



Mac OS X Server Print Service Administration

For Version 10.3 or Later



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Mac OS X Server print service helps you set up a managed printing environment on your network.

You can share printers by setting up print queues for them on a server. When a user prints to a shared queue, the print job waits on the server until the printer is available or until established scheduling criteria are met. For example, you can:

- Change the priority of waiting print jobs
- Hold a job for printing at a later time
- Limit the number of pages individual users can print on specific printers
- Keep logs summarizing printer use

You can use the following applications to set up and administer print service:

- Server Admin to configure print service, set up shared queues, manage print jobs, and monitor the status of print jobs
- Workgroup Manager to set print quotas for users

The Mac OS X Server print service is built on top of the standard Mac OS X client printing architecture, which is, in turn, built on the Common UNIX Printing System (CUPS).

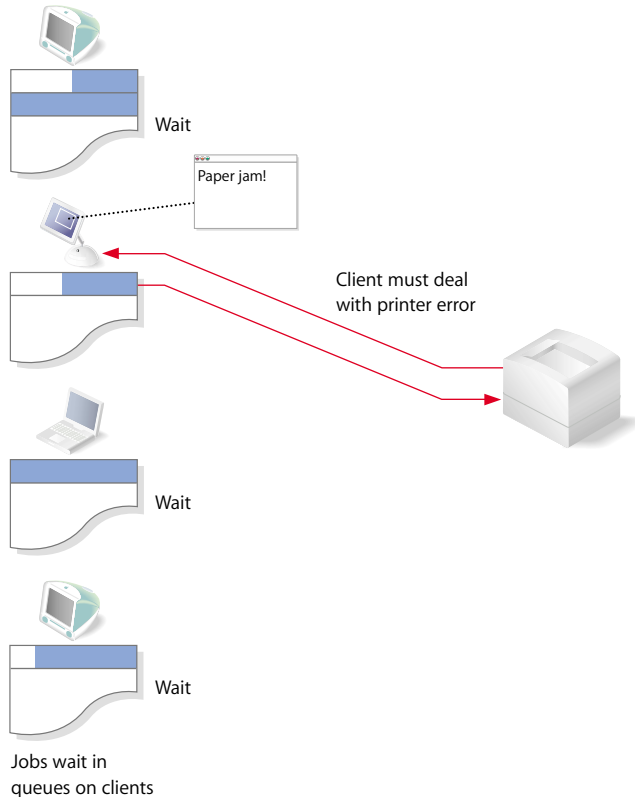
Overview of Network Printing

It's possible to benefit from some of the advantages of shared network printing without using a server. However, a quick comparison of network printing with and without a server-based print service shows what a print service can do to make things easier for your users and for you as an administrator.

Without Print Service

Providing shared printers to your users, even without using a server, is relatively easy: connect the printers to your network and let individual users choose the printer that best suits their needs.

When a user prints a document, the resulting print job waits in a queue on the client computer until the printer is ready to accept it (in common printing terminology, you say the job is “spooled to a local queue”).



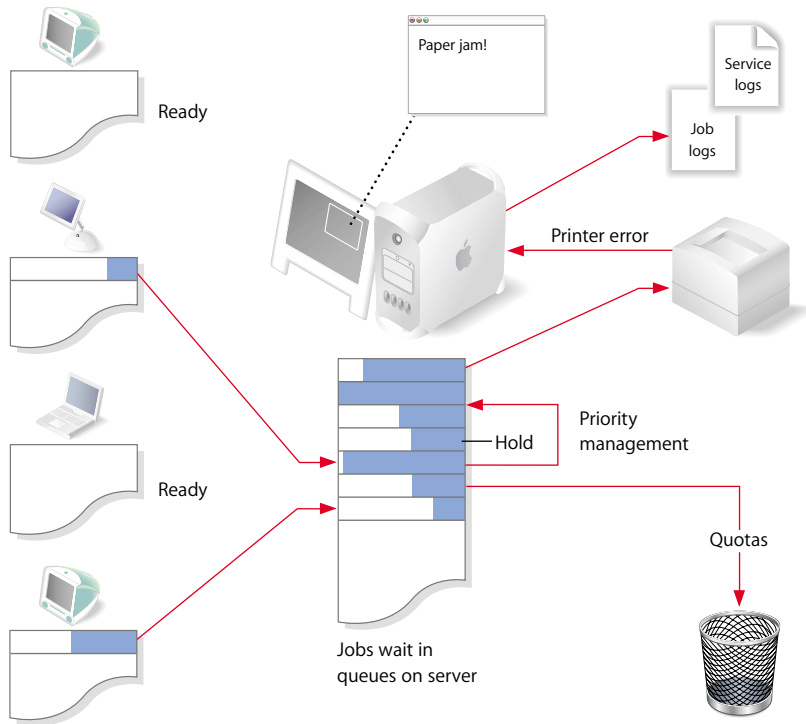
Although this way of providing access to printers is easy to set up, there are shortcomings:

- Users need to be sure their jobs have finished printing before they can turn off their computers or, in the case of mobile clients, disconnect their computers from the network.
- Error messages from the printer (for example, “out of paper” or “paper jam”) go directly to the user currently printing.
- It is difficult for you, as administrator, to keep track of or control how many pages are printed by individual users.

With Print Service

To take advantage of print service, you set up queues for available printers on a server. Users choose from these queues instead of choosing printers directly.

When a user prints a document, the resulting print job moves quickly from the queue on the user's computer to the queue on the server.



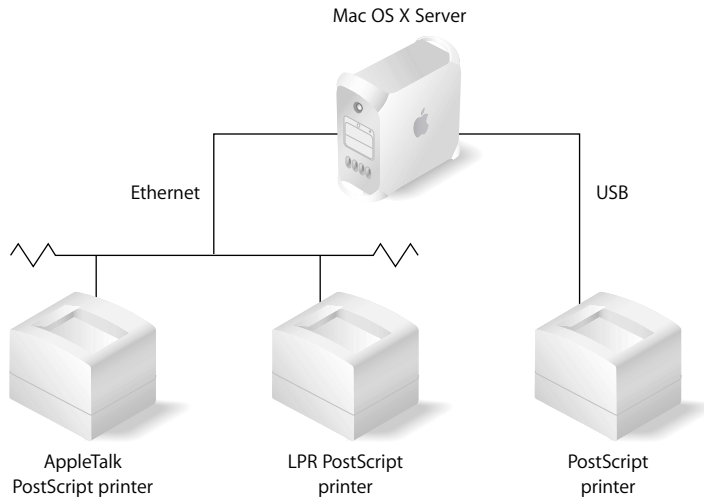
This way of providing printer access has advantages over simple network printing:

- Print jobs transfer quickly from client computers to the server's queue, so users can turn off or disconnect their computers soon after printing.
- Printer error conditions are reported on the server rather than on individual client computers.
- You can easily limit and track the number of pages individual users print on specific printers.
- You can control when and in what order individual jobs print.

Supported Printers

Print service in Mac OS X Server supports:

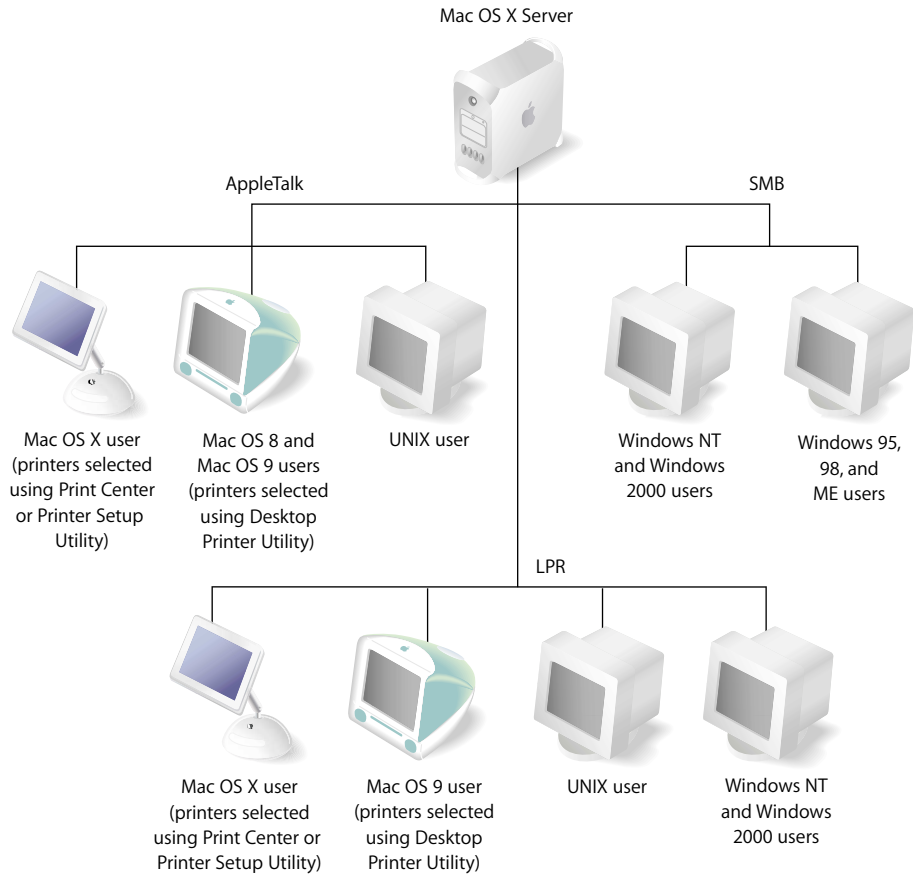
- PostScript-compatible printers connected to your network that use the AppleTalk or Line Printer Remote (LPR) protocol
- PostScript printers connected directly to the server using the Universal Serial Bus (USB)



Note: A non-PostScript printer connected to the USB port of a Mac OS X client computer can be shared using the Printer Sharing option in Sharing preferences, but this is outside the scope of Mac OS X Server print service.

Supported Clients

Any computer using the AppleTalk, LPR, or Server Message Block (SMB) protocol can print to queues shared through the Mac OS X print service.



Macintosh computers can communicate with printers using either AppleTalk or LPR. Windows computers use LPR and SMB. UNIX computers use LPR. For more information on printing from a specific kind of client computer, see Chapter 3, “Setting Up Printing Clients,” on page 23.

Additional Considerations

Distributing Workload Using Printer Classes

Each print service queue you set up is assigned to a single printer. The Common UNIX Printing System (CUPS) supports a special queue called a printer class, which is a queue with more than one printer assigned to it.

A printer class offers a number of advantages over single-printer queues in high-volume or high-availability printing environments:

- Print jobs are assigned to the next available printer in the class, so you can have as many jobs printing simultaneously as you have printers assigned to the class.
- If a printer assigned to the class becomes unavailable for any reason, the other printers in the class continue to print waiting jobs.

You can set up a printer class using Printers > Pool Printers in the Printer Setup Utility (in /Applications/Utilities). After the class is created, you can add and manage the resulting class queue in print service as you would any other queue.

You can also create a printer class using commands in Terminal. For more information, see the chapter on print service in the command-line administration guide.

Security

AppleTalk and LPR printer queues do not support secure authentication. Print service relies on the client to provide user information. Although standard Macintosh and Windows clients provide accurate information, a clever user could potentially modify the client to submit false information and thereby avoid print quotas.

Windows service does support authentication, requiring users to log in before using SMB printers.

The CUPS software on which print service relies supports a print job submission method called Internet Printing Protocol (IPP). Print service clients are usually set up to use AppleTalk, LPR, or SMB to submit print jobs. However, clients that use IPP directly to submit print jobs can bypass print service and its quotas.

Note: IPP is enabled on a Mac OS X client whenever you turn on Printer Sharing in Sharing preferences.

This chapter shows how to set up print queues and change print service settings using Server Admin.

Before You Begin

Before you set up print service, note which protocols your clients use for printing. Print service supports AppleTalk, Line Printer Remote (LPR), and Server Message Block (SMB) protocols.

Setup Overview

Here is an overview of the steps for setting up print service:

Step 1: Create queues for your printers

Create queues for your printers on the server using Server Admin. Users see these queues as printers. See “Adding a Print Queue” on page 12.

Step 2: (Optional) Adjust general service settings

Use Server Admin to specify the default LPR queue and turn on print service logs. By default, there is no default LPR queue and logging is off. See “Choosing a Default LPR Queue” on page 14 and “Setting the Print Log Archival Interval” on page 15.

Step 3: Start print service

Use Server Admin to start print service on the server and make the queues available to clients. See “Starting Print Service” on page 18.

Step 4: (Optional) Set print quotas

If you want to limit the number of pages users can print, set print quotas for user accounts and enforce quotas on print queues. See “Setting Print Quotas” on page 19.

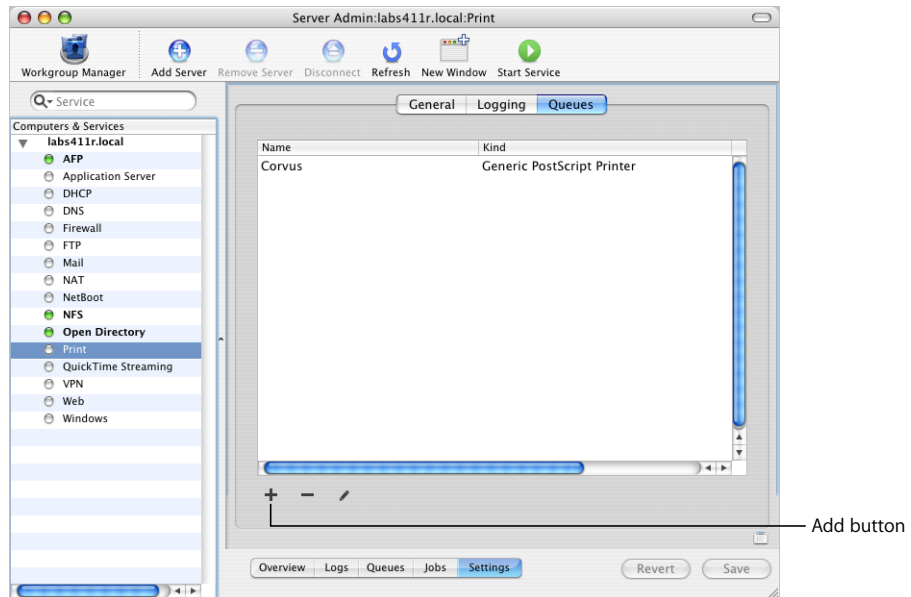
Step 5: Set up client computers

Add, or show your users how to add, your server’s queues to the printing setups on their computers. See Chapter 3, “Setting Up Printing Clients,” on page 23.

Setting Up the Service

Adding a Print Queue

You can share any PostScript-compatible printer that has a queue set up for it on the server. You create queues for shared printers on the server using Server Admin.



To create a shared print queue:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Settings.
- 3 Click Queues, then click the Add (+) button (below the list).

If you don't see the Queues button, you might already be looking at queue settings. Click the Back button (the left-pointing arrow in the upper right).

- 4 Choose the protocol used by the printer from the pop-up menu.
- 5 For an AppleTalk printer, select the printer in the list and click OK.

For an LPR printer, type the printer IP address or DNS name and click OK. (If you don't want to use the printer's default queue, first deselect "Use default queue on server" and type a queue name.)

- 6 Type the queue name you want clients to see in the Sharing Name field.

This does not change the Printer Setup Utility queue name on the server.

Make sure the name is compatible with any naming restrictions imposed by your clients. For example, some LPR clients do not support names that contain spaces, and some Windows clients restrict names to 12 characters.

Queue names shared via LPR or SMB should not contain characters other than A–Z, a–z, 0–9, and _ (underscore).

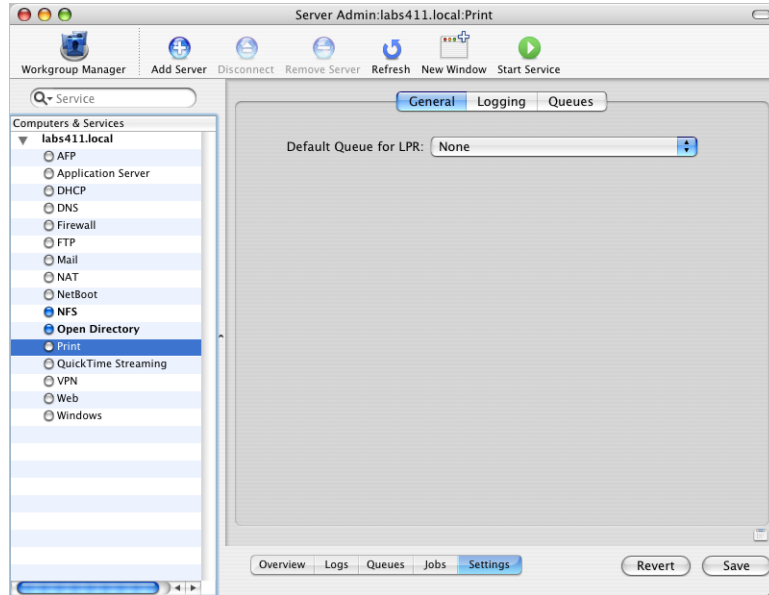
AppleTalk queue names cannot be longer than 32 bytes (which may be fewer than 32 typed characters). Note that the queue name is encoded according to the language used on the server and may not be readable on client computers using another language.

- 7 Select the protocols used for printing by your client computers.
If you select “Windows printing (SMB),” make sure you start Windows services.
- 8 Select “Enforce quotas for this queue” if you want to enforce the print quotas you establish for users in Workgroup Manager.
- 9 Click Save, then click the Back button (in the upper right).

Choosing a Default LPR Queue

You can use print service General settings in Server Admin to specify a default LPR queue for the server.

Setting a default LPR queue makes it easier for LPR clients to print without knowing the names of the queues on the server.



To set the default LPR queue:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Settings, then click General.
- 3 Choose the default queue from the pop-up menu.
- 4 Click Save.

If the queue you want to use is not in the list, it might not currently be shared using LPR.

A user can add this default LPR queue to his or her computer's printer list without knowing the queue's name by choosing "Use default queue on server" when adding the printer.

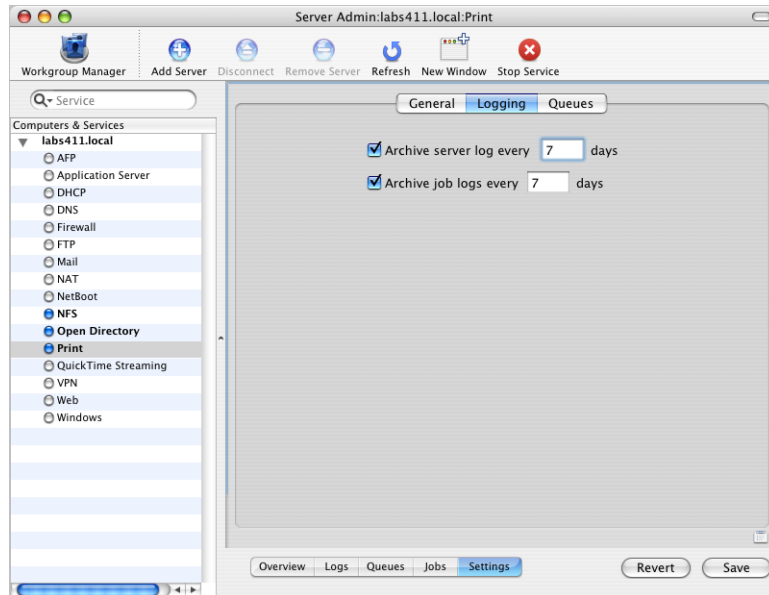
From the Command Line

You can also set the default LPR queue using the `serveradmin` command in Terminal. For more information, see the print service chapter of the command-line administration guide.

Setting the Print Log Archival Interval

Print service keeps a general service log and individual logs for each shared queue. When a log is archived, new events are recorded in a new, empty log file.

You can use the Logging settings for print service in Server Admin to specify how often the logs are archived.



To set the log archive intervals:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Settings, then click Logging.
- 3 Select Archive for the log you want to save and type how often the log is archived.
- 4 Click Save.

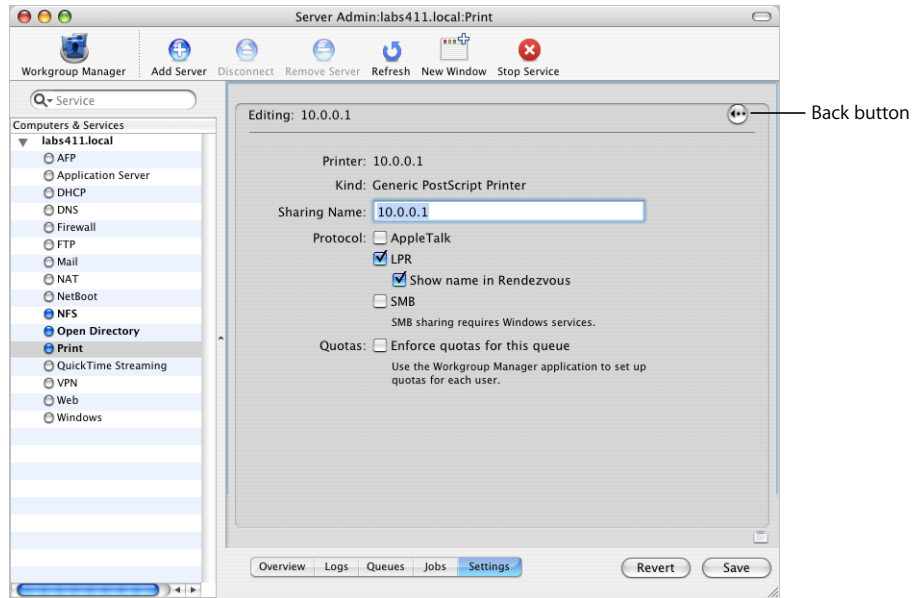
Both current and archived logs are in `/Library/Logs/PrintService`.

From the Command Line

You can also set the archival interval using the `serveradmin` command in Terminal. For more information, see the print service chapter of the command-line administration guide.

Advertising an LPR Queue Using Rendezvous

You can make it easier for your users to find shared LPR queues by advertising them using Rendezvous.



To advertise a queue using Rendezvous:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Settings, then click Queues.
- 3 Double-click the queue you want to advertise.
- 4 Under LPR in the Protocol section, select “Show name in Rendezvous.”
- 5 Click Save, then click the Back button (in the upper right).

Listing an LPR Queue in Open Directory

You can make it easier for your users to find shared LPR queues by listing them in Open Directory. If you include the Postscript Printer Description (PPD) printer model name in the directory, users don't need to worry about which printer model to choose.

To list a queue in Open Directory:

- 1 If you haven't already, create the queue.
- 2 Open Workgroup Manager.
- 3 If you don't see the Inspector buttons, choose Workgroup Manager > Preferences and select "Show All Records tab and inspector."
- 4 If necessary, switch to the correct directory domain.
- 5 Click the All Records button (it looks like a bull's-eye, next to the Users, Groups, and Computers buttons).
- 6 Choose Printers from the pop-up menu below the All Records button and click New Record.
- 7 Double-click "untitled_1" next to RecordName attribute, type the name you want your users to see when they're browsing for the printer, and press Return.
- 8 Click New Attribute and choose PrinterLPRHost from the Attribute Name pop-up menu.
- 9 Click in the Text field, type the IP address or DNS name of the server that hosts the queue, and click OK.
- 10 If the queue you are listing is not the default LPR queue on the server, click New Attribute, choose PrinterLPRQueue from the pop-up menu, type the queue name in the Text field, and click OK.
- 11 To specify the printer model (optional), click New Attribute, choose PrinterType from the pop-up menu, type the model name, and click OK.

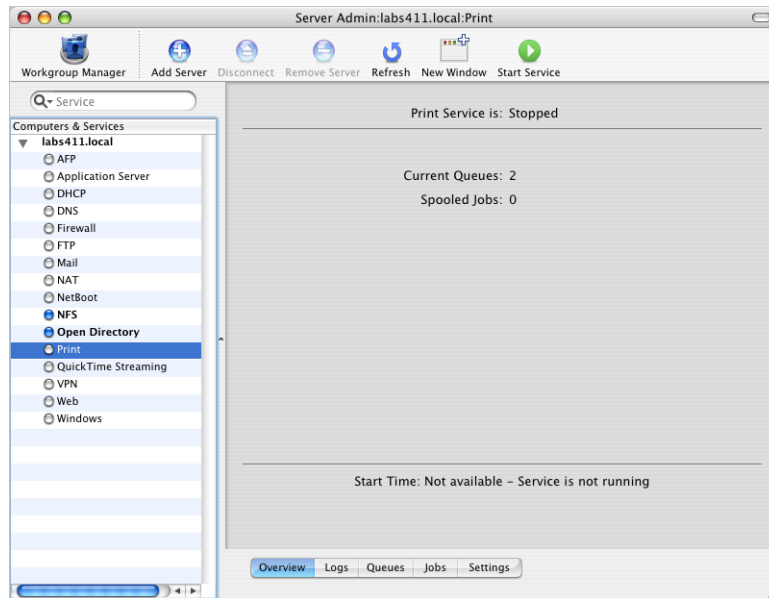
Important: Make sure the model name you type exactly matches the value of the *ModelName attribute in the PPD file. To confirm the value of this attribute, try either of the following:

 - Open Printer Setup Utility, click Add, choose IP Printing from the pop-up menu, choose the manufacturer from the Printer Model pop-up menu, and find the name in the resulting list.
 - Make a copy of the PPD file, use the `gunzip` command in Terminal to decompress it, then open it in TextEdit or another text editor and search for "*ModelName." You can find the PPD files in `/Library/Printer/PPDs/Contents/Resources/en.lproj`.
- 12 Click Save.

Starting Print Service

You can use Server Admin to start print service.

After you start the service, it will restart automatically any time the server is restarted.



To start print service:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Start Service.

From the Command Line

You can also start print service by using the `serveradmin` command in Terminal. For more information, see the print service chapter of the command-line administration guide.

Setting Print Quotas

You can establish print quotas to control the number of pages each of your users prints on your various printers.

How Quotas Work

A print quota is the total number of pages that can be printed during a specified time period. When a user has printed the specified number of pages, he or she cannot print again until the quota period ends and the quota is automatically renewed (or until you explicitly renew the quota, which you can do at any time).

For each user, you set either a single quota that covers all the printers they use or individual quotas for each printer.

In the case of a single quota, every page printed counts against a user's quota, regardless of the printer used.

In the case of per-queue quotas, you can vary the quota from printer to printer, or choose not to enforce quotas on some printers while restricting the use of others.

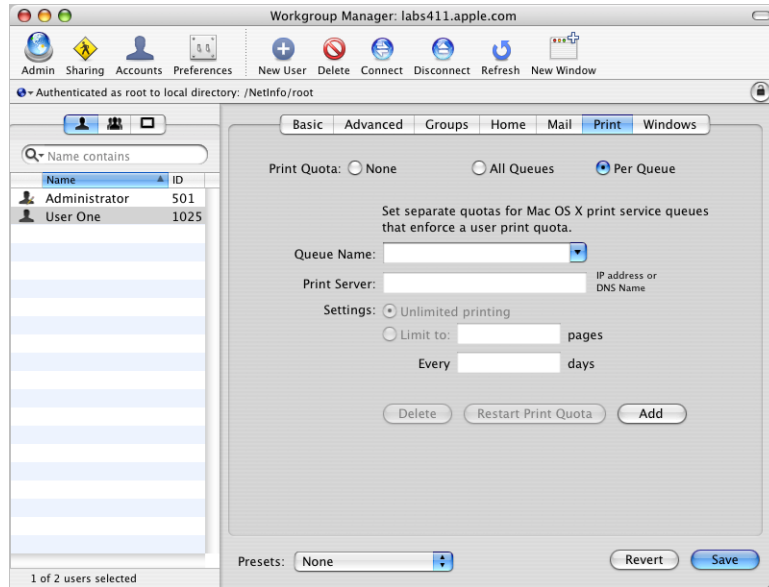
Setting Quotas

There are two parts to establishing print quotas:

- Specifying the quota and time period for each user using Workgroup Manager
- Setting print service to enforce quotas for individual queues using Server Admin

Specifying User Print Quotas

You can use Workgroup Manager to specify print quotas for individual users.



To set a user's quota:

- 1 Open Workgroup Manager, click Accounts, and select the user.
- 2 Click Print.
- 3 To set one quota for all queues, select All Queues, then type the number of pages and the number of days after which the quota is reset.

To set a quota for a particular queue, select Per Queue, choose the queue from the pop-up list, and type the quota and quota period.

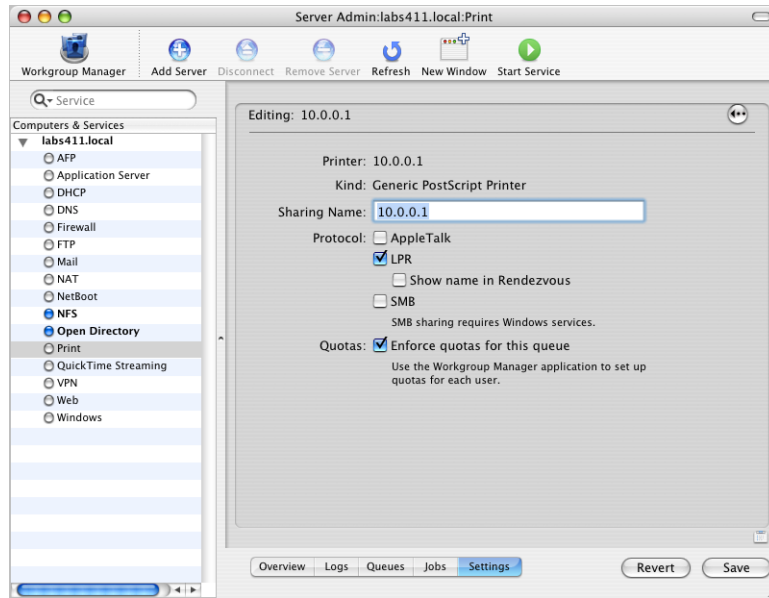
If the queue is not in the list, click Add and change “untitled” to the queue name. Then choose the queue from the pop-up list, type the IP address or DNS name of the server hosting the queue, and type user's the page quota and quota period.

- 4 Click Save.

The quotas are not enforced until you turn on quota enforcement for specific queues in print service using Server Admin. See “Enforcing Print Quotas for a Queue” on page 21.

Enforcing Print Quotas for a Queue

Users are not subject to print quotas you set for them in Workgroup Manager until you also turn on quota enforcement for specific print queues in print service.



To enforce quotas for a print queue:

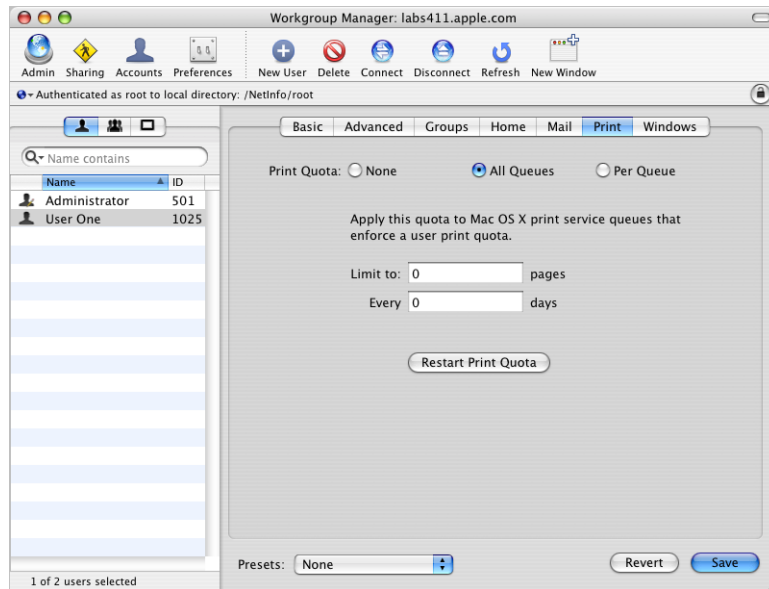
- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Settings.
- 3 On the Queues pane, select a queue and click the Edit button (below the list).
- 4 Select “Enforce quotas for this queue.”
- 5 Click Save, then click the Back button (in the upper right).

From the Command Line

You can also set quota enforcement for a queue using the `serveradmin` command in Terminal. For more information, see the print service chapter of the command-line administration guide.

Resetting a User's Print Quotas

You can restart a user's quota period or change the user's page quota at any time using Workgroup Manager.



To reset quotas for a print queue:

- 1 Open Workgroup Manager and select the user in the user list.
- 2 Click the Print tab and select All Queues or Per Queue.
- 3 To restart the quota period, click Restart Print Quota. (To see when the current period started, look just above the button.)

To change the number of pages allowed during the current quota period, type a new value in the "Limit to" field.

- 4 Click Save.

This chapter shows how to set up client computers to use the printers offered by your print service.

The Mac OS X Server print service supports four basic classes of clients:

- Mac OS X clients
- Mac OS 9 and Mac OS 8 clients
- Windows clients
- Unix clients

About PPD Files

A PostScript Printer Description (PPD) file contains specialized information about a particular printer model. Your users need the PPD file to take advantage of a printer's special features and capabilities. Without the right PPD, they won't be able to do things such as choose from multiple paper trays, use special paper sizes, or print on both sides of the page.

Mac OS X and Mac OS X Server come with PPD files already installed for most popular printers. (To see what's available, open Printer Setup Utility, click Add, choose IP Printing from the pop-up menu, and choose a vendor from the Printer Model pop-up menu.) If you can't find a PPD for the printer you want to use, contact the manufacturer for a PPD installer for that particular model. As a last resort, try using the Generic PPD, which should allow basic printing on most printers.

The proper PPD file must be chosen on the client computer when the print queue is added.

Mac OS X Clients

To use queues offered by a server, Mac OS X users need to add the queues to their printer lists using Printer Setup Utility or Print Center just as they would add any other printer. Mac OS X supports AppleTalk and LPR printers.

Adding an AppleTalk Print Queue in Mac OS X

You can use the Print Setup Utility (Print Center in versions of Mac OS X earlier than 10.3) to add print queues to a computer's printer list. These applications are usually located in /Applications/Utilities.

To add an AppleTalk print queue:

- 1 Open Printer Setup Utility or Print Center on the client computer and click Add.
- 2 Choose AppleTalk from the pop-up menu.
- 3 Select a queue from the list.
- 4 Choose the printer type from the Printer Model pop-up menu. If you're not sure of the type, Generic Postscript works for most printing needs.
- 5 Click Add.

Adding an LPR Print Queue in Mac OS X

You can use the Printer Setup Utility (Print Center in versions of Mac OS X earlier than 10.3) to add an LPR print queue to a computer's printer list. Printer Setup Utility (or Print Center) is usually located in /Applications/Utilities.

The way you add an LPR printer depends on whether the printer is:

- Shared by IP address or DNS name only
- Advertised via Rendezvous
- Listed in Open Directory

To add an LPR print queue by IP address or DNS name:

- 1 Open Printer Setup Utility or Print Center and click Add.
- 2 Choose "IP Printing" from the pop-up menu.
- 3 Enter the server's DNS name or IP address (not the printer's name or address) in the Printer's Address field.

To use the server's default queue, leave the Queue Name field blank (Printer Setup Utility) or select the "Use Default Queue on Server" option (Print Center).

If you have not set up a default LPR queue on the server, or if you want to use a different queue, type a queue name in the Queue Name field. (In Print Center, first deselect the "Use Default Queue on Server" option.)

- 4 Choose the printer type from the Printer Model pop-up menu. If you're not sure of the type, Generic Postscript works for most printing needs.
- 5 Click Add.

If you set up your server to advertise LPR print queues using Rendezvous or Open Directory, a client can browse for an LPR queue instead of having to know the address of the server and the name of the queue when adding a printer.

To add an LPR print queue that is advertised via Rendezvous:

- 1 Open Printer Setup Utility or Print Center and click Add.
- 2 Choose Rendezvous from the pop-up menu.
- 3 Select the queue by name.
- 4 Choose the printer type from the Printer Model pop-up menu. If you're not sure of the type, Generic Postscript works for basic printing needs.
- 5 Click Add.

For help advertising a printer using Rendezvous, see "Advertising an LPR Queue Using Rendezvous" on page 16.

To add an LPR print queue that is listed in Open Directory:

- 1 Open Printer Setup Utility or Print Center and click Add.
- 2 Choose Open Directory from the pop-up menu.
- 3 Select the queue by name.
- 4 If the printer type is not preselected in the Printer Model pop-up, choose it from the pop-up menu. If you're not sure which type to use, Generic Postscript works for most basic printing needs.
- 5 Click Add.

For help listing a printer in Open Directory, see "Listing an LPR Queue in Open Directory" on page 17.

Troubleshooting

If a Mac OS X client is having trouble printing, see Chapter 5, "Solving Problems," on page 47.

Mac OS 8 and Mac OS 9 Clients

To use shared queues on a server, Mac OS 8 and Mac OS 9 users need to add the queues just as they would add any other printer, using the Chooser for AppleTalk printers or the Desktop Printer Utility for LPR printers.

The Desktop Printer Utility is usually located in the Apple Extras/LaserWriter Software or in /Applications/Utilities.

Setting Up an AppleTalk Queue on Mac OS 8 or 9 Clients

On a computer running Mac OS 8 or Mac OS 9, you use the Chooser to set up an AppleTalk queue.

To add an AppleTalk print queue:

- 1 Open the Chooser.
- 2 Select the LaserWriter 8 icon or the icon for your printer's model.
The LaserWriter 8 icon works well in most cases. Use a printer-specific icon, if available, to take advantage of special features that might be offered by that printer.
- 3 Select the queue from the list on the right and click Create.
- 4 When the dialog appears, select the PPD for the printer.
- 5 Close the Chooser.

Setting Up an LPR Queue on Mac OS 8 or 9 Clients

Use the Desktop Printer Utility to set up LPR printers on a computer running Mac OS 8 or Mac OS 9.

To add an LPR print queue:

- 1 Open the Desktop Printer Utility, select Printer (LPR), and click OK.
- 2 In the PostScript Printer Description (PPD) File section, click Change and select the PPD file for the printer. Choose Generic if you do not know the printer type.
- 3 In the LPR Printer Selection section, click Change and enter the server's IP address or domain name in the Printer Address field.
- 4 Enter the name of the print queue on the server that is configured for sharing via LPR.
Leave the field blank if you want to print to the default LPR queue.
- 5 Click Verify to confirm that print service is accepting jobs via LPR.
- 6 Click OK, then Create.
- 7 Type a name and choose a location for the desktop printer icon, and click Save.
The default name is the printer's IP address, and the default location is Desktop.

Troubleshooting

If a Mac OS 8 or 9 client is having trouble printing, see Chapter 5, "Solving Problems," on page 47.

Windows Clients

To enable printing by Windows users who submit jobs using SMB, make sure Windows services are running and that one or more print queues are available for SMB use.

All Windows computers—including Windows 95, Windows 98, Windows Millennium Edition (ME), and Windows XP—support SMB for using printers on the network. Windows 2000 and Windows NT also support LPR.

Note: Third-party LPR drivers are available for Windows computers that do not have built-in LPR support.

Troubleshooting

If a Windows client is having trouble printing, see Chapter 5, “Solving Problems,” on page 47.

UNIX Clients

UNIX computers support LPR for connecting to networked printers without the installation of additional software.

This chapter shows how to perform routine management tasks for print service after you have it up and running.

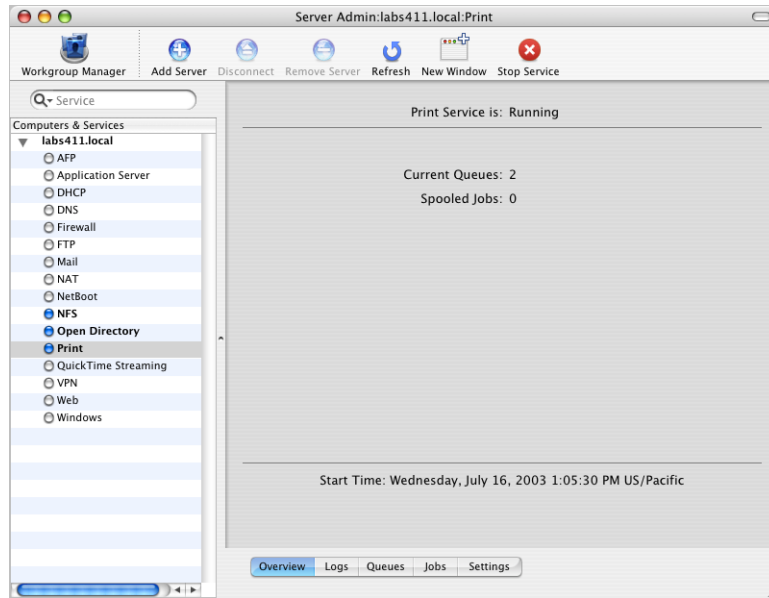
Typical, day-to-day management tasks include:

- Checking the status of print service
- Starting and stopping print service
- Viewing queues
- Stopping and restarting a queue
- Changing print queue settings
- Renaming a queue
- Changing the default LPR queue
- Deleting a queue
- Viewing print jobs
- Holding and releasing jobs
- Deleting jobs
- Suspending print quotas
- Viewing and managing service logs

Managing the Service

Checking the Status of Print Service

You can use Server Admin to monitor the Mac OS X server print service.



To check the status of print service:

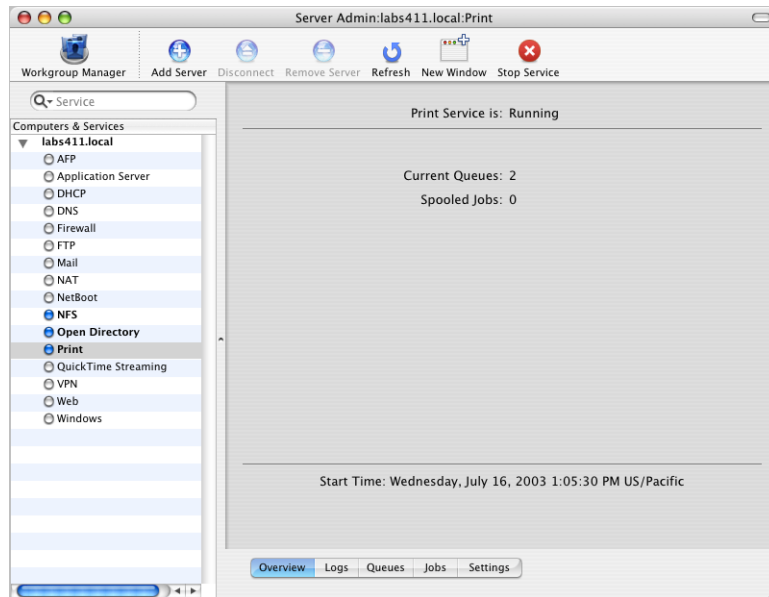
- 1 In Server Admin, locate the name of the server you want to monitor in the Computers & Services list and select Print in the list of services under the server name.
- 2 Click Overview to see if print service is running, the time it started if it is running, and the number of queues and waiting print jobs.
- 3 Click Logs, then choose a log from the Show pop-up menu to view its contents.
- 4 Click Queues to see the status of print queues.
- 5 Click Jobs to see a list of print jobs waiting in each queue.

From the Command Line

You can also check to see if print service is running using the `serveradmin` command in Terminal. For more information, see the print service chapter of the command-line administration guide.

Starting and Stopping Print Service

You can use Server Admin to start or stop print service.



To start or stop print service:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Start Service or Stop Service.

From the Command Line

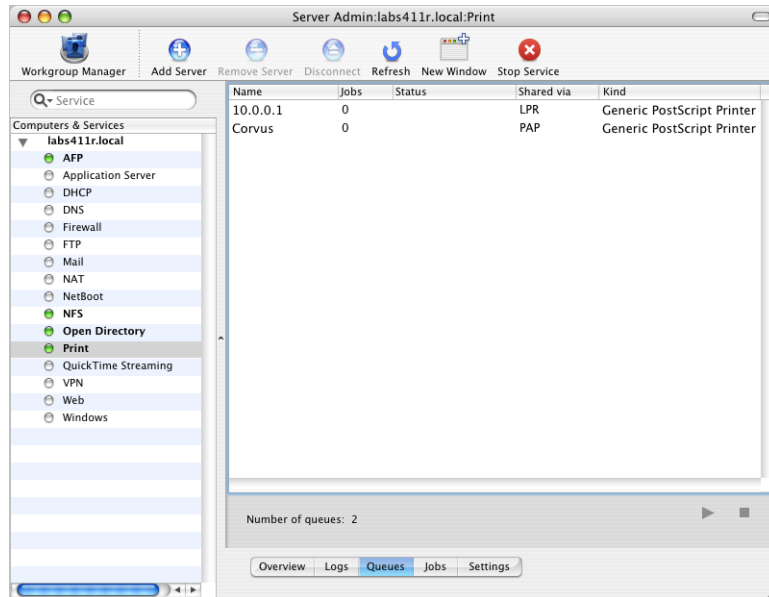
You can also start and stop print service using the `serveradmin` command in Terminal. For more information, see the print service chapter of the command-line administration guide.

Managing Print Queues

This section tells you how to perform day-to-day management of print queues.

Viewing Print Queue Status

You can use Server Admin to see the current status of print queues. The Queues pane shows all the server's print queues, listing the queue name and kind of printer, how the printer is shared, the status of printing from the queue, and how many jobs are waiting.



To view queue status:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Queues to see a list of print queues on the server.

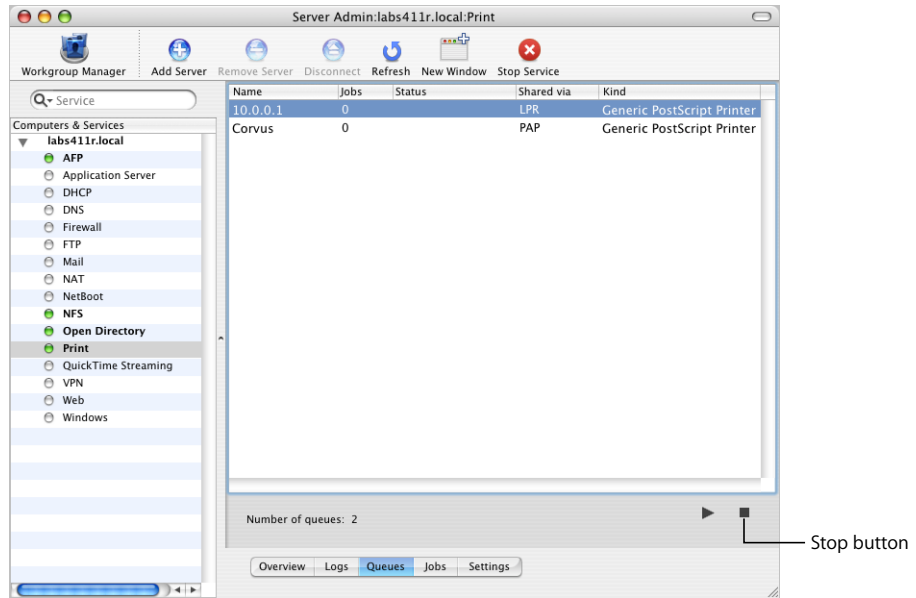
From the Command Line

You can also list the queues using the `serveradmin` command in Terminal. For more information, see the print service chapter of the command-line administration guide.

Stopping a Print Queue

To prevent waiting jobs from printing, you can use Server Admin to stop the queue that contains them.

New jobs continue to be added to the queue but do not print until you restart the queue. A job that is already printing is reprinted from the beginning when you restart the queue.

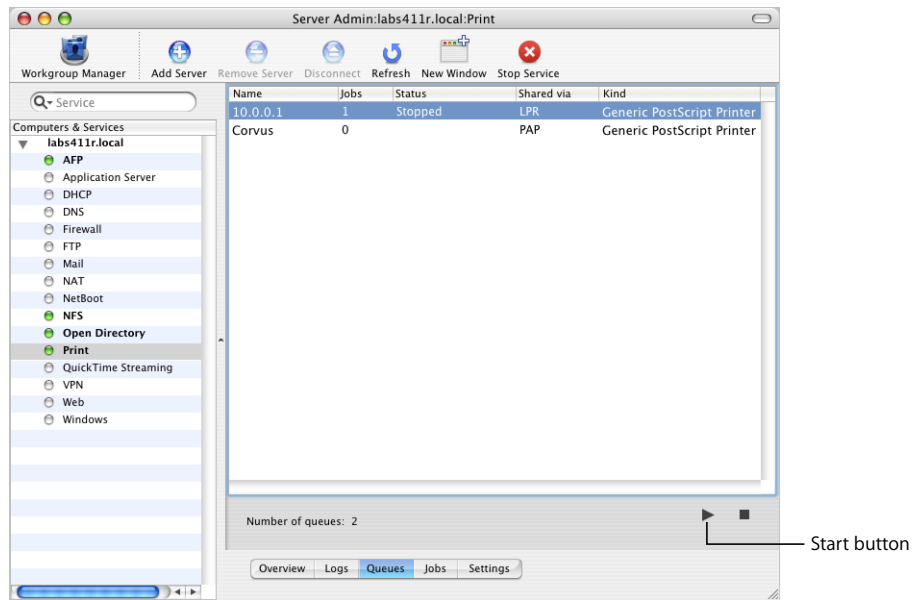


To stop a queue:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Queues to see a list of print queues on the server.
- 3 Select the queue you want to stop and click the Stop button (lower right).

Restarting a Print Queue

You can use Server Admin to restart a stopped queue and resume printing for all waiting jobs.



To restart a print queue:

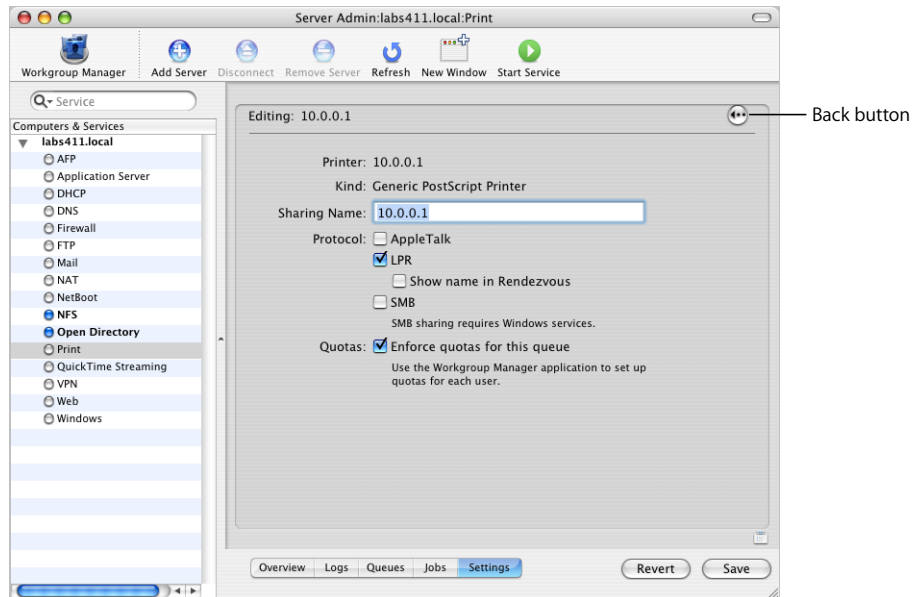
- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Queues to see a list of print queues on the server.
- 3 Select a stopped queue (look in the Status column) and click the Start button (lower right).

Individual jobs that are on hold will remain on hold. If a printing job was interrupted when you stopped the queue, that job will print again from the beginning.

Changing Print Queue Settings

You can use Server Admin to view and change a print queue's configuration.

Note: When you change a queue's configuration, the queue may become unavailable to users, and they may need to set up their computers to use the queue again.



To change a print queue's settings:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Settings, then click the Queues tab.
- 3 Select the print queue you want to change and click the Edit button (below the list).
- 4 Make changes, click Save, and then click the Back button (in the upper right).

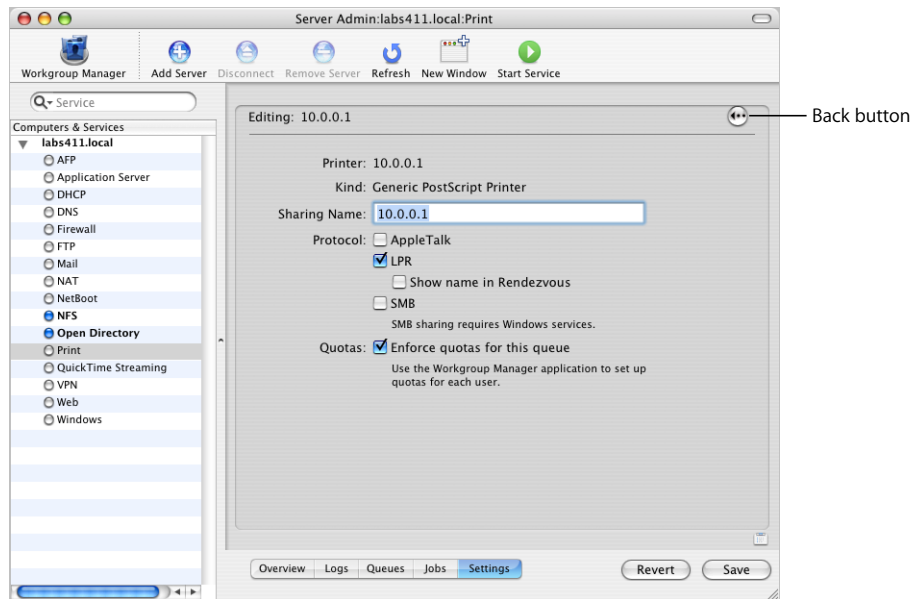
From the Command Line

You can also change queue settings using the `serveradmin` command in Terminal. For more information, see the print service chapter of the command-line administration guide.

Renaming a Print Queue

When you add a printer in Printer Setup Utility or Print Center, the default name of the new queue is the name of the associated printer. You can change this name to help your users choose the right printer or to comply with naming conventions imposed by the protocols your clients use.

Note: If you change the name of a print queue that has already been shared, users will need to set up their computers again to use the queue with its new name. New jobs that users send to the queue with the old name will not be printed.



To rename a queue:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Settings, then click Queues.
- 3 Select the print queue you want to change and click the Edit button (below the list).
- 4 Type a new name in the Sharing Name field.
- 5 Click Save, and then click the Back button (in the upper right).

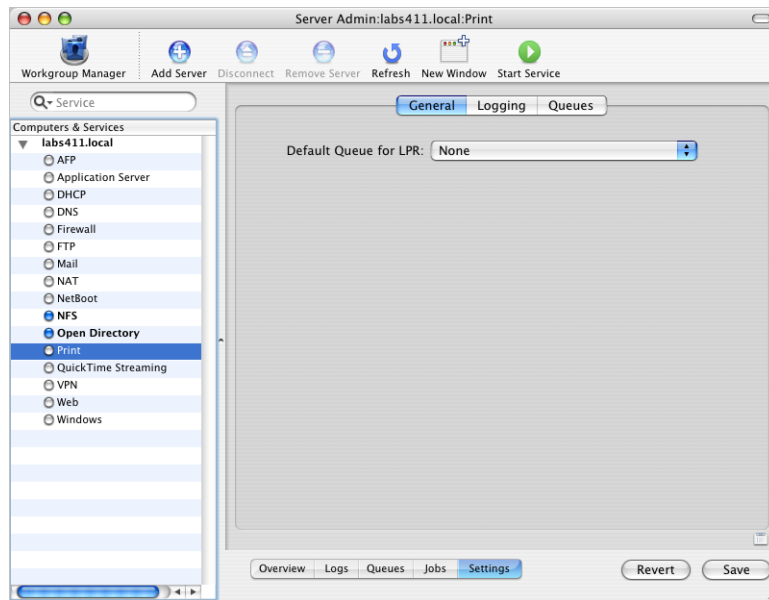
Changing the sharing name for the queue does not change its underlying Printer Setup Utility or Print Center queue name.

From the Command Line

You can also rename a queue using the `serveradmin` command in Terminal. See the print service chapter of the command-line administration guide.

Changing the Default LPR Print Queue

Specifying a default LPR queue simplifies setup for client computers. Users can choose to print to the default queue rather than having to enter the name of a specific queue.



To select a default print queue:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Settings.
- 3 In the General pane, choose the queue from the "Default Queue for LPR" pop-up menu.

If the queue you want to use is not listed, click Queues, double-click the queue in the list, and make sure LPR protocol is enabled.

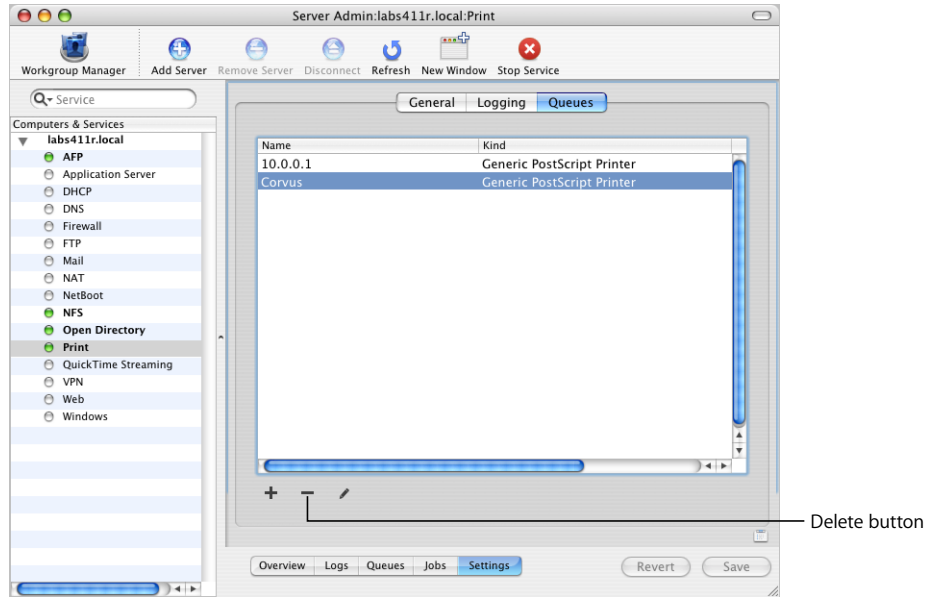
From the Command Line

You can also change the default LPR queue using the `serveradmin` command in Terminal. For more information, see the print service chapter of the command-line administration guide.

Deleting a Print Queue

When you delete a print queue, jobs in the queue are also deleted.

Note: If a job is printing, it is canceled immediately. To avoid interrupting waiting print jobs while preventing new jobs from arriving, you can disable the sharing protocols in the queue settings and wait until all jobs have finished printing before deleting the queue.



To delete a print queue:

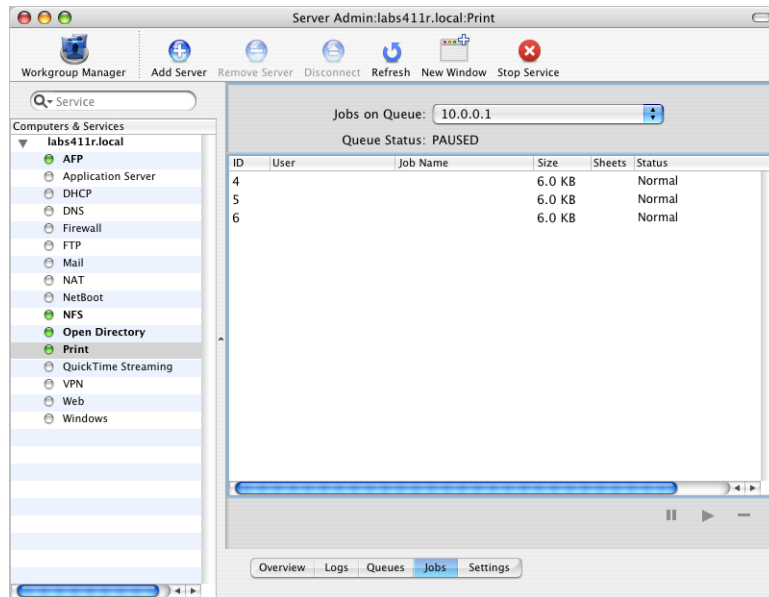
- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Settings, then click Queues.
- 3 Select the queue and click the Delete button (at the bottom of the list).

Managing Print Jobs

This section tells you how to perform day-to-day management of print jobs.

Monitoring a Print Job

You can monitor individual print jobs using Server Admin.



To view a print job:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Jobs.
- 3 Choose a queue from the “Jobs on Queue” pop-up menu.

Jobs are listed in priority order, and include the name of the user who submitted each job, the name of the job, its size, the number of sheets to be printed, the current status of the job, and the number of pages in the job (you might need to scroll to see the page column).

About Page and Sheet Counts

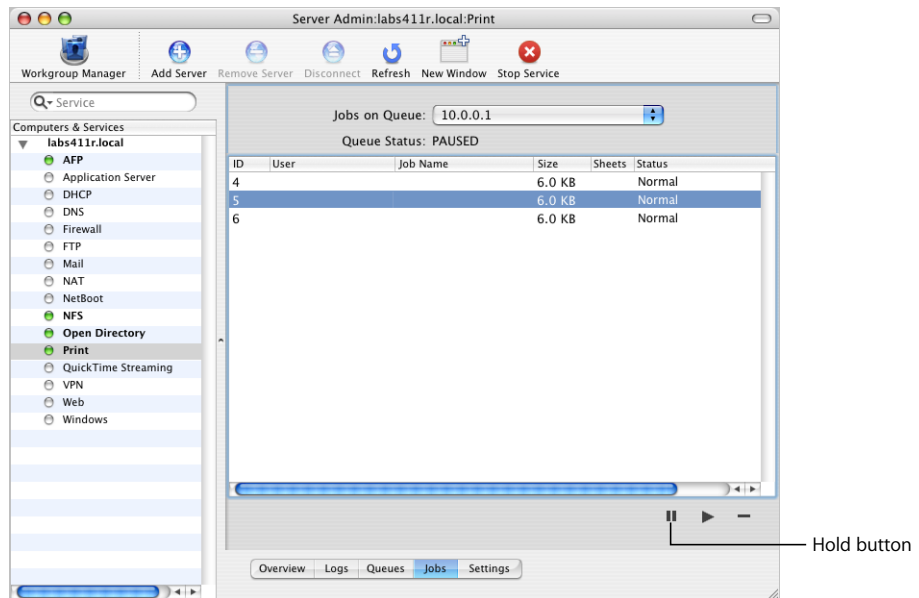
The *page* count is the number of pages created and spooled by an application. It is determined by the pagination performed by the application, and depends on application settings (such as margin or font size) and Page Setup settings (such as paper size). A user can choose to print more than one document page on a single sheet of paper, so the page count does not always indicate how much paper the job uses. For example, a 20-page document printed 2 pages per sheet uses only 10 sheets of paper.

The *sheet* count is the amount of printer paper used, and is used to enforce user print quotas. In the example in the preceding paragraph, the sheet count for a job containing a 20-page document was only 10 sheets.

Note: The sheet count is accurate for Macintosh clients printing from applications that do not generate their own Postscript code. Jobs created by other applications or computers might not contain the information needed to calculate an accurate sheet count.

Putting a Print Job on Hold

When you put a print job on hold, it is not printed until you take it off hold. If the job has already started to print, printing stops and the job remains in the queue. When you resume the job, printing restarts from the beginning of the job.



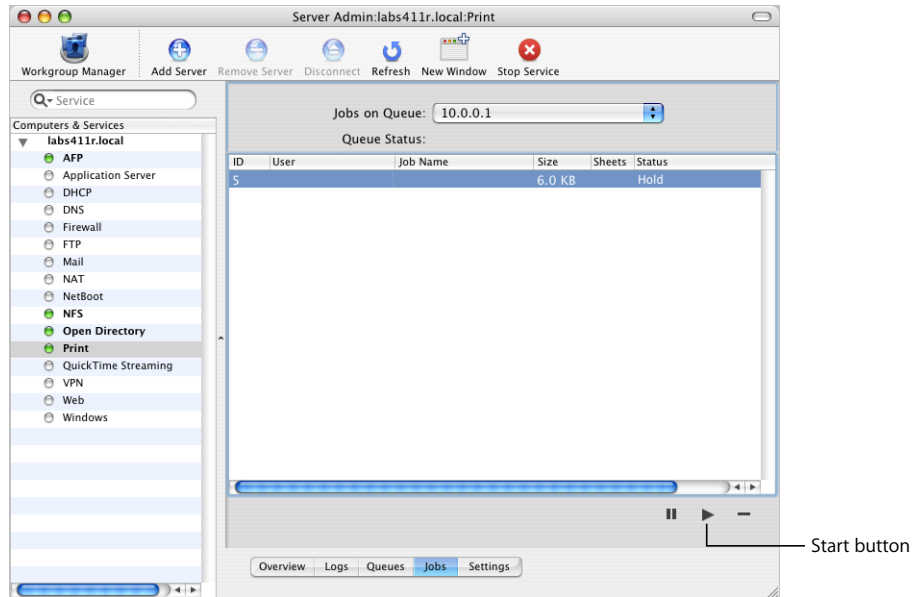
To put a print job on hold:

- 1 In Server Admin, select Print in the Computers & Services list.
 - 2 Click Jobs.
 - 3 Select the queue from the pop-up list.
 - 4 Select a job and click the Hold button (below the list).
- Shift-click or Command-click to select multiple jobs.

Releasing a Print Job

When a print job has been placed on hold, it is not printed until you resume the job. When you resume the job, printing restarts from the beginning.

Note: If you put the entire print queue on hold, you also need to restart the queue to print the job.



To restart a print job:

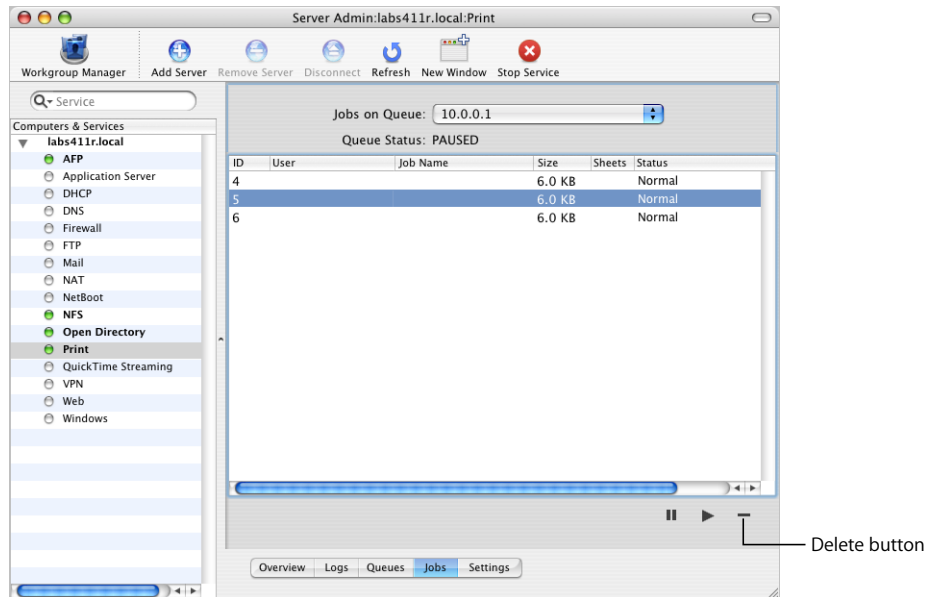
- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Jobs.
- 3 Select the queue from the pop-up menu.
- 4 Select the job and click the Start button (below the list).

Shift-click or Command-click to select multiple jobs.

The job is printed after all other jobs in the queue that have the same priority.

Deleting a Print Job

You can use Server Admin to delete a print job and prevent it from printing.



To delete a print job:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Jobs.
- 3 Select the queue from the pop-up list.
- 4 Select the job and click the Delete button (below the list).

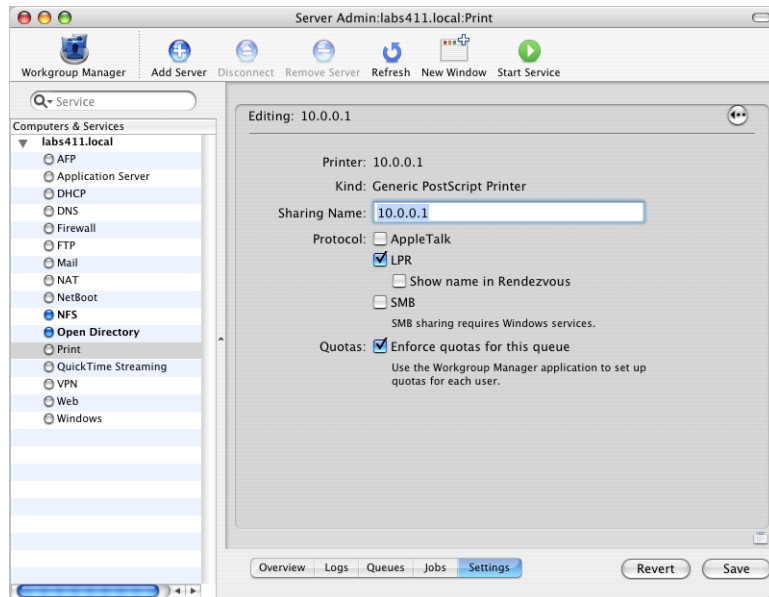
Any pages already sent to the printer will continue to print even after you delete the job.

Managing Print Quotas

This section tells you how to perform day-to-day management of print quotas.

Suspending Quotas for a Print Queue

You can use Server Admin to enforce and suspend print quotas for specific queues. Suspending quotas for a print queue allows all users unlimited printing to the queue.



To suspend quotas for a print queue:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Settings, then click Queues.
- 3 Select the print queue you want to change and click Edit.
- 4 Deselect "Enforce quotas for this queue."
- 5 Click Save, then click the Back button (in the upper right).

From the Command Line

You can also disable quotas using the `serveradmin` command in Terminal. For more information, see the print service chapter of the command-line administration guide.

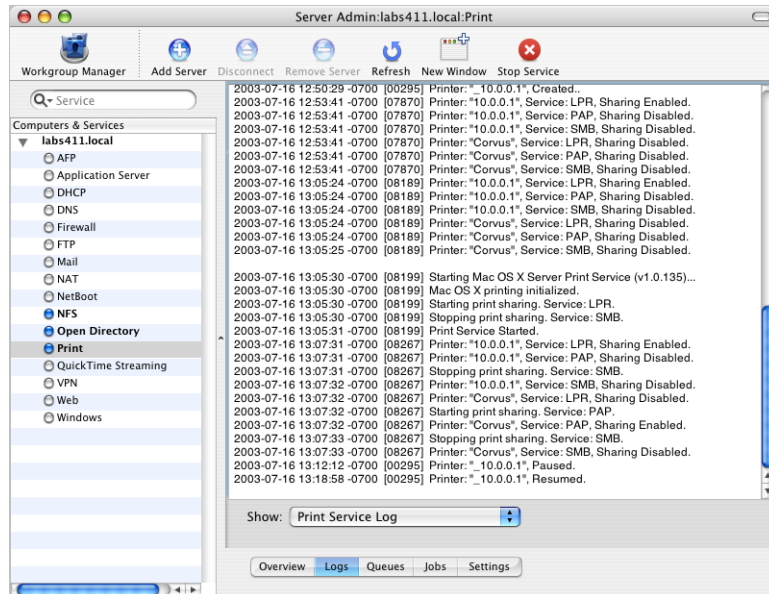
Managing Print Logs

This section tells you how to view and archive print service and queue logs.

Viewing Print Service and Queue Logs

Print service keeps two kinds of logs: a print service log and individual print queue logs. The print service log records events such as when print service is started and stopped and when a print queue is put on hold. Print queue logs record information such as which user submitted a job and the size of the jobs.

You can view the print service logs using Server Admin.



To view print service logs:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Logs, then choose a log from the Show pop-up menu.

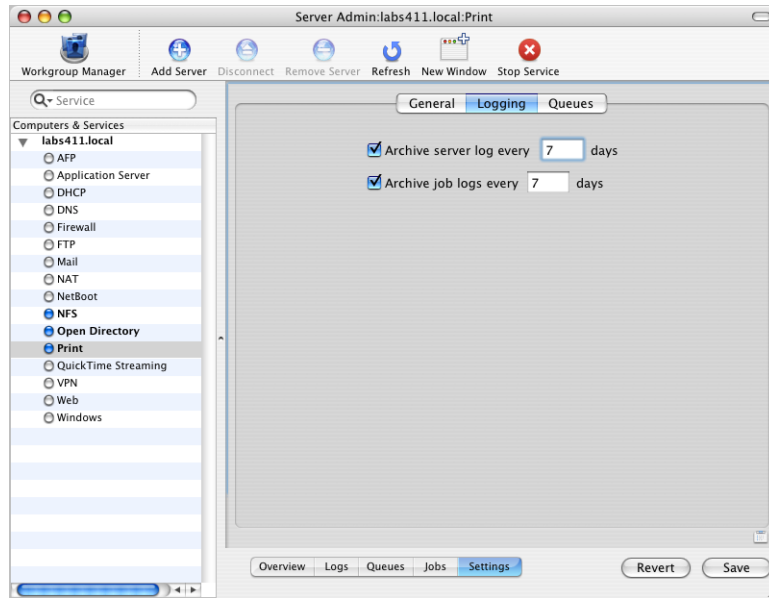
The logs are in `/Library/Logs/PrintService`. Job logs are named after their queues (for example, `PrintService.myqueue.job.log`). Archived logs have the archive date appended (for example, `PrintService.myqueue.job.log.20021231`).

From the Command Line

You can also view the logs by using the `cat` or `tail` command in Terminal. For more information, see the print service chapter of the command-line administration guide.

Archiving Print Service Logs

You can use Server Admin to specify how often the print service logs are archived and new logs started.



To specify how often to archive print logs:

- 1 In Server Admin, select Print in the Computers & Services list.
- 2 Click Settings, then click Logging.
- 3 Select “Archive server log every” and type the number of days after which you want to archive the log and start a new one.

The current service log file is named `PrintService.server.log`. Archived logs have the archive date appended (for example, `PrintService.server.log.20030731` for a file archived on July 31, 2002).

- 4 Select “Archive job logs every” and type the archive interval.

Archived job logs (and current logs) are in `/Library/Logs/PrintService`. The files are named after their queues (for example, `PrintService.myqueue.job.log`). Archived logs have the archive date appended (for example, `PrintService.myqueue.job.log.20021231`).

From the Command Line

You can also set the archive interval using the `serveradmin` command in Terminal. For more information, see the print service chapter of the command-line administration guide.

Deleting Archive Log Files

The print service log files are stored in `/Library/Logs/PrintService`. You can delete unwanted files as you would any other file using the Finder.

You can also use the log rolling scripts supplied with Mac OS X Server to reclaim disk space used by log files. For more information, see the print service chapter of the command-line administration guide.

From the Command Line

You can also delete archived log files using the `rm` command in Terminal. For more information, see the print service chapter of the command-line administration guide.

CUPS Logs

A separate set of log files is maintained by the underlying Common UNIX Print Service (CUPS) used by print service. These logs are stored in `/var/log/cups`.

Troubleshooting Print Service

Try these suggestions to solve or avoid printing problems you or your users encounter while using print service.

Print Service Doesn't Start

- Verify that the server's software serial number is entered correctly and has not expired. To check the number, open Server Admin, select the server in the Computers & Services list, and click Overview. To enter an updated serial number, click Settings.
- Check the print service log for problem indications. Open Server Admin, select Print in the Computers & Services list, and click Logs.

Clients Can't Add Queue

- Make sure that print service is running. Open Server Admin and select Print in the Computers & Services list. If the service is not running, click Start Service.
- Verify that the queue is shared correctly. SMB is for Windows users only. LPR is a standard protocol that users on (some) Windows computers, as well as on Macintosh, UNIX, and other computers, can use for printing.

Users Can't Print

- Make sure that print service is running. Open Server Admin and select Print in the Computers & Services list. If the service is not running, click Start Service.
- Make sure the queue has been added. On Mac OS 8 or Mac OS 9 computers, use the Chooser (for AppleTalk print queues) or Desktop Printer Utility (for LPR print queues) to make sure the printer setup is correct. On Mac OS X, use Printer Setup Utility or Print Center to add print queues to the printer list.
- Verify that Mac OS clients have TCP/IP set up correctly.
- If Windows NT 4.x clients can't print to the server, make sure that the queue name is not the TCP/IP address of the printer or server. Use the DNS host name instead of the printer or server address or, if there is no DNS name, enter a queue name containing only letters and numbers.

Jobs in a Server Queue Don't Print

- Make sure that neither the queue nor the jobs in it are on hold. Open Server Admin, select Print in the Computers & Services list, and click Queues and Jobs.

- Make sure that the printer is connected to the server or to the network to which the server is connected.
- Make sure the printer is turned on and that there are no problems with the printer itself (out of paper, paper jams, and so on).
- Review the print logs for additional information. Open Server Admin, select Print in the Computers & Services list, and click Logs.

Print Queue Becomes Unavailable

- If you changed a print queue name that has already been shared, print jobs sent by users to the old queue name will not be printed. Users need to set up their computers again to use the queue with its new name.

CUPS (Common UNIX Printing System) A cross-platform printing facility based on the Internet Printing Protocol (IPP). The Mac OS X Print Center, its underlying print system, and the Mac OS X Server print service are all based on CUPS. For more information, visit www.cups.org.

IPP (Internet Printing Protocol) A client-server protocol for printing over the Internet. The Mac OS X printing infrastructure and the Mac OS X Server print service that is built on it support IPP.

LPR (Line Printer Remote) A standard protocol for printing over TCP/IP.

PPD (Postscript Printer Description) file A file that contains information about the capabilities of a particular printer model. The PPD file provides the controls you need to take advantage of special features such as multiple paper trays, special paper sizes, or duplex printing. The printer model you choose when you add a printer specifies the PPD file used with the printer.

print queue An orderly waiting area where print jobs wait until a printer is available. The print service in Mac OS X Server uses print queues on the server to facilitate management.

queue An orderly waiting area where items wait for some type of attention from the system. See also *print queue*.

Rendezvous A protocol developed by Apple for automatic discovery of computers, devices, and services on IP networks. This proposed Internet standard protocol is sometimes referred to as “ZeroConf” or “multicast DNS.” For more information, visit www.apple.com or www.zeroconf.org.

SMB (Server Message Block) A protocol that allows client computers to access files and network services. It can be used over TCP/IP, the Internet, and other network protocols. Windows services use SMB to provide access to servers, printers, and other network resources.

USB (Universal Serial Bus) A standard for communicating between a computer and external peripherals using an inexpensive direct-connect cable.

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