server creates a VPN configuration file. Choose your destination and click Save. You can now email the file to your users. When they open the file, it automatically creates a VPN setting on their system.

  Managing the system
  It's always important to maintain information about your server and administer measures to protect it from attacks, as well as from unintentional abuse.

- **Information pane.** This pane displays information about Mac OS X Server software and your server hardware. You can change the computer name, but not the IP address or the DNS name, which were established during setup. The Information pane also allows you to set notifications, so you can receive an automatic email, for example, when disk space is low, when software updates are available, or when Mac OS X Server detects a virus-infected email. If you make changes, click to save them.

- **Logs pane.** This pane allows you to view details about server activity. Use the pop-up menu at the bottom of the pane to display specific logs for each of the services.

- **Graphs pane.** Mac OS X Server visualizes important information for you: processor usage over time, network traffic, disk space, file-sharing traffic, and traffic to your web server.

- **Time Machine pane.** To help you manage storage resources in your organization, Mac OS X Server allows you to restrict users' ability to save their Time Machine backups to the server. You may also choose to designate a separate hard drive just for client backups.

- **Firewall pane.** Mac OS X Server leaves the firewall off by default. To enable it, just slide the Off/On button to the right and select which servers you want to protect. It can even be useful to turn the firewall on without selecting any services. This allows your server to take advantage of the adaptive firewall—which creates a temporary rule to restrict access whenever it detects suspicious activity, such as an unusual volume of access attempts.

Monitoring the Server

Want to keep an eye on the status of your server, whether from your own computer or any other system running Mac OS X Leopard or Mac OS X Server v10.5 Leopard? The Server Status widget gives you snapshots of processor use, network traffic, and available disk space.

First, you'll need to set the Server Status widget to recognize your server.

- Open Dashboard (from the Dock or using the F12 key) and click ⊕ to open a selection of widgets.

- Choose the Server Status widget and drag it to your desktop.

- Enter the server's DNS or IP address, your name as the administrator, and your password. Click Done.

 Now that your Server Status widget is live, it displays information in a convenient window.

- For each service, you can see the current number of connections. You can also see a status indicator; a green indicator means the service is running.

- Click the graph to change the time period you wish to monitor.

- Click an icon below the graph to see information about a different processor or service.

- If you want to make changes to any service, click the service name to open its pane in Server Preferences.

Exploring Mac OS X Server as a User

Now that you've had a chance to be a Mac OS X Server administrator—setting up services, creating users and groups, and configuring your Server Status widget—you might want to discover how powerful it is to be a Leopard client. If you created an actual user on a Leopard system and enabled all their services, you can now switch to that system and test-drive Mac OS X Server from the user's point of view. (The more users and groups you created, the more interesting your exploration will be.)

- **Directory.** View a list of the users and groups you created during setup. Click + to create a new shared contact. Change your account information. Set up a new group and enable a mailing list and wiki.

- **Address Book.** Click Directories and search for one of the other users you created during setup. Notice that all the people in your workgroup have been added automatically to your Address Book.

- **Finder.** Notice your Shared list contains a Server icon. If you are using a different hardware system from the server, all shared folders (which you are authorized to see) will have mounted automatically. If you are using the same system as the server, you'll need to mount a shared volume. Drag and drop files into a folder.

- **Spotlight Server.** Type a search term in the Spotlight field in the Finder. Click Shared to search content on the server.

- **iCal.** Open the Accounts tab in iCal Preferences and make sure Mac OS X Server has set up your account. Create a new event. Just drag and drop users from the directory to add attendees. Or start typing a user name and Mac OS X Server will find it for you. Subscribe to a calendar for a group you just created.

- **iChat.** Open your Buddy List to see all the users in your group. Choose a buddy and open screen sharing. Submit a request to add a chat room.

- **Mail.** Open the Accounts tab in Mail Preferences and make sure Mac OS X Server has set up your account. Create a new message and address it to one of the users in your workgroup. Notice that Leopard autofills the complete address as you start typing. Send an email to a mailing list for a group you created.

- **Wiki.** Open the Directory application and find your workgroup. Click ➔ to launch your browser and open the group's wiki. Click ✎ and enter some information, add some tags, change the formatting, and attach a file. Open the shared calendar. Open the mailing list archive. If you send any mail to the mailing list, it shows up here.

Single sign-on
All Leopard services are single sign-on. This means that users need type their password only once to access the server—and they have only one password to remember.

Product Details

Mac OS X Server can be purchased in 10-client and unlimited-client editions to meet the needs of server deployments of any size. License restrictions apply only to simultaneous file-sharing services for Mac and PC clients.

- **Mac OS X Server 10-client edition.** The easiest way to deploy essential network services, the 10-client edition is designed for small workgroups and Internet hosting services that do not require simultaneous file sharing among more than 10 Mac and PC clients.

- **Mac OS X Server unlimited-client edition.** The most cost-effective way to support Mac and Windows workgroups, the unlimited-client edition is perfect for classroom labs, creative professionals, and medium-size to large workgroups with high volumes of file-sharing activity.

Also available is an unlimited-client upgrade from the 10-client edition.

Included with Mac OS X Server Version 10.5 Leopard

The Mac OS X Server package includes the following:

- Installation DVD containing Mac OS X Server v10.5 Leopard
- CD containing Admin Tools
- Printed *Getting Started* guide
- Electronic documentation

Mac OS X Server documentation
For more information about advanced capabilities in Mac OS X Server, download technology briefs and complete manuals at www.apple.com/server/documentation.

Mac OS X Server includes a complete set of Internet and workgroup services to meet the needs of businesses and institutions of any size. No matter how you configure your server, you'll have access to these capabilities:

- Fundamental networking and security services
- Open Directory for standards-based directory and authentication services
- Workgroup Manager for managing preferences and policies
- Cross-platform file and printer sharing using native protocols
- iCal Server for scalable calendar services
- Easy-to-manage mail solutions using open source technologies
- Scalable solutions for hosting dynamic websites and enterprise applications
- Software update server for managing Apple software updates
- System imaging with NetBoot and NetInstall
- iChat Server for secure IM communications
- Wiki Server for web-based collaboration and shared calendars
- Windows services for supporting mixed-platform workgroups
- QuickTime Streaming Server for live broadcasting and on-demand streaming of digital media
- Podcast Producer for capture, encoding, and delivery of high-quality podcasts
- Large-scale distributed computing using Xgrid

System Requirements

Mac OS X Server requires an Apple server or Mac desktop computer with an Intel, PowerPC G5, or PowerPC G4 (867MHz or faster) processor; 1GB of physical RAM; 20GB of available disk space.

Some features, such as video conferencing and podcast production, have additional system requirements or require additional purchase(s). See www.apple.com/server/macosx for details.

AppleCare Technical Support

Mac OS X Server comes with 90 days of toll-free telephone support for installation, launch, and recovery and lifetime access to Apple's online support resources, such as the AppleCare Knowledge Base and discussion forums. In addition, Apple offers consultative phone and email support for advanced server migration and integration issues. Customers can choose from three levels of AppleCare technical support:

- **Select** covers up to 10 incidents with 4-hour response for priority 1 issues (server down), 12 hours a day, 7 days a week.* Additional incidents can be purchased as needed.

- **Preferred** covers an unlimited number of incidents with 2-hour response for priority 1 issues, 12 hours a day, 7 days a week,* and assigns a technical account manager to the organization.

- **Alliance** covers an unlimited number of incidents at multiple locations with 1-hour response for priority 1 issues, 24 hours a day, 7 days a week.* This plan includes an onsite review by an Apple technical support engineer.

For more information about AppleCare support products, including terms and conditions, visit www.apple.com/server/support.

Apple Maintenance Program

This optional program for Mac OS X Server makes it easy to manage software expenditures while benefiting from the latest technologies and improvements. With one payment, you automatically receive major Mac OS X Server software upgrades for three years. For more information, including program terms and conditions, visit www.apple.com/server/maintenance.

Training and Certification

Apple offers comprehensive training programs on Mac OS X and Mac OS X Server applications and technologies. A combination of lecture, demonstration, and hands-on exercises, classes are taught by Apple Certified Trainers with real-world experience and dynamic presentation skills. Customers can choose to attend classes at an Apple Authorized Training Center or have the training delivered onsite at their business or institution.

Once IT professionals have acquired the requisite skills, Apple certification programs provide tangible evidence of their technical expertise. Three certification levels—Apple Certified Support Specialist, Apple Certified Technical Coordinator, and Apple Certified System Administrator—are based on corresponding training course content.

For more information about Mac OS X Server training and certification programs, visit www.apple.com/server/training.

*Response times are not guaranteed.

Additional Resources

For more information about Mac OS X Server and other Apple server solutions, explore the following Apple websites:

- **Mac Products Guide:** guide.apple.com/uscategories/servers.lasso
- **Documentation:** www.apple.com/server/documentation/
- **Training and certification:** www.apple.com/server/training/
- **Mailing lists:** www.lists.apple.com/mailman/listinfo/macos-x-server/
- **Product support:** www.apple.com/support/macosxserver/
- **Product discussions:** discussions.info.apple.com/
- **Developer support:** developer.apple.com/server/
- **Product feedback:** www.apple.com/feedback/server.html
- **Product security:** www.apple.com/support/security/
- **Apple Professional Services:** www.apple.com/services/consulting/
- **List of Apple press contacts:** www.apple.com/pr/contacts.html
- **Apple web badges:** www.apple.com/about/webbadges/

In addition, several third parties publish in-depth materials for Mac OS X Server users:

- **O'Reilly.** Mac OS X books, articles, and technical resources for Mac OS X and other leading-edge computing and networking technologies: mac.oreilly.com/

- **MacEnterprise.org.** Community and resources for administrators deploying Mac OS X labs in enterprise and higher education environments: www.macenterprise.org/

- **Peachpit Press.** Books, articles, and technical materials on Mac OS X, Mac OS X Server, UNIX, and more: www.peachpit.com

For More Information

For more information about Mac OS X Server and other Apple server solutions, visit www.apple.com/server.