



Apple

LaserWriter 16/600 PS

Setting Up, Connecting, and Using Your Printer

 Apple Computer, Inc.

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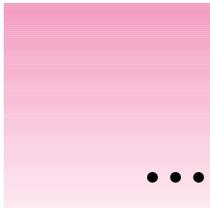
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Communications regulation information

FCC statement

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. See instructions if interference to radio or television reception is suspected.

Radio and television interference

The equipment described in this manual generates, uses, and can radiate radio-frequency energy. If it is not installed and used properly—that is, in strict accordance with Apple’s instructions—it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

You can determine whether your computer system is causing interference by turning it off. If the interference stops, it was probably caused by the computer or one of the peripheral devices.

If your computer system does cause interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the computer to one side or the other of the television or radio.
- Move the computer farther away from the television or radio.
- Plug the computer into an outlet that is on a different circuit from the television or radio.
(That is, make certain the computer and the television or radio are on circuits controlled by different circuit breakers or fuses.)

If necessary, consult an Apple-authorized service provider or Apple. See the service and support information that came with your Apple product. Or, consult an experienced radio/television technician for additional suggestions. You may find the following booklet helpful: *Interference Handbook* (stock number 004-000-00493-1). This booklet, prepared by the Federal Communications Commission, is available from the U.S. Government Printing Office, Washington, DC 20402.

IMPORTANT Changes or modifications to this product not authorized by Apple Computer, Inc., could void the FCC Certification and negate your authority to operate the product.

This product was tested for FCC compliance under conditions that included the use of Apple peripheral devices and Apple shielded cables and connectors between system components. It is important that you use Apple peripheral devices and shielded cables and connectors between system components to reduce the possibility of causing interference to radios, television sets, and other electronic devices. You can obtain Apple peripheral devices and the proper shielded cables and connectors through an Apple-authorized dealer. For non-Apple peripheral devices, contact the manufacturer or dealer for assistance.

DOC statement

DOC Class B Compliance This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled “Digital Apparatus,” ICES-003 of the Department of Communications.

Observation des normes—Classe B Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur : “Appareils Numériques”, NMB-003 édictée par le ministre des Communications.

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Laser information

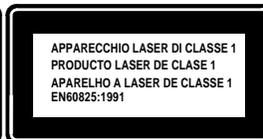
WARNING Making adjustments or performing procedures other than those specified in your equipment’s manual may result in hazardous exposure.

WARNING Do not attempt to disassemble the cabinet containing the laser. The laser beam used in this product is harmful to the eyes. The use of optical instruments, such as magnifying lenses, with this product increases the potential hazard to your eyes. For your safety, have this equipment serviced only by an Apple-authorized service provider.

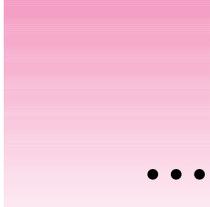
Your printer is a Class 1 laser product. The Class 1 label, located at the back of the printer, indicates that the printer meets minimum safety requirements. A service warning label is located inside the printer.



Class 1 label



Service warning label



How Much of This Book Do I Have to Read?



This book contains all the information you need for the LaserWriter 16/600 PS printer, whether you're the printer administrator who sets it up or a user who wants to print some transparencies for a meeting.

Printer administrators and users: Who does what

The LaserWriter 16/600 PS is usually set up and maintained by a printer administrator and shared by a number of users. This book is organized accordingly: Part I contains setup information for the printer administrator and Part II contains setup and usage information for users.

Depending on the type of problem, troubleshooting (Part III) can be handled by the administrator or by users. The appendixes in Part IV contain additional information that administrators and users might need.

Hint: It's a good idea to keep this book near the printer so that everyone has access to it when they need it.

What the printer administrator should know

The printer administrator sets up the hardware, installs any options, installs the printer on the network, and helps new users get started. To accomplish these tasks, printer administrators must:

- be familiar with their network connections and topology
- have access to and knowledge of the special tools required by their networks:
 - for the AppleTalk network, no special tools required
 - for Novell NetWare, administrative privileges and familiarity with programs like PCONSOLE
 - for TCP/IP networks with UNIX[®] workstations, superuser privileges and knowledge of their UNIX system's printing architecture

Getting new users started

In almost every case—regardless of the operating system—the printer administrator is responsible for initial setup of the hardware and the network. There is a great variety, however, in how different groups get new users started. Here are the assumptions this book makes:

- **Macintosh and Windows users** install their own printer software.
- **UNIX users** have their workstations prepared for printing by the printer administrator.



Which chapters should I read?

The sections that follow explain which chapters you should read in various circumstances.

“We just got the printer, and my job is to set it up for my workgroup.”

There are five main steps to take a boxed-up printer and prepare it so any user can print on it. Although you could do some of the steps in a different order, these steps are organized to simplify troubleshooting.

Step 1: Set up the hardware and connect the printer.

Chapter 1 explains how to unpack the printer, install the toner cartridge, load paper, and connect the printer to your network. At the end of the chapter, you turn on the printer and it prints a startup page, assuring you that the printer engine and circuit board work correctly.

Step 2: Set up the printer for a network connection or for a direct connection.

The next three chapters (plus Appendix B) explain how to set up the printer on different networks or by a direct connection:

Chapter	Computer	Network interface and cable
Chapter 2	Macintosh	AppleTalk on LocalTalk cables
		AppleTalk on Ethernet cables (EtherTalk)
Chapter 3	DOS and Windows	Novell NetWare on Ethernet cables
	DOS and Windows	Direct connection by a parallel cable
Chapter 4	UNIX	TCP/IP on Ethernet cables
Appendix B	Macintosh	ATPS, NetWare for Macintosh on LocalTalk or Ethernet cables

Step 3: Configure the printer.

The administrative tools provided with the LaserWriter 16/600 PS are summarized in Appendix A and described in detail in Chapters 2, 3, and 4:

Chapter	Computer	Utility name
Chapter 2	Macintosh	Apple Printer Utility
Chapter 3	Windows	LaserWriter Utility for Windows
	DOS	LWPMAN
	DOS	LWFORM
Chapter 4	UNIX	TCP/IP Printer Configuration Utility

Though the Apple Printer Utility runs on Macintosh computers and the LaserWriter Utility for Windows runs on Windows computers, both utilities can be used to configure the printer in ways that affect all users. For example, both utilities can be used to set the print density for all users.

Step 4: Add any hardware options.

Chapter 5 explains how to add any of the hardware options you may have purchased for the printer, including

- the fax card, for sending and receiving faxes
- internal or external hard disks, for storing Macintosh and Windows downloadable fonts
- extra memory, for printing documents that contain many fonts more quickly
- paper-handling options, such as the envelope feeder, the 500-sheet feeder, or the 250-sheet universal paper cassette

Step 5: Help new users get started.

Part II of the manual contains information for people who plan to use (as opposed to administer) the printer. Information about the administrator's responsibilities is in Part I.

User's computer	Where to find information
Macintosh	Chapter 2 explains the administrator's responsibilities. Chapter 6 explains how the user gets started and how to print. Chapter 9 explains how to load paper. Chapter 10 explains how to change toner cartridges. Chapters 11 and 12 explain how to fix problems with the printer.
Windows or DOS	Chapter 3 explains the administrator's responsibilities. Chapter 7 explains how the user gets started and how to print. Chapter 9 explains how to load paper. Chapter 10 explains how to change toner cartridges. Chapters 11 and 12 explain how to fix problems with the printer.
UNIX	Chapter 4 explains the administrator's responsibilities. Chapter 8 explains how the user gets started and how to print. Chapter 9 explains how to load paper. Chapter 10 explains how to change toner cartridges. Chapters 11 and 12 explain how to fix problems with the printer.

“The printer's already set up. How do I configure it?”

See “Step 3: Configure the Printer,” earlier in this Preface.

“Someone new wants to start using the printer.”

See “Step 5: Help New Users Get Started,” earlier in this Preface.

“Something's not working right.”

For paper and image problems, see Chapter 11.

For other problems, see Chapter 12.

Guide for Printer Administrators

Chapter 1 Setting Up the LaserWriter 16/600 PS

Chapter 2 Setting Up the Printer for Macintosh Users

Chapter 3 Setting Up the Printer for Windows and DOS Users

Chapter 4 Setting Up the Printer for UNIX Users

Chapter 5 Installing Options

Part I of this book provides the information you need to set up the printer for your workgroup.

If you want to use a printer that has already been set up, see Part II.



part

1

Setting Up the LaserWriter 16/600 PS



This chapter explains how to unpack and set up the LaserWriter 16/600 PS.

Main features of the LaserWriter 16/600 PS

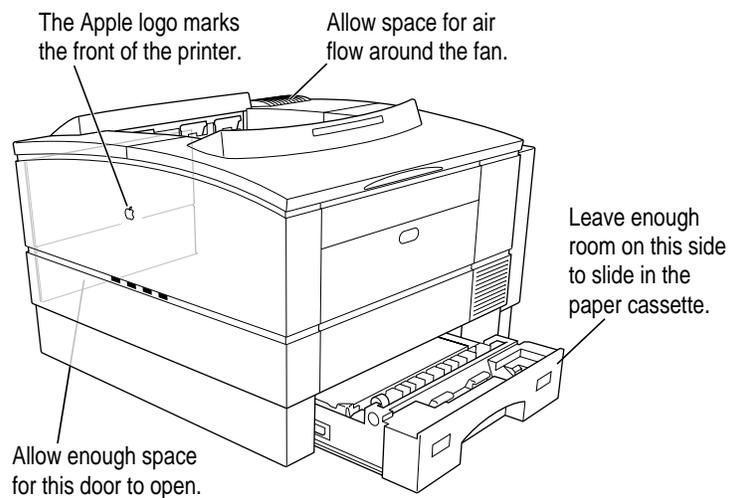
- **Print quality** The printer has a resolution of 600 dots per inch. Its FinePrint feature smoothes text, and its PhotoGrade feature (available with additional printer memory) improves graphic images.
- **Speed** The printer prints up to 17 pages per minute.
- **Multiplatform support** You can connect the printer to Macintosh, Windows, and UNIX computers.
- **Connectivity** The printer offers LocalTalk, Ethernet, and parallel connections.
- **Automatic traffic control** Without any manual intervention, the printer can accept jobs simultaneously from AppleTalk, TCP/IP, and NetWare networks and from the parallel port, automatically switching between PostScript and PCL5 printer languages.
- **Fonts** The printer supports both TrueType and PostScript fonts. The printer has 35 built-in PostScript™ fonts.
- **Energy savings** The printer can automatically lower its power consumption when it's not being used.
- **Fax card option** With the fax card, you can use the printer to send and receive Group III and PostScript faxes.

- **Hard disk option** You can install an internal hard disk or attach up to six external hard disks to store downloadable fonts.
- **Flexible paper handling** In the standard configuration, you can print up to 350 sheets without changing paper. You can easily add a 500-sheet feeder and a 75-envelope feeder.

Choosing a place for the printer

Choose a flat, stable area with adequate room around the printer. The area should be well ventilated and away from direct sunlight or sources of heat, cold, or humidity. Don't use ammonia-based cleaners, which can react chemically with the toner, on or around the printer.

IMPORTANT See “Unpacking the Printer,” later in this chapter, for advice about lifting the printer.



See Appendix C, “Technical Information,” for more information about the physical requirements of the printer.

Important safety instructions

Before you plug in your LaserWriter 16/600 PS, read these important safety instructions.

WARNING This equipment is intended to be electrically grounded. Your printer is equipped with a three-wire grounding plug—a plug that has a third (grounding) pin. This plug will fit only a grounded AC outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact a licensed electrician to replace the outlet with a properly grounded outlet. Do not defeat the purpose of the grounding plug!

For your own safety and that of your equipment, always take the following precautions.

Disconnect the power plug (by pulling the plug, not the cord) if any of the following conditions exists:

- the power cord or plug becomes frayed or otherwise damaged
- you spill something into the case
- your printer is exposed to rain or any other excess moisture
- your printer has been dropped or the case has been otherwise damaged
- you suspect that your printer needs service or repair
- you want to clean the case (use only the recommended procedure described in Chapter 10)

Be sure that you always do the following:

- Keep your printer away from sources of liquids, such as wash basins, bathtubs, shower stalls, and so on.
- Protect your printer from dampness or wet weather, such as rain, snow, and so on.
- Read all the installation instructions carefully before you plug your printer into a wall socket.
- Keep these instructions handy for reference by you and others.
- Follow all instructions and warnings dealing with your system.

WARNING Electrical equipment may be hazardous if misused. Operation of this product, or similar products, must always be supervised by an adult. Do not allow children access to the interior of any electrical product and do not permit them to handle any cables.

Unpacking the printer

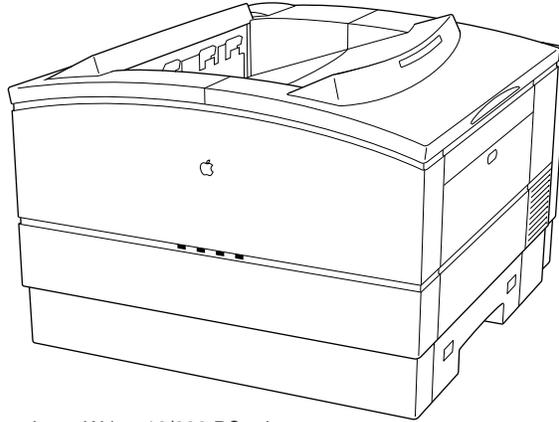
IMPORTANT The printer weighs approximately 40 pounds (approximately 18 kilograms). Don't lift it by yourself.

- 1 With another person, lift the printer out of the box by grabbing the plastic bag it's inside.

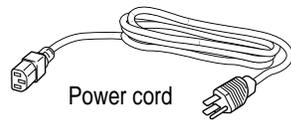


- 2 Remove the printer from the plastic bag.

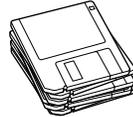
3 Make sure you have everything shown here:



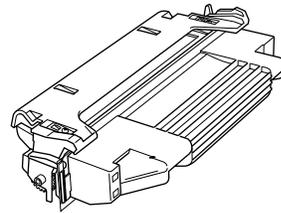
LaserWriter 16/600 PS printer



Power cord



Macintosh and
Windows disks



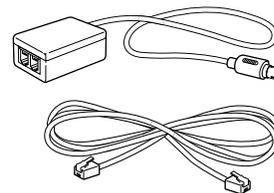
Toner cartridge

4 You also need to obtain whatever cables your networks require.

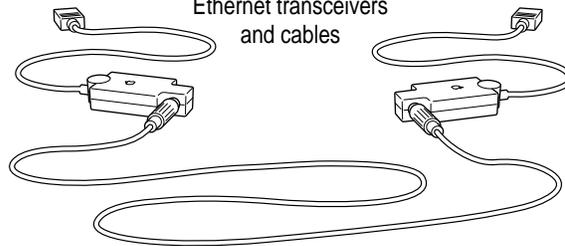
Parallel interface cable



LocalTalk connecting kit

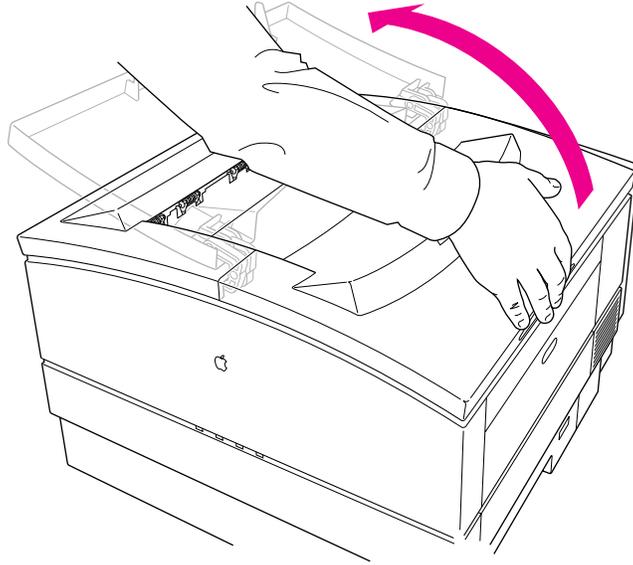


Ethernet transceivers
and cables



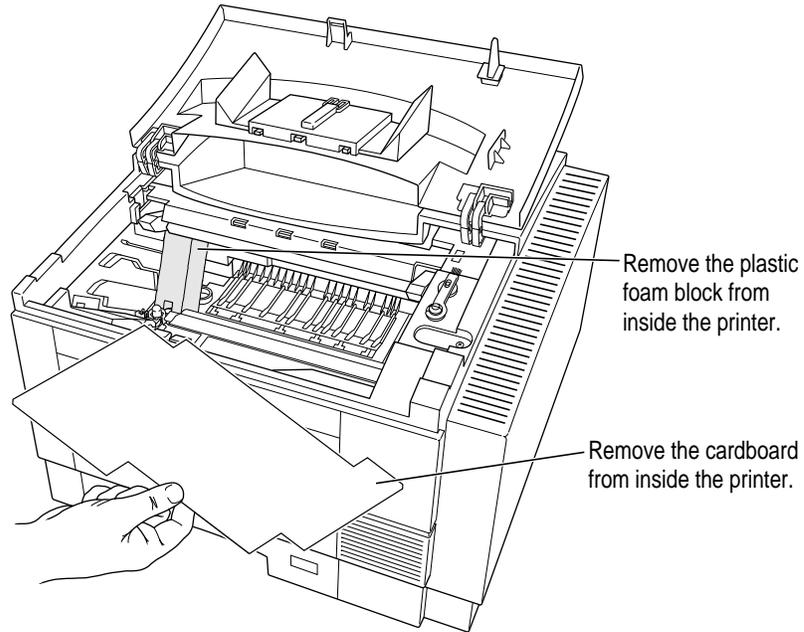
Your cables may look different from those shown here.

- 5 Pull the packing tape from the printer's cassette trays, top cover, and doors.
- 6 Pull open the printer's top cover.



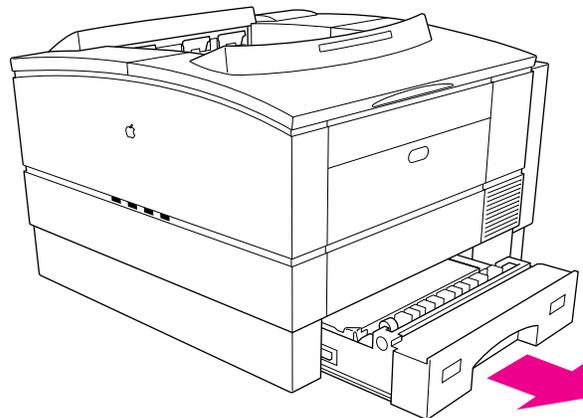
7 Remove the cardboard panel and plastic foam block from inside the printer.

Save all the packing materials. They provide the best protection for the printer if you ever need to move it.



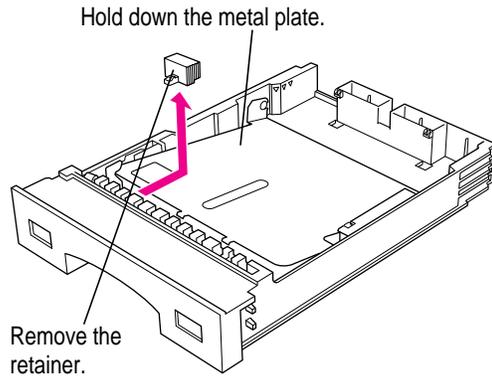
8 Close the printer's top cover.

9 Remove the cassette from the printer.

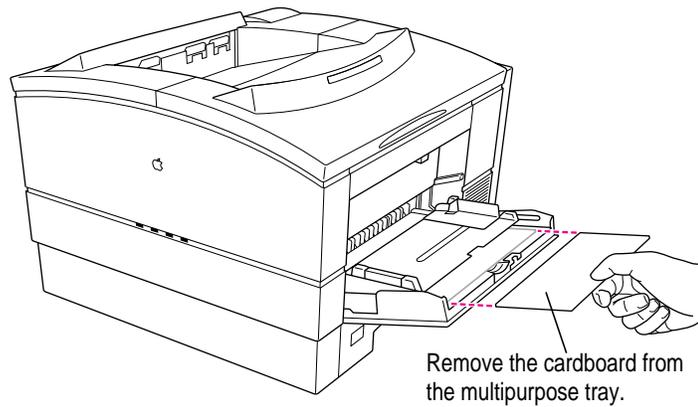


- 10 Remove any tape from inside the cassette, and remove the small orange block holding down the paper lift plate.**

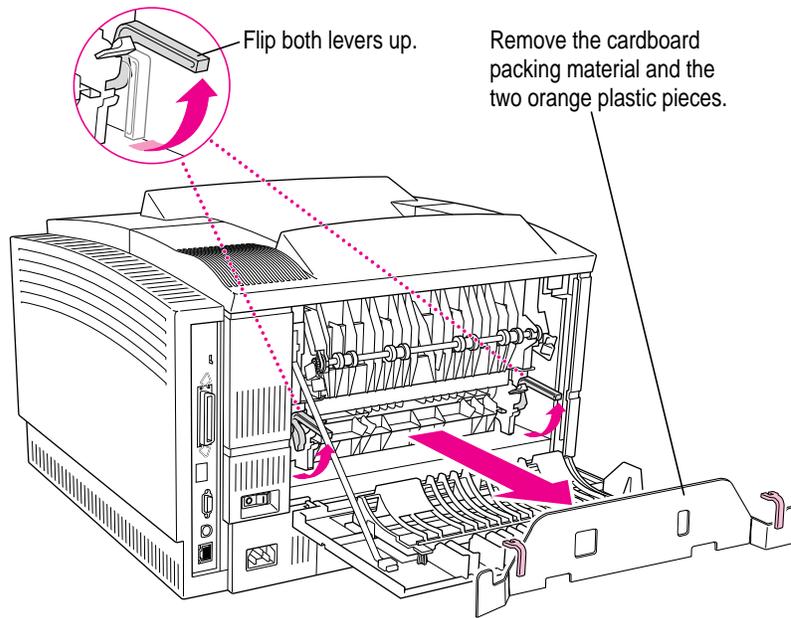
Discard the tape and save the small orange block.



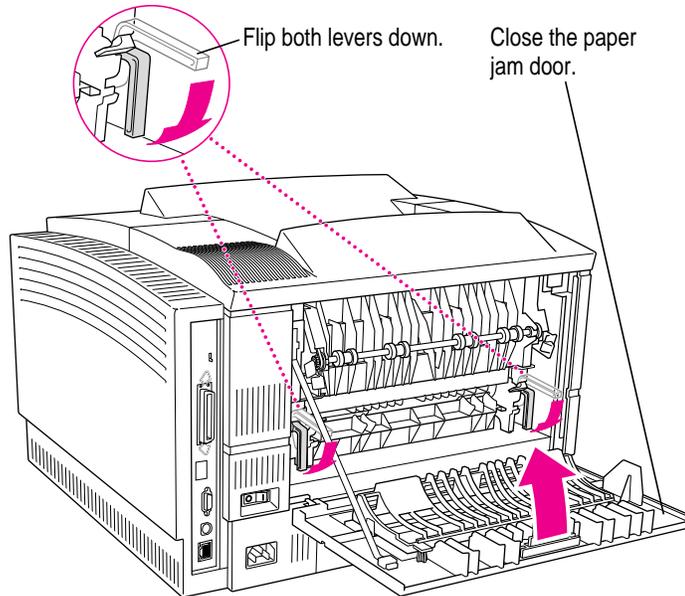
- 11 Slide the paper cassette back into the printer.**
- 12 Open the multipurpose tray and remove the cardboard packing material.**



- 13** Open the paper jam door on the left side of the printer, flip both large green levers up, remove the orange plastic pieces, and remove the cardboard.



- 14** Lower both large green levers again and close the paper jam door.



IMPORTANT Do not plug in the printer or turn it on until you've completed all the network connections, as explained later in this chapter.

Wait to install the LaserWriter 16/600 PS options

If you purchased any of the following options, wait to install them until you've connected the printer to your network:

- fax card
- internal or external hard disks
- memory
- paper and envelope feeders

By waiting, you can ensure the printer is working correctly (thus simplifying troubleshooting) and take advantage of the network connections to configure the options.

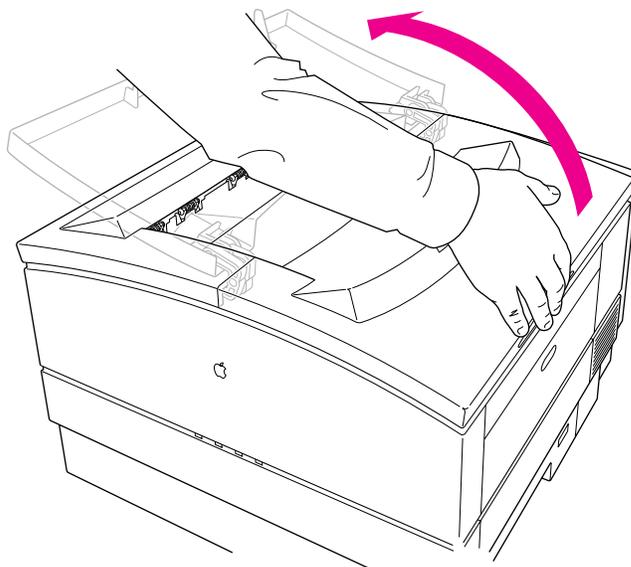
Installing the first toner cartridge

The toner cartridge contains the dry plastic powder that the printer uses instead of ink. The first time you install a toner cartridge, follow the steps given here. After that, each time you install a cartridge, follow the instructions in Chapter 10.

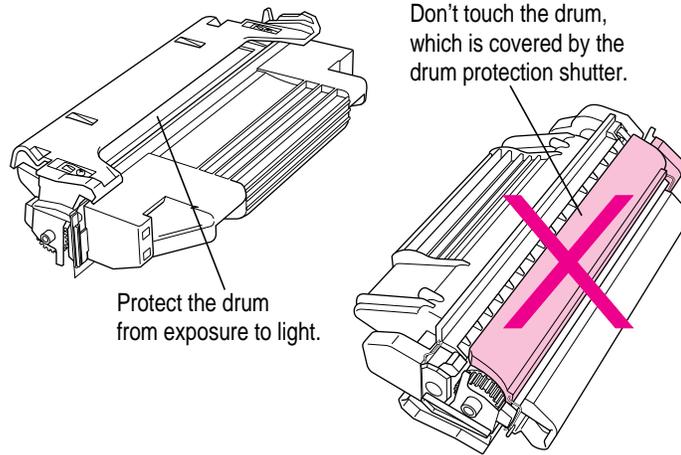
Each cartridge lasts approximately 6,000 pages, depending on the kind of printing you do. If you use the printer to produce more graphic images than text, you may need to change cartridges more often.

WARNING Use only cartridges designed for use with your LaserWriter 16/600 PS printer. Other cartridges may not fit, or may impair the printer's ability to produce high-quality images.

- 1 Pull open the top cover of the printer.

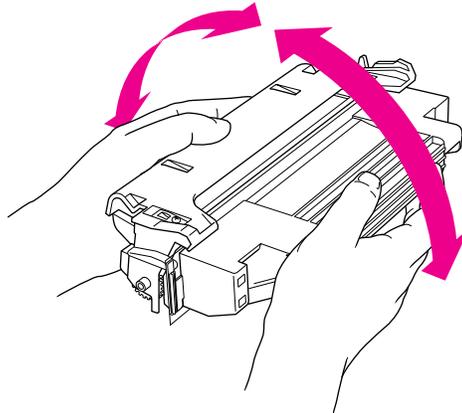


2 Take the cartridge out of its packaging.

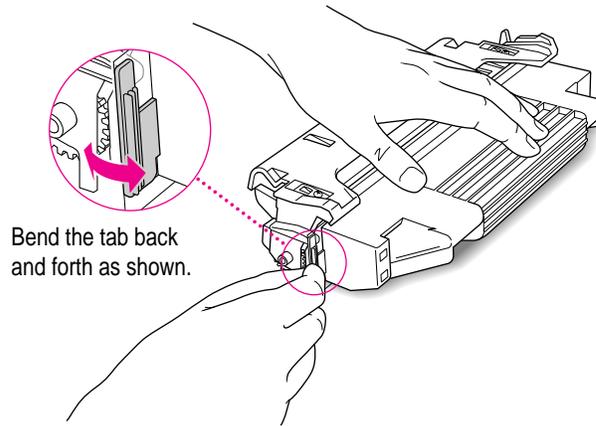


3 Distribute the toner powder.

Gently rock the toner cartridge as shown.

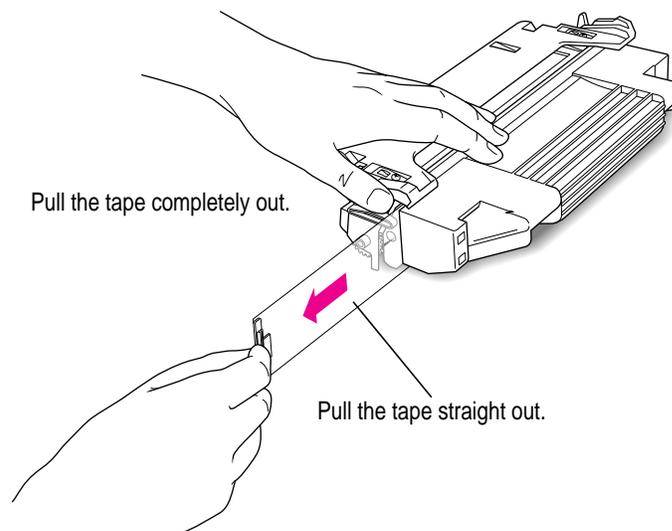


- 4 Bend the flat tab on the side of the cartridge back and forth until it separates from the cartridge.

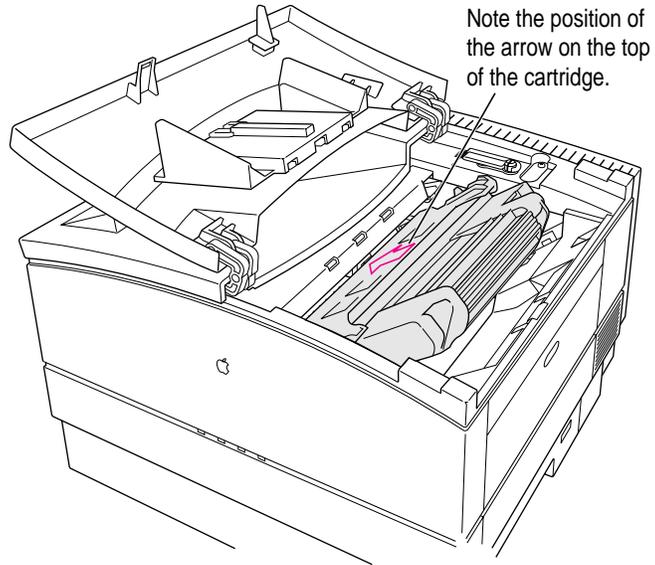


- 5 Firmly pull the tab directly away from the cartridge to remove the sealing tape.

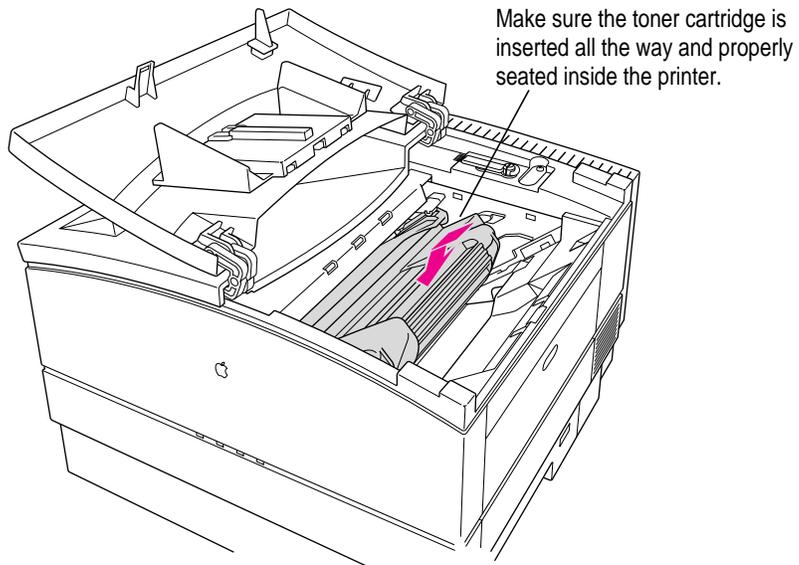
WARNING Pull the tab straight out of the cartridge. Don't pull too quickly or at an angle that might damage the seals on the cartridge.



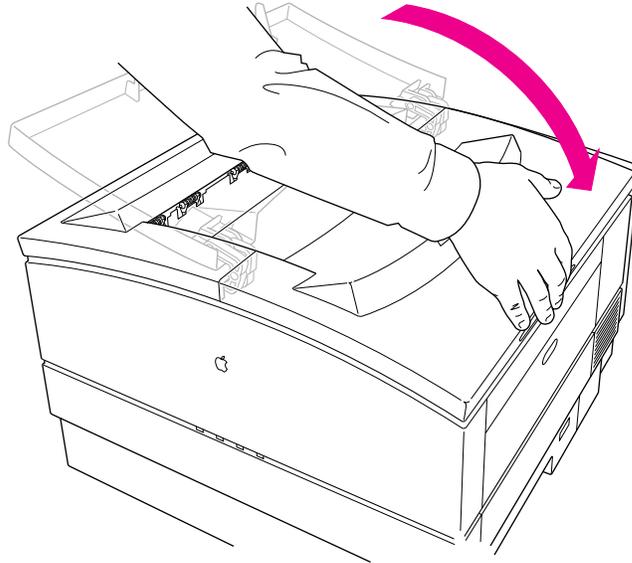
- 6** Insert the cartridge into the printer as far as it will go.



- 7** Push downward gently to snap the cartridge into its locked position.

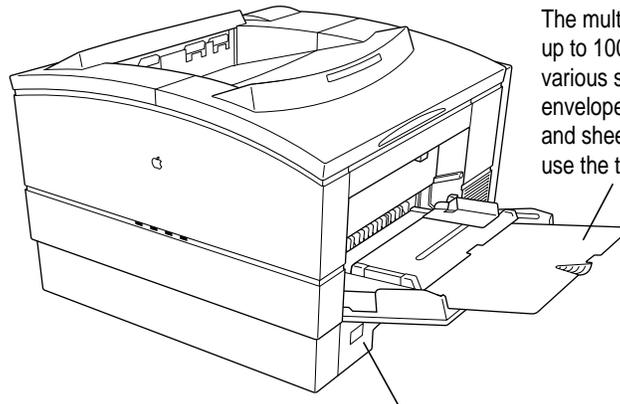


- 8** Close the printer. The top cover clicks into place.



Loading paper into the cassette and multipurpose tray

You can load paper into the paper cassette or the multipurpose tray, or both.



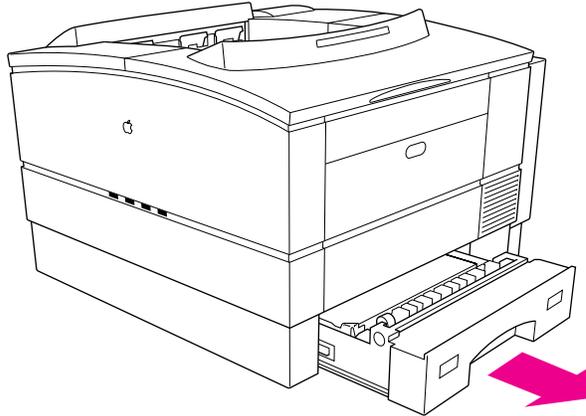
The multipurpose tray can hold up to 100 sheets of paper of various sizes, as well as envelopes, transparencies, and sheets of labels. You can also use the tray for manual feed jobs.

The paper cassette can hold up to 250 sheets of paper—either U.S. letter-size or A4, depending on which cassette you have. With the optional universal cassette, you can also load B5 or legal-size paper.

You can expect excellent printing results from photocopier paper. Use paper labeled “laser-quality” for best results.

Loading the paper cassette

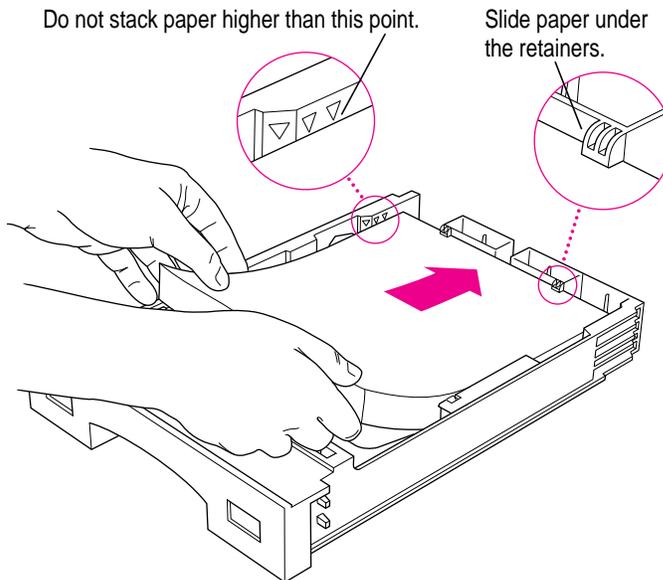
- 1 Slide the paper cassette out of the printer.



- 2 Prepare a stack of paper.

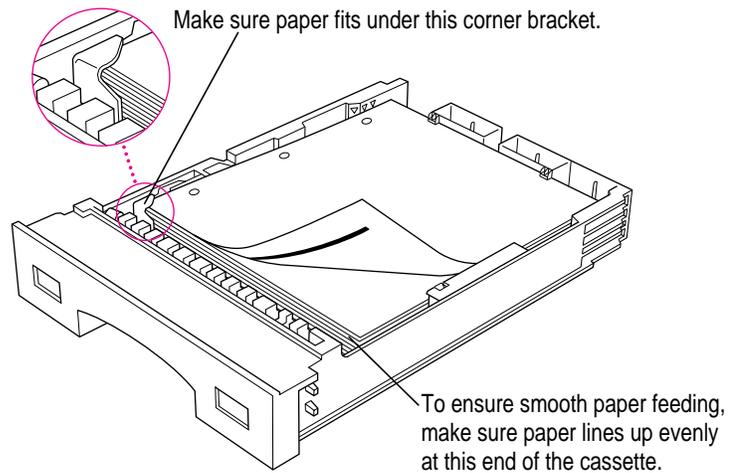
You can load up to 250 sheets of 20-pound photocopier paper. Make sure the edges are even on all sides before inserting the stack of paper.

- 3 Slide the stack into the cassette.



4 Slide the paper beneath the bracket at the front of the cassette.

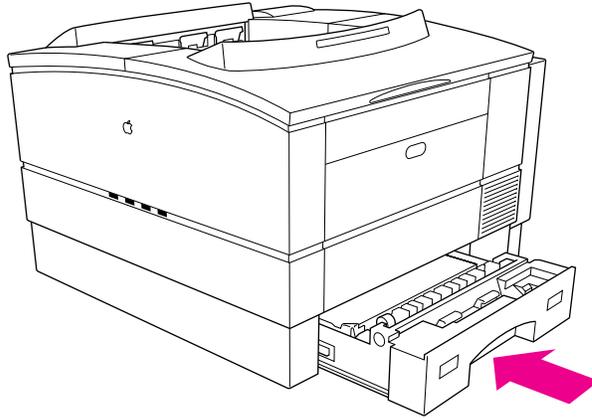
Push the paper down if necessary, but don't overload the cassette, or the paper may jam when you print.



Load three-hole punched paper face down, with the holes toward the left side of the cassette. Load letterhead paper face down, with the tops of the pages at the front of the cassette (the handle end).

WARNING Never try to load a cassette with paper of the wrong size. Doing so could cause a paper jam, damage the printer drum, or waste toner.

- 5 Slide the cassette into the printer.



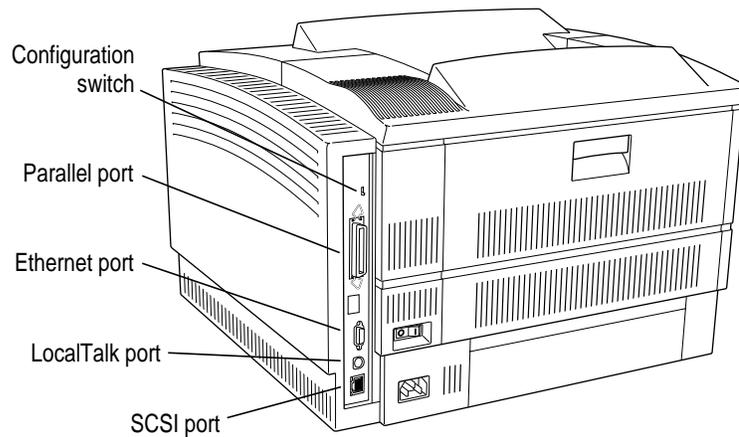
Push the cassette in all the way.

Loading the multipurpose tray

You can also load paper into the multipurpose tray. See Chapter 9 for more information. If you want to use a paper size other than the one that fits in your paper cassette, you must use the multipurpose tray.

Connecting the printer

You can connect the printer to many computers and networks using the printer's LocalTalk, Ethernet, and parallel ports. The printer prints only one user's job at a time, but it manages incoming print jobs from all ports so that no printing conflicts or problems occur. Unless you specify otherwise, it also automatically senses which printer language—PostScript or PCL5—the job requires.

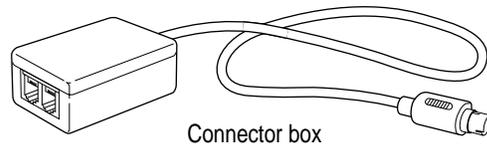


Port	Network interface	Computer
LocalTalk	AppleTalk	Macintosh computers
Ethernet	AppleTalk (EtherTalk)	Macintosh computers
	Novell NetWare	IBM PCs or compatibles
	Novell ATPS	Macintosh computers
	TCP/IP	UNIX workstations
Parallel	—	IBM PCs or compatibles

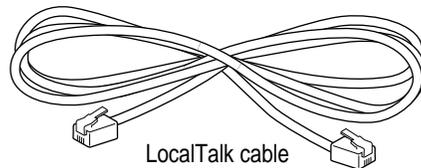
Connecting to a LocalTalk network

If you have an existing LocalTalk network, here's how to add the LaserWriter 16/600 PS to it.

- 1 Obtain a LocalTalk connecting kit.



Connector box



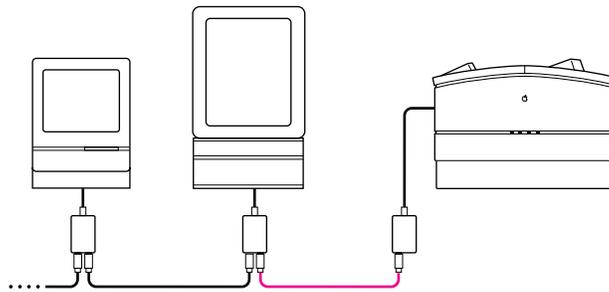
LocalTalk cable

LocalTalk connecting kits come in many varieties. Yours may look different.

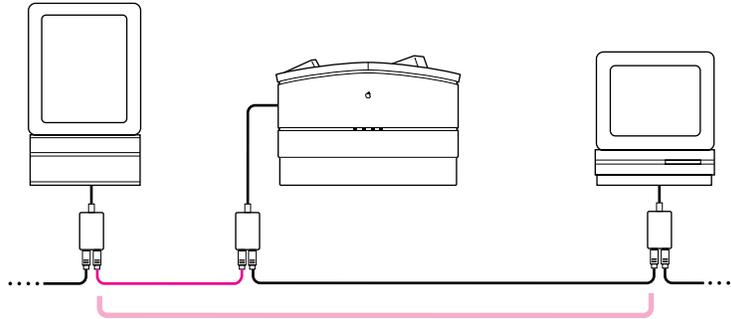
- 2 Plug the connector box into the LocalTalk port (⇄) on the printer.

3 Connect the printer to the network in one of these two ways:

- To connect the printer to the end of a LocalTalk network, use the LocalTalk cable to connect the empty socket of the nearest device's connector box to the printer's connector box.



- *To connect the printer between two devices on a LocalTalk network, disconnect one LocalTalk cable from the connector box of the device immediately to the left or right of the printer and plug it into the new printer's connector box. Then use the new LocalTalk cable to connect the free socket on the printer's connector box to the socket you freed on the other device's connector box.*



What to do after connecting to a LocalTalk network

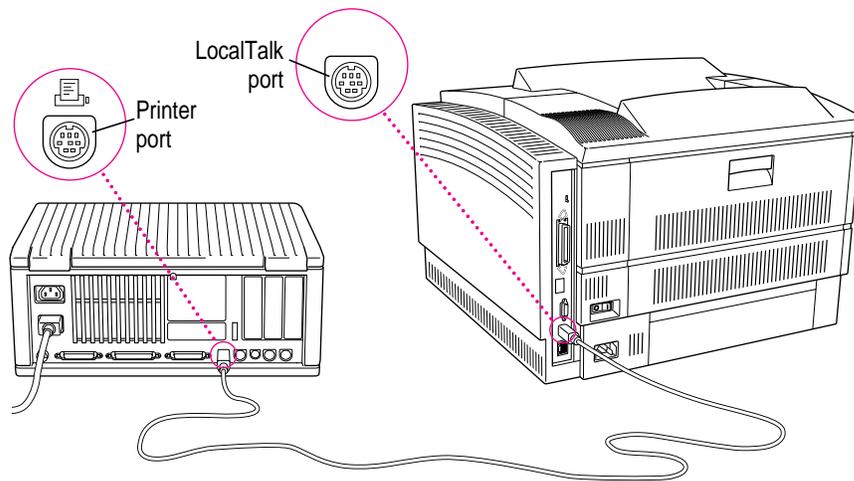
- If you wish to connect the printer to other networks, or to connect the printer directly to an IBM PC or compatible computer, see the appropriate sections later in this chapter.
- If you're finished connecting the printer, skip to "Adjusting Communication Settings," later in this chapter.

See Chapter 2 for more information about setting up the printer on a LocalTalk network, or Appendix B for information about setting up the printer on a Novell network running ATPS.

Connecting directly to a single Macintosh

Use this method to connect a single Macintosh to the printer. However, since that single Macintosh takes up the printer's LocalTalk port, you cannot also connect the printer to a LocalTalk network.

- 1 Obtain a System/Peripheral 8 cable.
- 2 Plug one end of the cable into the computer's printer (🖨️) port.
- 3 Plug the other end of the cable into the printer's LocalTalk (↕️) port.



What to do after connecting to a single Macintosh

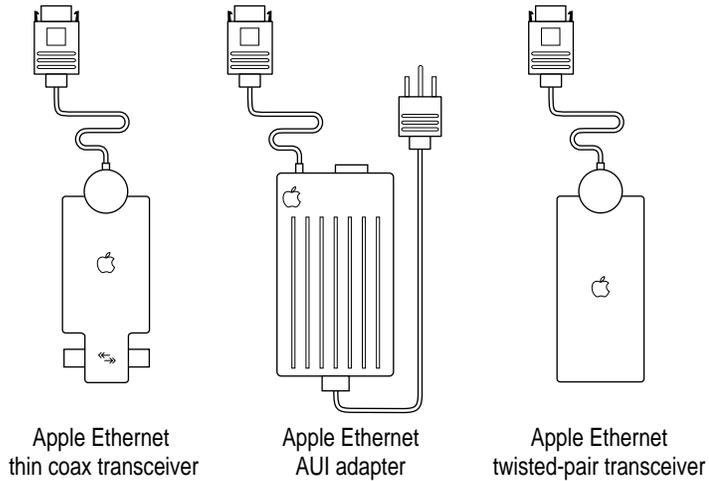
- If you wish to connect the printer to other networks, or to connect the printer directly to an IBM PC or compatible computer, see the appropriate sections later in this chapter.
- If you're finished connecting the printer, skip to “Adjusting Communication Settings,” later in this chapter.

See Chapter 2 for more information about setting up the printer on a LocalTalk network, or Appendix B for information about setting up the printer on a Novell network running ATPS.

Connecting to an Ethernet network

A single Ethernet cable can carry a number of network protocols, including AppleTalk (sometimes called EtherTalk when it's on an Ethernet network), Novell NetWare, and TCP/IP. To connect the printer to an Ethernet network running any combination of these protocols, follow these steps:

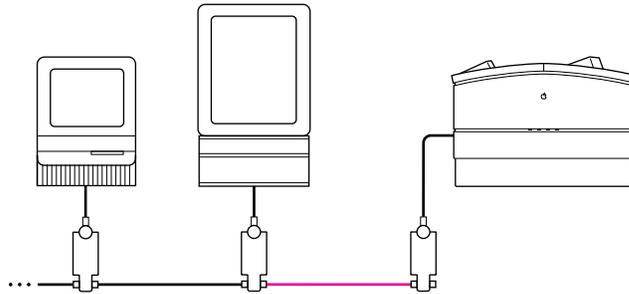
- 1 Obtain an Ethernet transceiver and a length of Ethernet cable appropriate for your network's media type—thin, thick, or twisted pair.**



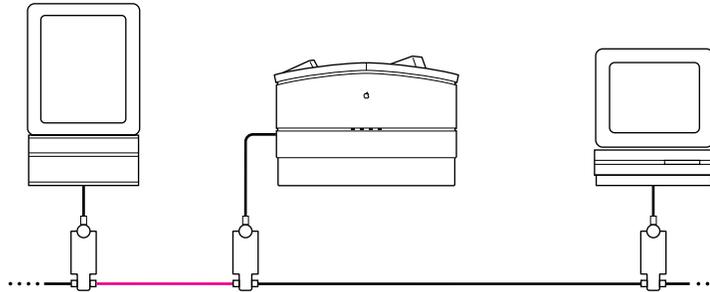
- 2 Plug the short cable from the transceiver into the Ethernet port (<->) on the printer.**

3 Connect the printer to the Ethernet network in one of these three ways:

- To connect the printer to the end of an Ethernet network, use the Ethernet cable to connect the empty socket of the nearest device's transceiver to the printer's transceiver, as shown here.



- *To connect the printer between two devices on an Ethernet network, disconnect one Ethernet cable from the transceiver of the device immediately to the left or right of the printer and plug it into the new printer's transceiver. Then use the new Ethernet cable to connect the free socket on the printer's transceiver to the socket you freed on the other device's transceiver.*



- *To connect the printer to an Ethernet hub, see the documentation that came with the Ethernet hub.*

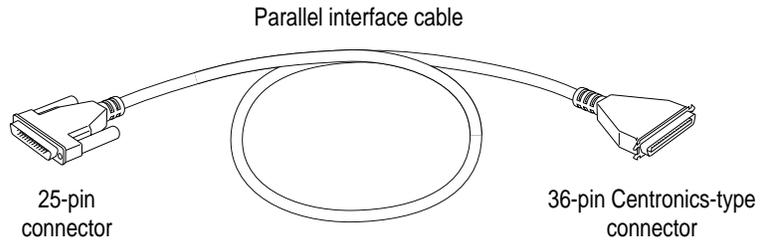
What to do after connecting to an Ethernet network

- If you wish to connect the printer directly to an IBM PC or compatible, see the next section.
- If you're finished connecting the printer, skip to "Adjusting Communication Settings," later in this chapter.

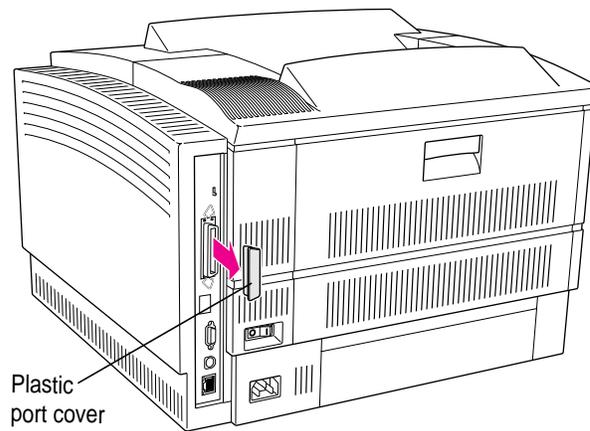
See Chapters 2, 3, and 4 for more information about setting up the printer for different network interfaces.

Connecting to an IBM PC or compatible with a parallel cable

- 1 Obtain a parallel interface cable like this one.

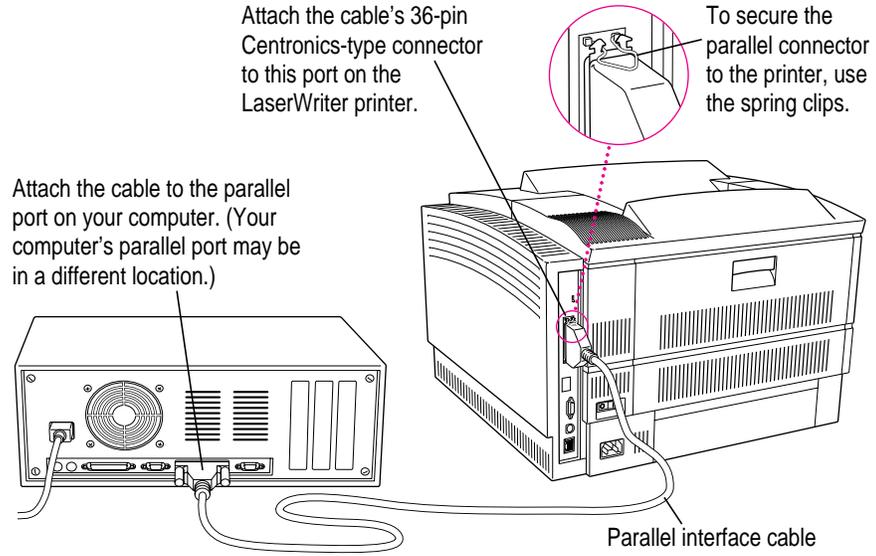


- 2 Remove the cover from the printer's parallel port.



IMPORTANT Do not remove the plastic cover from the parallel port unless you need to attach a parallel cable to the port. The cover protects the printer from possible damage by static electricity.

3 Use the parallel cable to connect the computer to the printer:



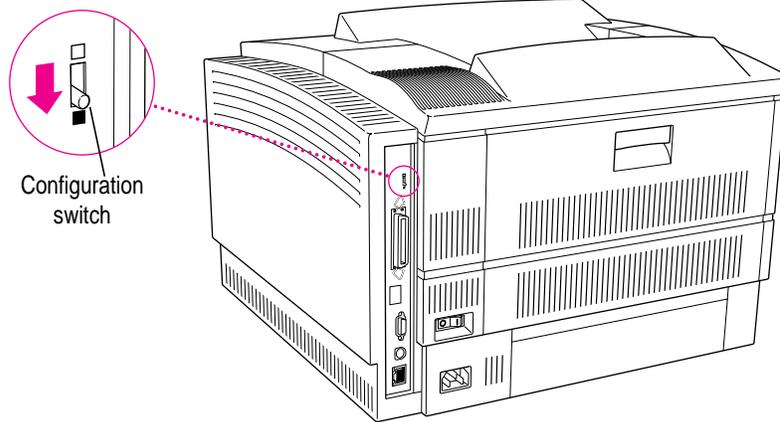
What to do after connecting directly to an IBM PC or compatible

- Read the rest of this chapter.

See Chapter 2 for more information about setting up the printer.

Adjusting communication settings

Though you can adjust many of the LaserWriter 16/600 PS's communication settings, the standard settings work for most environments. To make sure the printer is set up to use the standard settings, check the configuration switch on the left side of the printer to make sure it's in the down (■) position. The standard settings are listed in Appendix C.



Reasons to use custom communication settings

Though the standard communication settings work well for most environments, there are a few reasons why you might want to use custom communication settings:

- **To turn off network interfaces you don't need.**

For example, if you know the printer will never receive a NetWare message over the network, you can turn off the interface and stop the printer from sending out unnecessary NetWare packets.

- **To turn off automatic language sensing for one or more network interfaces.**

The LaserWriter 16/600 PS can interpret two different printer languages: PostScript and PCL5. In the standard setting, the printer automatically detects which language each document uses and prints it accordingly. If you know that you don't need automatic language switching for a particular network interface, you may want to set the interface to use one printer language or the other.

- **To configure the parallel port.**

The standard parallel port settings work for most parallel connections. If your parallel connection requires special settings, you can set the speed, the automatic language sensing feature, and the protocol, and turn bidirectional communication on or off.

How to customize communication settings

To customize communication settings, use either of the following two programs:

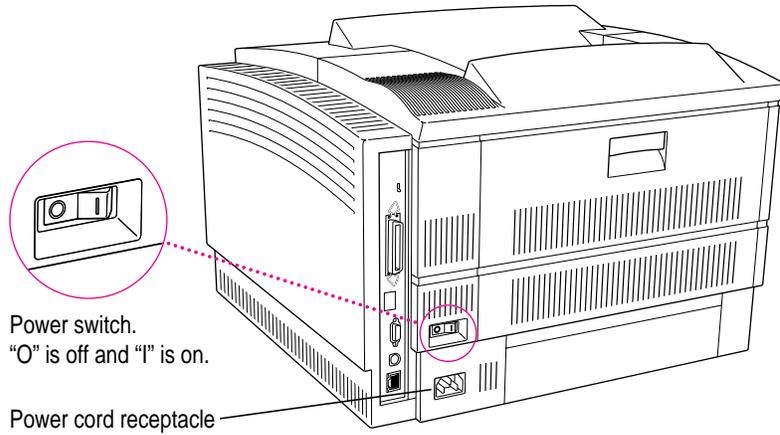
- Apple Printer Utility on the Macintosh (see Chapter 2 for details on how to install and use the program)
- LaserWriter Utility for Windows (see Chapter 3 for details on how to install and use the program)

To use the custom communication settings, put the configuration switch in the up (□) position.

Connecting the power and turning on the printer

Once you've connected the printer to your networks, you're ready to start up the printer. Follow these steps to make sure everything is working correctly.

- 1 **Make sure the printer is turned off.**



- 2 **Plug in the printer.**

Insert the socket end of the power cord into the recessed receptacle on the back of the printer. Plug the other end into a grounded (three-hole) AC outlet.

- 3 **Press the "I" on the power switch to turn the printer on.**

4 Save the startup page. It contains information you may need to complete your network setup.

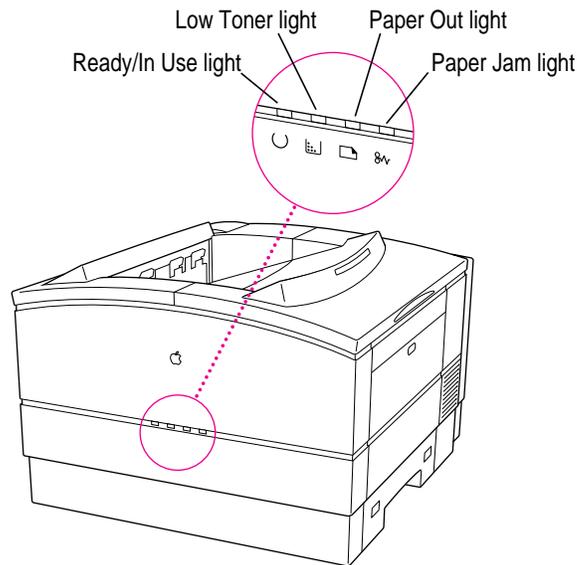
The printer takes a minute or two to warm up, and then it automatically prints a startup page. It prints the startup page every time you restart unless you turn the startup page off using either the Apple Printer Utility (described in Chapter 2) or the LaserWriter Utility for Windows (described in Chapter 3).

The startup page shows how the printer is set up, including the network connection types and what options are attached to the printer.

The startup page should look clean and sharp. If it is spotty, too light or too dark, or otherwise unclear, switch the printer off and on to print a second page. Try this two or three times if necessary. If the output doesn't improve, or if the printer won't print the startup page, refer to Part III, "Troubleshooting."

5 Check the status lights.

After the startup page is printed, the Ready/In Use light glows steadily. All other lights should be off. If any other lights are on, see Chapter 11.



Saving energy

When you save energy, you save our natural resources and reduce pollution. If you're concerned about energy consumption, you can take advantage of the printer's built-in energy-saving feature. By default, the printer enters an energy-saving mode after it's been idle for 60 minutes. You can adjust the idle delay by using the Apple Printer Utility on the Macintosh or the LaserWriter Utility for Windows.

You can also save energy on the LaserWriter 16/600 PS, as well as on all other printers (including those without energy-saving features), by taking these steps:

- If you know you won't be using the printer for a while—say, overnight—turn it off.
- Use the page preview feature provided in many programs to check page layout rather than printing a draft.

What to do next

Finish preparing the printer and completing the network connections by reading one or more of the following chapters:

- Chapter 2 explains how to administer the printer on an AppleTalk network and how to help **Macintosh users** start using the printer.
- Chapter 3 explains how to administer the printer on a **Novell NetWare** network and how to help **Windows and DOS users** get started using the printer. It also explains how to set up a **direct connection** to an IBM PC or compatible computer.
- Chapter 4 explains how to set up the printer on a **TCP/IP network** and how to help **UNIX users** get started using the printer.

2

Setting Up the Printer for Macintosh Users



This chapter explains how to prepare the printer for use on an AppleTalk network, configure the printer using the Apple Printer Utility, and prepare users' Macintosh computers to print on the printer.

Note: For instructions on setting up the printer for access by Macintosh client computers on a NetWare network, see Appendix B.

Initial AppleTalk setup

The LaserWriter 16/600 PS comes with software and fonts for use with Macintosh computers. Before Macintosh users can print with the LaserWriter 16/600 PS, the printer administrator must connect the printer to the network, install the printer software and fonts, and configure the printer.

Before you begin

This chapter presents instructions for installing the Macintosh printer software and configuring the printer with it. Before you begin, make sure you have

- set up the printer as described in Chapter 1
- connected the printer to your network
- made backup copies of the printer disks

Be sure to complete these tasks before continuing with the procedures in this chapter.

IMPORTANT The LaserWriter 16/600 PS software is designed to work with system software version 7.0 or later. If your system software is an earlier version, you should obtain a system software upgrade from an Apple-authorized dealer.

Step 1: Installing the software the printer administrator needs

Before you install the printer software, turn off any automatic virus-detection programs you have on your Macintosh computer. If you don't, problems may occur during the installation. After installation is complete, you can turn the virus-detection programs back on.

To install the printer software on a Macintosh computer, follow these steps:

- 1 **Make sure the disks are locked.**
- 2 **Insert *Macintosh Printer Disk 1* into a disk drive.**
The disk's icon appears on the desktop.
- 3 **Double-click the disk icon to open the disk.**
- 4 **Double-click the Installer icon to start the Installer program.**



Installer

After a moment, a Welcome dialog box appears.

5 Click Continue.

After a moment, the Install dialog box appears. At the top of the dialog box is a pop-up menu set to allow you to perform an Easy install.

IMPORTANT The Installer checks to make sure you have what you need to use the printer software. If you're missing anything, a message tells you what you need. You won't be able to install the software until you correct the problem. If a dialog box says you don't have the correct system software, you can purchase a new version from an Apple-authorized dealer.

6 Click the Install button.



The Installer takes a few moments to calculate what needs to be done and then begins to copy files.

7 Follow the instructions on the screen until the installation is complete.

After the installation, the Installer tells you to restart your computer.

8 Click the Restart button.

The software is now installed on the hard disk. If you turned off any automatic virus-detection programs on your Macintosh, turn them back on now.

Step 2: Choosing the printer on the administrator's computer

Before you can print with the printer, you must use the Chooser to select the printer and set up the printer software. You only have to set up the printer software once, when you first select it. You don't need to do it again unless you change or install additional LaserWriter 16/600 PS options, such as adding an optional 500-sheet feeder or increasing memory (see Chapter 5).

- 1 **Choose the Chooser from the Apple () menu.**

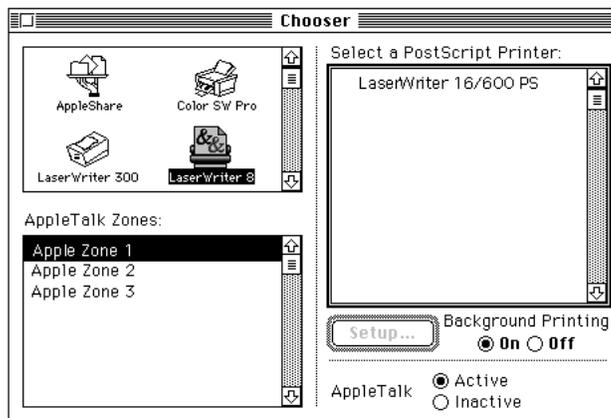
The Chooser window appears.

- 2 **Click the LaserWriter 8 icon (in the left half of the Chooser).**

If you don't see the LaserWriter 8 icon, scroll through the window.

- 3 **Click the name of the network zone in which your printer is located, if your printer is connected to a network with zones.**

The name of your LaserWriter 16/600 PS printer appears in the right half of the Chooser (along with the names of any other available LaserWriter printers).



- 4 **Double-click the name of your LaserWriter 16/600 PS.**

The Chooser identifies the type of printer and automatically sets up the printer software.

A small printer icon appears beside the printer name.

- 5 **Close the Chooser.**

Step 3: Naming the printer and setting its zone

Once connected to an AppleTalk network, the printer will appear on the network with the name LaserWriter 16/600 PS. You can change this name, if you wish. You can use the Apple Printer Utility, installed in the System Folder, to name the printer. See “Naming the Printer,” later in this chapter, for instructions for changing the printer name.

When a printer is connected to an EtherTalk network with zones, you can also set which zone the printer will be in. You can set the printer’s zone with the Apple Printer Utility. See “Setting the Printer’s Network Zones,” later in this chapter, for instructions for setting the printer’s zone.

Step 4: Making sure everything is working

The best way to make sure everything is set up correctly is to print something. As a simple print test, open and print the Read Me file that is on *Macintosh Printer Disk 1*.

- 1** Insert *Macintosh Printer Disk 1* into a disk drive.
- 2** Double-click the Read Me file to open it.
- 3** Choose Print from the File menu.

The Print dialog box appears listing the LaserWriter 16/600 PS printer as the selected printer. If the LaserWriter 16/600 PS printer’s name does not appear in the dialog box, see “Step 2: Choosing the Printer on the Administrator’s Computer.”

4 Click Print.

If the document doesn't print, check the steps you followed in Chapter 1 for connecting and turning on the printer. Also check that you have followed all the software installation steps presented in this chapter. Make sure that you have installed the toner cartridge and loaded paper into the paper cassette. Check that no packing material or paper has caused a jam in the printer. If the printer still will not print, turn to the troubleshooting chapters, Chapter 11 and 12. Indicator lights on the front of the printer blink to signal different errors and printing conditions, such as low toner or a paper jam. Check the lights and refer to Chapter 11 for their meaning. You can also check the status messages that appear in the PrintMonitor (during background printing) to see if error messages appear that might help you identify the problem.

What to do next

You may configure the printer using the Apple Printer Utility as explained in the next section. After the printer is configured, you can set up users' computers as explained in "Getting Macintosh Users Started Using the Printer," later in this chapter. If you want to install any options, see Chapter 5.

Configuring the printer

Though the printer itself has no control panel, you can configure it by using programs on computers connected to the printer:

- On Macintosh computers, use the Apple Printer Utility and the Chooser's setup function, which are described in this chapter.
- On IBM PC and compatible computers, use the LaserWriter Utility for Windows and the DOS utilities LWPMAN and LWFORM, all of which are described in Chapter 3.
- On UNIX workstations, log in to the TCP/IP Printer Configuration Utility using the UNIX Telnet program, as described in Chapter 4.

Each utility has some unique functions and some areas of overlap. For a list of each utility's functions, see Appendix A.

Using the Apple Printer Utility

The Apple Printer Utility program allows you to set the default settings that control how various aspects of the LaserWriter 16/600 PS work. The utility is placed in the System Folder when the printer software is installed. Use it to choose the basic printer settings that you want to use for all documents.

You can also change printer settings without changing the printer's basic defaults by changing the settings in the Print and Page Setup dialog boxes. Network users should use the Print and Page Setup dialog boxes to choose the individual settings for their documents.

IMPORTANT Use the Apple Printer Utility to make changes to the settings of the LaserWriter 16/600 PS. To change the settings of other Apple LaserWriter printers on the network, use the LaserWriter Utility. This utility is provided on the Macintosh printer software disks. See "Configuring Earlier Printer Models," later in this chapter.

Use the Apple Printer Utility to

- view information about the printer, such as the AppleTalk printer name and the total number of pages the LaserWriter 16/600 PS has printed
- name the printer on AppleTalk networks
- initialize internal or external hard disks connected to the printer
- download fonts to the printer or attached hard disks
- remove fonts
- print font samples
- turn printing of a startup page on or off
- set the print density to lighten or darken printing
- conserve power consumption by setting the energy-saving delay
- set paper-handling options
- turn the printer's FinePrint feature on and off
- turn the printer's PhotoGrade feature on and off
- set when the printer closes print jobs to provide faster throughput
- set the printer's EtherTalk zone
- view the Ethernet address
- view and specify the IP address
- view and configure the printer's custom communication settings
- send PostScript files to the printer
- restart the printer
- print a printer configuration page

IMPORTANT The Apple Printer Utility works only with the LaserWriter 16/1600 PS. When you use the utility to set a parameter, the parameter is stored in the printer and affects all Macintosh, Windows, and UNIX computers on the network.

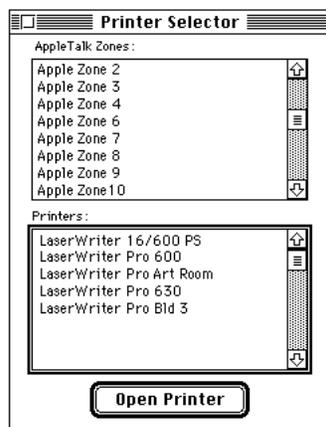
Opening the Apple Printer Utility

The Apple Printer Utility has two windows: the Printer Selector window, which is similar to the Chooser, and the printer features window, which you use to view or change the printer's settings.

1 Double-click the Apple Printer Utility.

The Installer puts the Apple Printer Utility in the System Folder. You can move it wherever you like.

You see the Printer Selector window.



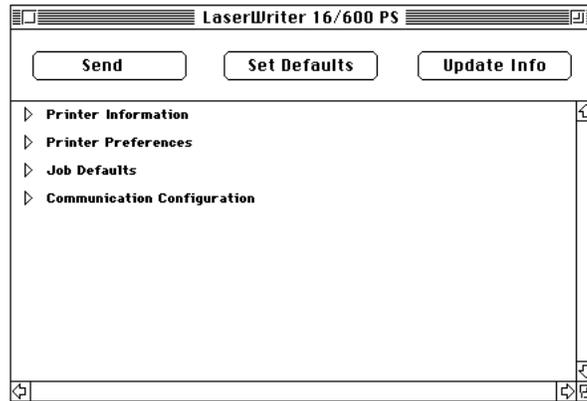
2 Choose the zone where the printer is located, if your network has zones.

The Printer Selector then displays the printers in the selected zone.

3 Click the name of the LaserWriter 16/600 PS printer.

4 Click Open Printer.

You see the printer features window.



The printer features window shows categories of printer information and settings that you can change: Printer Information, Printer Preferences, Job Defaults, and Communication Configuration.

5 To view or change settings under a category, click the arrow beside the category name to open the category and display its information and options.

Additional options may appear that you can also open and work with. When you are finished changing options in a particular category, you can click the arrow again to collapse the options.

You can click the Update Info button at the top of the window to view the latest settings of the selected printer.

You can click the Set Defaults button to reset the utility's settings to the original software defaults.

6 After viewing the information and making changes, click the Send button to send your changes to the printer.

- 7 When you are finished making changes, click the Close box to close the window.

The next sections describe configuration procedures that you can perform with the Apple Printer Utility. First select and open the printer in the Printer Selector window. The information and procedures described in each section then present how to work with the printer features window of the utility.

Quitting the Apple Printer Utility

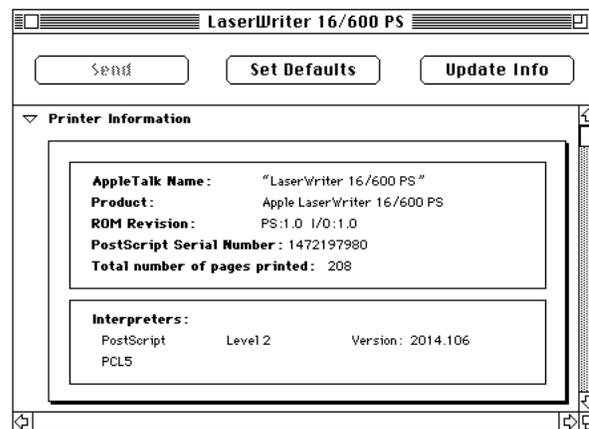
To quit the Apple Printer Utility:

- Choose Quit from the File menu.

Viewing printer information

You can view information about your LaserWriter 16/600 PS by displaying the printer information in the printer features window.

- Open the Printer Information category.



You see a list of printer information.

Naming the printer

To help users easily select the LaserWriter 16/600 PS printer from their computers, give the printer a unique name based, for example, on its location or the group of users who commonly accesses it. Use the following procedure to name or rename any LaserWriter 16/600 PS printer on the AppleTalk network.

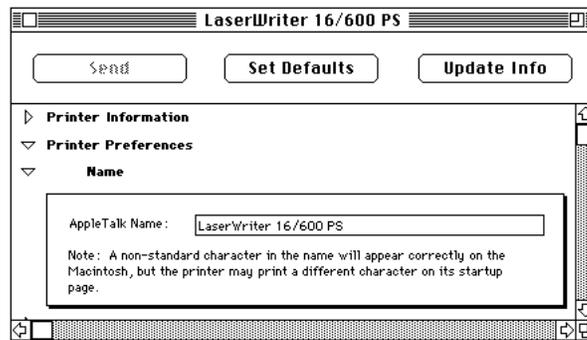
IMPORTANT Be sure to tell users what the printer name is and what zone it's located in when you install the printer software on their computers or instruct them to do so.

- 1 **Open the Printer Preferences category.**

You see a list of preferences.

- 2 **Open the Name category.**

The name panel appears with the selected printer's current name.



- 3 **Type a new name.**
- 4 **Click Send to send the new name setting to the printer.**

Initializing a hard disk connected to the printer

If you connect an internal or external hard disk to the printer, you need to initialize the disk before you can download fonts to it. See Chapter 5 for information about connecting hard disks to the printer.

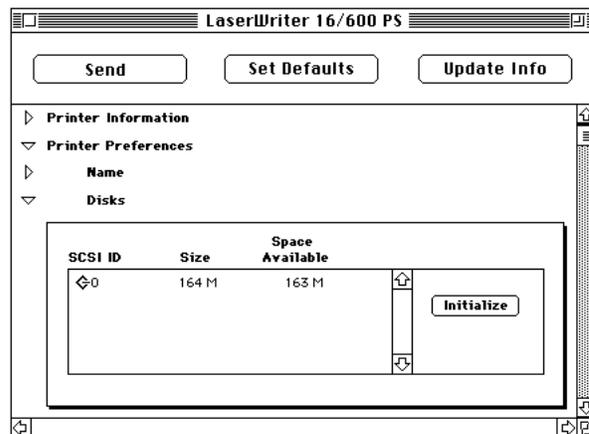
WARNING The LaserWriter 16/600 PS printer will not recognize disks formatted for use with a different model LaserWriter or Macintosh. If you connect a disk formatted for another printer model or a Macintosh to the LaserWriter 16/600 PS, you will need to reinitialize the disk and then reload any fonts from your computer. Reinitializing will erase all fonts previously stored on the disk.

- 1 **Open the Printer Preferences category.**

You see a list of preferences.

- 2 **Open the Disks category.**

The Disks panel appears.



- 3 **Select the disk you want to initialize from the list and click Initialize.**

A message appears to warn you that initializing the disk erases the entire contents of the disk.

4 Click Initialize to proceed.

It will take some time for the initialization process to be completed. The printer will not be available for printing until the hard disk is initialized.

Downloading fonts to the printer

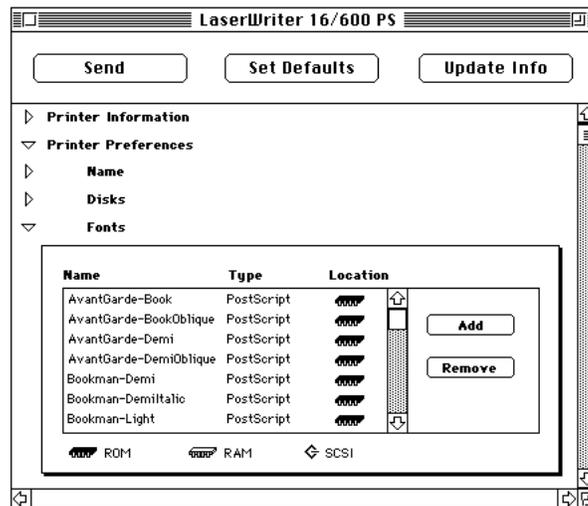
You can download additional fonts to the printer's RAM or to the printer's hard disk to speed up printing. You do not have to download fonts to use them in printed documents, but doing so can make printing faster than storing fonts only on your computer. Fonts downloaded to the printer's RAM are lost whenever the printer is turned off, whereas fonts downloaded to the printer's hard disk are not lost when the printer is turned off.

1 Open the Printer Preferences category.

You see a list of preferences.

2 Open the Fonts category.

The Fonts panel appears.



You see the font names, their types, and current locations listed in the panel. Fonts are located in the printer's ROM (a black chip icon), printer's RAM (a white chip icon), or on a hard disk (a SCSI hard disk icon).

3 Click Add.

A file selection dialog box appears.

- 4 Select the fonts you want to download.

Double-click the font name in the list or select the name.

- 5 Choose a destination for downloading the fonts from the Destination pop-up menu.

- 6 Click Send.

Removing fonts

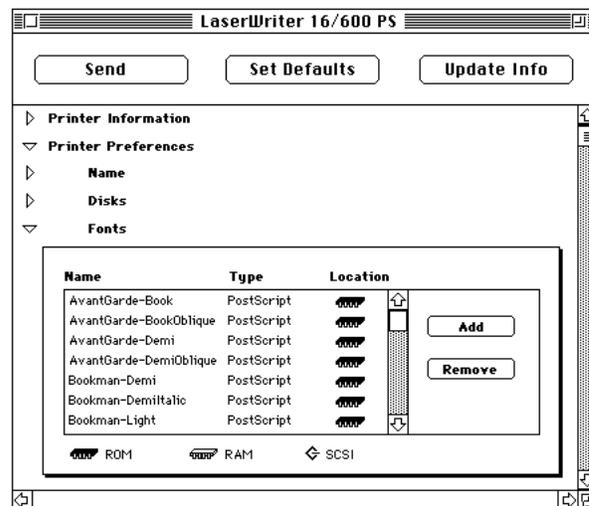
You can remove fonts from the printer's memory or attached hard disk when you no longer need them.

- 1 Open the Printer Preferences category.

You see a list of preferences.

- 2 Open the Fonts category.

The Fonts panel appears.



You see the font names, their types, and current locations listed in the panel. Fonts are located in the printer's ROM (a black chip icon), printer's RAM (a white chip icon), or on a hard disk (a hard disk icon). You cannot remove the fonts in the printer's ROM.

- 3 Select the fonts you want to remove.

- 4 Click Remove.

Printing font samples

You can print a list of the fonts currently stored in the printer's memory and on hard disks attached to the printer.

- **Choose Print Font Samples from the File menu.**

Turning the startup page on or off

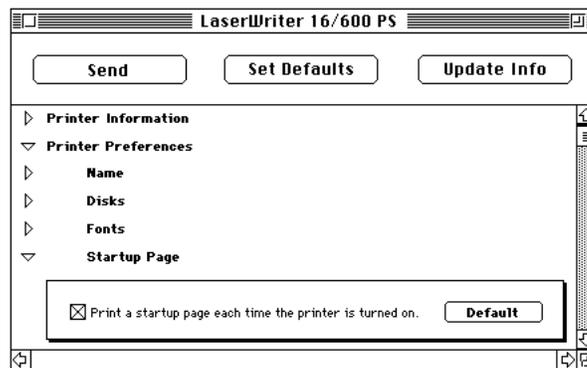
The LaserWriter 16/600 PS normally prints a sample page when you turn the printer on. This page shows the printer's name, the total number of pages printed, the amount of memory, installed options, and communication settings. You can turn this feature off if you wish.

- 1 Open the Printer Preferences category.**

You see a list of preferences.

- 2 Open the Startup Page category.**

The Startup Page panel appears.



- 3 Click the checkbox to turn the startup page on or off.**

When an X appears in the checkbox, the printer is set to print the startup page.

- 4 Click Send to send the startup page setting to the printer.**

Setting the print density

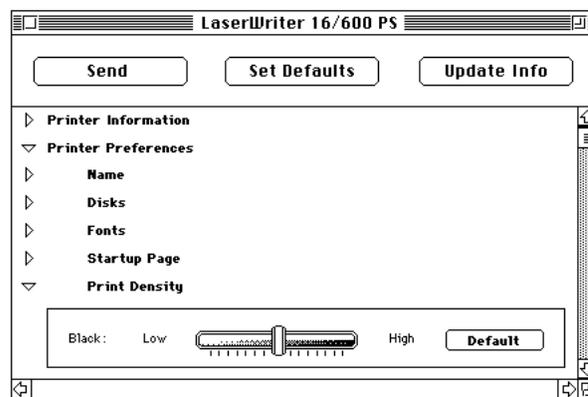
If your documents are printing too light or too dark, you can adjust the print density of the printer to print lighter or darker text and images.

- 1 **Open the Printer Preferences category.**

You see a list of preferences.

- 2 **Open the Print Density category.**

The Print Density panel appears.



- 3 **Drag the slider in the appropriate direction to increase or decrease the print density.**

- 4 **Click Send to send this Print Density setting to the printer.**

Conserving energy

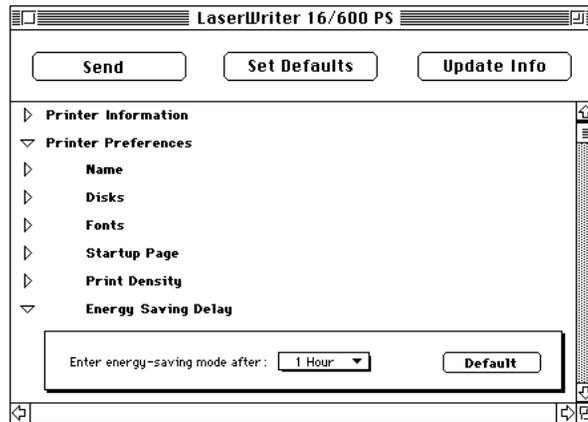
Your LaserWriter 16/600 PS automatically reduces its power consumption after 60 minutes of inactivity. You can lengthen or shorten the time that the printer remains idle before it reduces its power consumption. Once the printer turns down its power, it will need to warm up again before printing the next document. You or other network users may experience a small delay in printing.

- 1 **Open the Printer Preferences category.**

You see a list of preferences.

- 2 **Open the Energy Saving Delay category.**

The Energy Saving panel appears.



- 3 **Choose a time interval from the pop-up menu.**
- 4 **Click Send to send the energy saving delay setting to the printer.**

Setting paper-handling options

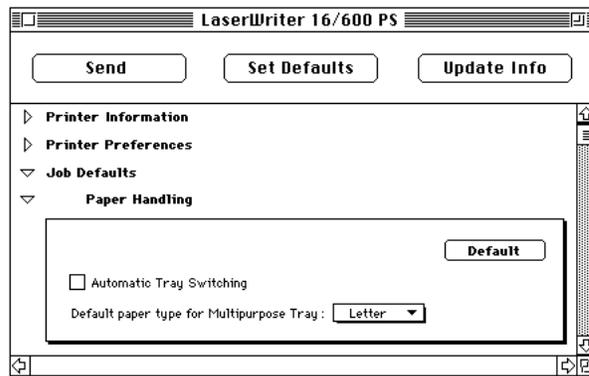
When the LaserWriter 16/600 PS runs out of paper in one tray, it can automatically switch and use paper in another paper cassette or the multipurpose tray. By using automatic tray switching between the 250-sheet paper cassette and the 100-sheet multipurpose tray, you can print 350 sheets without reloading paper.

- 1 **Open the Job Defaults category.**

You see a list of job default categories.

- 2 **Open the Paper Handling category.**

The Paper Handling panel appears.



- 3 **Click the checkbox to turn Automatic Tray Switching on or off.**

When an X appears in the checkbox, tray switching is turned on.

- 4 **Choose a default paper size for the multipurpose tray from the pop-up menu.**

The Print dialog box provides the Auto Select option, which allows the printer to draw paper from any paper source that holds the correct size paper. Similarly, the automatic tray switching feature allows the printer to select another paper source that holds the correct size paper when a paper source runs out. To enable the Auto Select and automatic tray switching features to appropriately draw paper from the multipurpose tray when necessary, specify the size of paper that the multipurpose tray holds.

- 5 **Click Send to send the paper handling settings to the printer.**

Turning FinePrint on or off

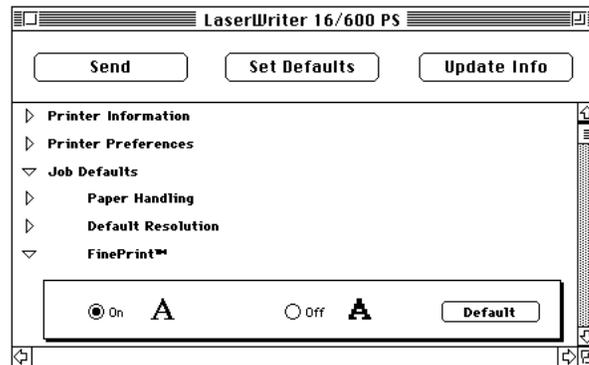
FinePrint provides smoother, less jagged printing of text characters. You can set the printer's default setting for the FinePrint feature to on or off. Users can change this setting from the Print Options dialog box. To print high-quality images, turn off FinePrint.

- 1 **Open the Job Defaults category.**

You see a list of job default categories.

- 2 **Open the FinePrint category.**

The FinePrint panel appears.



- 3 **Click the on or off button.**
- 4 **Click Send to send the FinePrint setting to the printer.**

Turning PhotoGrade on or off and adjusting levels of gray

PhotoGrade enhances the look of printed images, such as scanned photographs, by providing more shades of gray and better printed clarity and contrast. If your LaserWriter has been upgraded to a minimum of 12 MB of memory, you can use PhotoGrade. You can set the printer's default to have PhotoGrade turned on and off.

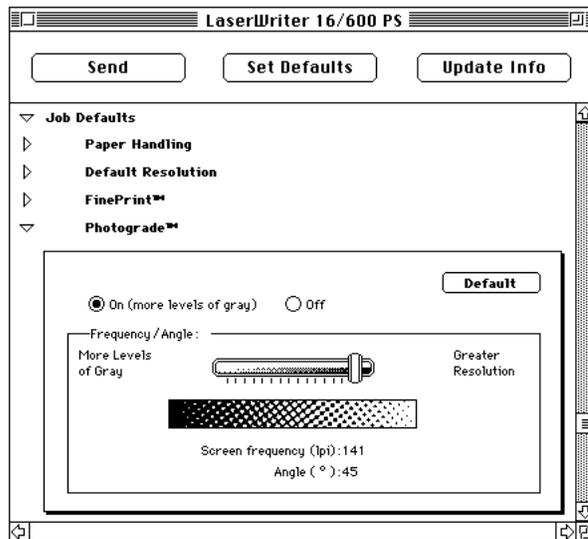
You can also change the way images print by increasing or decreasing the number of gray levels used to reproduce them. More levels of gray produce a more natural-looking photographic quality. However, increasing the number of grays also decreases the resolution of the image. For each level of gray, a unique pattern of laser pulses is required to produce a printed dot. More gray levels require more variations in such patterns, which in turn require the printer to use larger, more noticeable dots. You can experiment with various settings to find the balance that suits your needs.

1 Open the Job Defaults category.

You see a list of job default categories.

2 Open the PhotoGrade category.

The PhotoGrade panel appears.



- 3** Click On or Off in the PhotoGrade panel.
- 4** Adjust the controls displayed in the panel as you wish.
- 5** Click Send to send the PhotoGrade and gray levels settings to the printer.

IMPORTANT When printing from a Macintosh, PhotoGrade works only when the Color/Grayscale option is selected in the Print dialog box.

Setting up job handling

You can specify how the printer handles jobs for each type of network. You can set the printer to maintain contact with the computer until all pages of a job are finished printing. This allows users to receive printer messages, such as a message telling them that the printer is out of paper, while their job is printing. You can also have the printer break contact with the computer once the print job has been sent to the printer (but is still being processed). This provides faster handling of print jobs by allowing the printer to begin processing the next job before all pages of the previous job are printed. However, users may not receive feedback about paper outages and problems such as paper jams after their job has been processed and the connection has been broken.

You can set job handling for individual network protocols that you use.

- 1** Set the configuration switch on the printer to the up (□) position to select the custom settings.

The configuration switch must be in the up (□) position, or the printer will forget the job-handling settings when it is turned off or restarted.

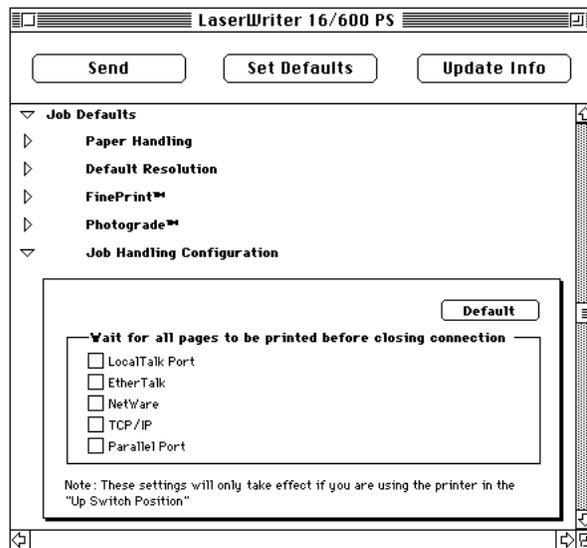
Note: Changing the configuration switch setting may alter some of your network settings. For example, when the switch is in the up (□) position, the default mode for the NetWare, TCP/IP, and parallel interfaces is PostScript; but when the switch is in the down (■) position, the mode is AutoSelect. To change the custom settings, see “Changing Custom Communication Settings,” later in this chapter.

- 2** Open the Job Defaults category in the Apple Printer Utility program.

You see a list of network options.

- 3** Open the Job Handling Configuration category.

- 4 Click the checkboxes next to the network types to specify when the connection with the computer should be broken.



When an X appears in the checkbox, the printer will wait for all pages to be printed before closing the connection.

- 5 Click Send to send the job-handling configuration settings to the printer.

Setting the printer's network zones

You can specify the EtherTalk network zone that the printer will be accessible in.

- 1 Set the configuration switch on the printer to the up (□) position to select the custom settings.**

The configuration switch must be in the up (□) position, or the printer will forget the zone when it is turned off or restarted.

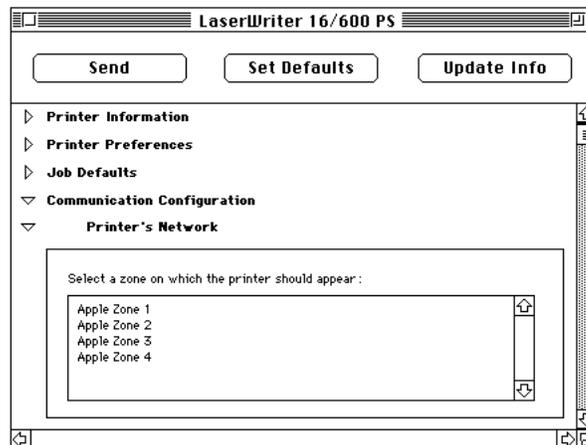
Note: Changing the configuration switch setting may alter some of your network settings. For example, when the switch is in the up (□) position, the default mode for the NetWare, TCP/IP, and parallel interfaces is PostScript; but when the switch is in the down (■) position, the mode is AutoSelect. To change the custom settings, see “Changing Custom Communication Settings,” later in this chapter.

- 2 Open the Communication Configuration category in the Apple Printer Utility program.**

You see a list of communication settings options.

- 3 Open the Printer's Network category.**

A list of the network zones appears.



- 4 Select the zone you want the printer to appear in.**
- 5 Click Send to send the zone setting to the printer.**

Viewing the Ethernet address

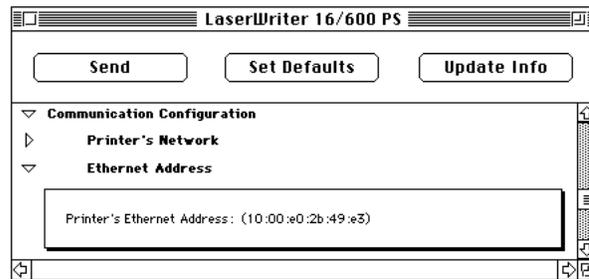
You can view the printer's Ethernet address when needed.

- 1 **Open the Communication Configuration category.**

You see a list of communication settings options.

- 2 **Open the Ethernet Address category.**

The printer's Ethernet address appears.



Changing TCP/IP configurations

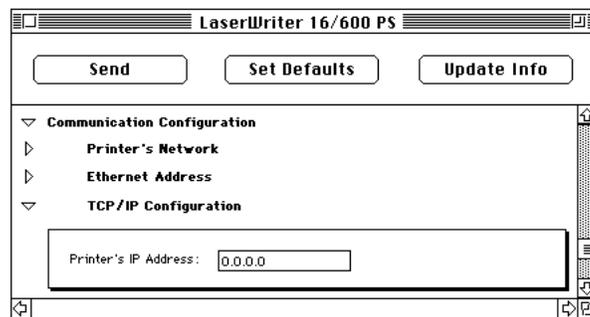
You can specify the IP address of the printer. For information about determining the printer's IP address and setting up the printer on a TCP/IP network, see Chapter 4.

- 1 **Open the Communication Configuration category.**

You see a list of communication settings options.

- 2 **Open the TCP/IP Configuration category.**

A panel appears in which you can enter the IP address.



- 3 **Enter the IP address.**
- 4 **Click Send to send the IP address to the printer.**

Viewing communication settings

The standard communication settings of the LaserWriter 16/600 PS work for most environments. To make sure the printer is set up to use the standard settings, check that the configuration switch on the left side of the printer is in the down (■) position. The switch is located above the interface connectors.

You can view the standard communication settings for the printer with the Apple Printer Utility. The NetWare, TCP/IP, and Parallel interfaces are set to AutoSelect, which turns on automatic language sensing. Automatic language sensing allows the printer to receive information over the network and determine which page-description language—PostScript or PCL5—is required.

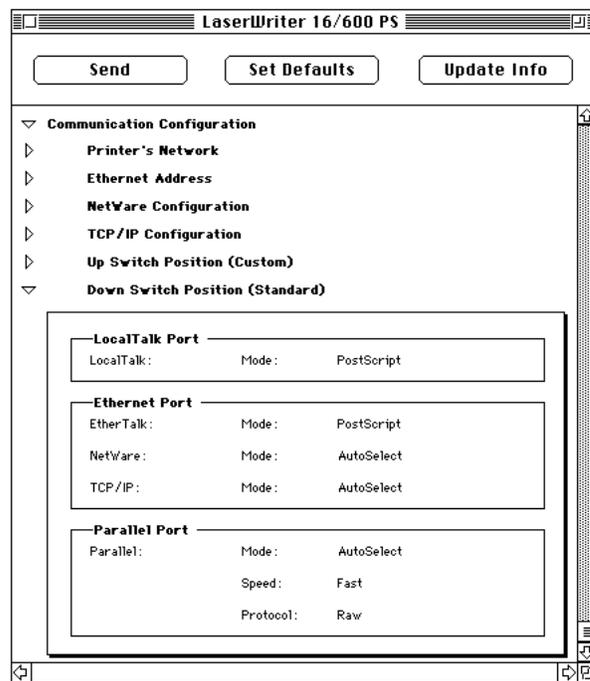
For more information about connecting the printer to LocalTalk, Ethernet, and parallel ports, see “Connecting the Printer” in Chapter 1. For more information about setting the configuration switch on the printer, see “Adjusting Communication Settings” in Chapter 1.

1 Open the Communication Configuration category.

You see a list of communication settings options.

2 Open the Down Switch Position category.

A list of port connections and protocol choices appears.



You cannot change the settings of the Down Switch Position.

Changing custom communication settings

You can change the printer's custom communication settings to optimize them for your network environment. You can view and change the custom communication settings for the printer with the Apple Printer Utility. For example, if you know that the printer will never receive a NetWare message over the network, you can turn off the NetWare interface and stop the printer from sending out unnecessary NetWare packets.

You make changes to the custom communication settings with the printer's configuration switch set in the down (■) position (set to the standard settings). This makes all custom communication settings available for changes. Then, after you have made your changes to the custom communication settings, you can alert users about the changes and implement the new settings by pushing the configuration switch on the printer to the up (□) position (set to the custom settings).

For more information about connecting the printer to LocalTalk, Ethernet, and parallel ports, see "Connecting the Printer" in Chapter 1. For more information about setting the configuration switch on the printer, see "Adjusting Communication Settings" in Chapter 1.

- 1 Set the configuration switch on the printer to the down (■) position to select the standard settings.**

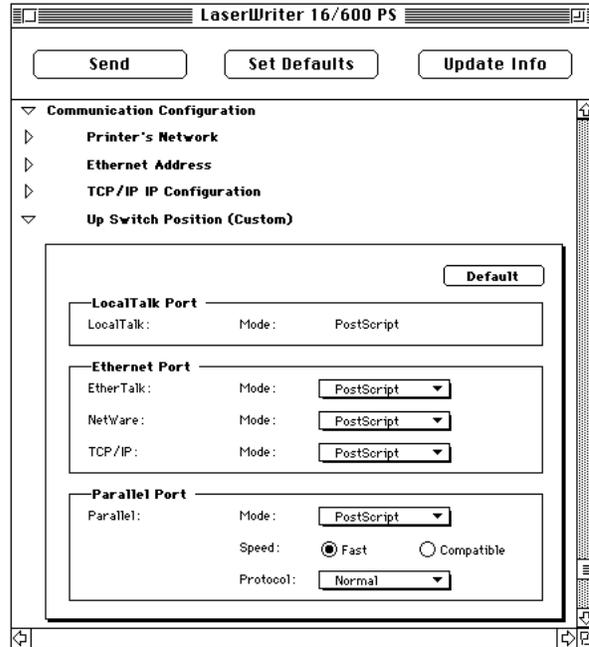
Although you are changing the custom settings, setting the configuration switch to the standard settings makes all the custom settings available for changes.

- 2 Open the Communication Configuration category.**

You see a list of communication settings options.

3 Open the Up Switch Position category.

A list of port connections and protocol choices appears.



4 Choose the port settings you want.

- The LocalTalk interface is always set to PostScript mode.
- You can set the EtherTalk interface to PostScript mode or turn it off.
- You can set the NetWare interface to PostScript mode, PCL5 mode, AutoSelect mode (which automatically senses whether PostScript or PCL5 mode should be selected), or turn it off.
- You can set the TCP/IP interface to PostScript mode, PCL5 mode, AutoSelect mode (which automatically senses whether PostScript or PCL5 mode should be selected), or turn it off.
- You can set the Parallel interface to PostScript mode, PCL5 mode, or AutoSelect mode (which automatically senses whether PostScript or PCL5 mode should be selected). You can also set the Parallel interface to Fast or a slower Compatible speed, and set the Parallel protocol to normal, raw, binary, or TBCP.

IMPORTANT If you select the Off mode setting to turn off the EtherTalk, NetWare, or TCP/IP interface, the change does not take effect until the printer is turned off and back on again.

- 5** Click **Send** to send the communication configuration settings to the printer.
- 6** Set the configuration switch on the printer to the up (⏏) position when you are ready to implement the custom settings.

Sending PostScript files to the printer

You can download PostScript files to the printer to print a PostScript program or Encapsulated PostScript (EPS) file, or to run a PostScript program to change the internal settings of the printer. You can create a PostScript file in a variety of text-editing programs or by printing any document to a file (just click the File button in the Print dialog box).

- 1** Choose **Send File** from the **File** menu.

The Send File dialog box is displayed for the currently selected printer.

- 2** Select the PostScript file that you want to send to the printer.
- 3** Click **Add**.
- 4** Click **Send**.

Restarting the printer

You may need to restart the printer to clear its memory if you have any problems printing.

1 Choose Restart from the Utilities menu.

A dialog box appears asking you to confirm that you want to restart the selected printer.

2 Click Restart.

When the printer lights stop blinking, the printer is ready to print.

The same effect can be achieved by physically turning the printer on and off again.

IMPORTANT If the LaserWriter 16/600 PS is on a network shared by other users, make sure that no one is attempting to use the printer when you restart it.

Printing a configuration page

You can print a listing of the current configuration settings and other information about the printer. This page serves as a reference whenever you connect a computer to the printer.

- **Choose Print Configuration Page from the File menu.**



Configuring earlier printer models

Use the Apple Printer Utility to configure the LaserWriter 16/600 PS. You cannot use this utility to configure earlier Apple LaserWriter models. To configure other models, use the LaserWriter Utility. A copy of the LaserWriter Utility is provided on the Macintosh printer software disks.

Follow these instructions to install the LaserWriter Utility:

- 1** Insert *Macintosh Printer Disk 1* into a disk drive.
The disk's icon appears on the desktop.
- 2** Double-click the disk icon to open the disk.
- 3** Double-click the Installer icon to start the Installer program.



After a moment, a Welcome dialog box appears.

- 4** Click **Continue**.
After a moment, the Install dialog box appears. At the top of the dialog box is a pop-up menu set to allow you to perform an Easy Install.
- 5** Choose **Custom Install** from the pop-up menu.
- 6** Click the **LaserWriter Utility** option to select it.
- 7** Click the **Install** button.
- 8** Follow the instructions on the screen until the installation is complete.

For information about using the LaserWriter Utility to configure a printer, refer to the manual that came with the printer.

Getting Macintosh users started using the printer

As soon as you connect the LaserWriter 16/600 PS printer to the network, it's ready to use. In preparing to print on it, Macintosh users follow the same basic steps that you did to install the software and set up the printer.

Each user

- installs the printer software and fonts on the Macintosh
- selects the printer from the Chooser
- sets up the printer from the Chooser

You can get Macintosh users started with the printer and the new printer software in whatever way you're used to. Chapter 6 explains to users how to install the software from the software disks. If you'd prefer not to pass around the software disks, you can place the software on a server, as explained in the next section. If you prefer, you can of course install the software on each user's computer yourself. If you have the users install their own software, make sure you give them:

- the printer software and instructions for installing it
- the name of the AppleTalk zone on which the printer is located
- the name you gave the LaserWriter 16/600 PS printer if you renamed it with the Apple Printer Utility

For specific steps on how a user can install the printer software on a Macintosh and set up the printer from the Chooser, refer to "Installing the Printer Software" and "Selecting and Setting Up the Printer" in Chapter 6.

Preparing a server so users can install over a network

If you prefer that users install their software from a network server rather than passing around the original Macintosh floppy disks, you must copy the disks to a server as follows:

- 1 Create a new folder on the server and rename it.
- 2 Insert *Macintosh Printer Disk 1*.
- 3 Drag the Macintosh Printer Disk 1 icon onto the icon of the folder



IMPORTANT You must drag the disk icon rather than copying the contents of the disk directly.

- 4 Repeat steps 2 and 3 for each Macintosh printer disk.

Installing the printer software from the server

After you've copied the software to the server as described in "Preparing a Server so Users Can Install Over a Network," users can install the software on their own computers by following these steps:

- 1 Turn off any automatic virus-detection programs on your Macintosh before installing the software.**
- 2 Log in to the server from the computer where you want to install the software.**
- 3 Open the folder that contains the printer software.**
- 4 Open the Macintosh Printer Disk 1 folder.**
- 5 Double-click the Installer icon.**

A dialog box opens to describe the installation.

- 6 Click the Continue button to close the dialog box.**
- 7 Click the Install button.**

The Installer takes a few moments to calculate what needs to be done and then begins to copy files.

- 8 Follow the instructions on the screen until the installation is complete.**

After the installation, the Installer tells you to restart your computer.

- 9 Click the Restart button.**

The software is now installed and the printer is ready for use. If you turned off any automatic virus-detection programs on your Macintosh, turn them back on now. After installing the printer software, you need to set it up to use the printer. See "Selecting and Setting Up the Printer" in Chapter 6.

What to do next

The printer is now set up on your AppleTalk network. If you want to install any options, see Chapter 5. To learn how to print from a Macintosh computer, see Chapter 6. To set up the printer for Windows users, see Chapter 3. To set up the printer for UNIX users, see Chapter 4.

3

Setting Up the Printer for Windows and DOS Users



This chapter describes how to set up the printer for use with IBM PCs or compatible computers running Windows or DOS. It provides detailed procedures for setting up the printer for use on a Novell NetWare network. It provides instructions for using the LWPMAN and LWFORM MS-DOS utilities provided with your printer. This chapter also provides instructions on installing and using the Apple LaserWriter Utility for Windows.

Initial Novell NetWare setup

This section provides instructions on setting up the LaserWriter 16/600 PS printer for operation on a Novell NetWare network.

Before you begin

Set up the printer as described in Chapter 1, remembering to

- unpack and prepare the printer
- connect the printer to your NetWare network using Ethernet cables or through a direct parallel connection to a PC connected to the network
- plug in and turn on the printer (Keep the startup page that automatically prints out. It provides the default NetWare printer name that you'll need for network setup.)

Make sure that the NetWare network is set up and operating according to the instructions in the Novell NetWare documentation.

You should have access to the NetWare Printer Console utility, PCONSOLE, on the PC from which you will be setting up the printer and have the administrative privileges necessary to make changes to the network.

Note: The LaserWriter 16/600 PS automatically determines the Ethernet frame type used by NetWare for network communications. You do not need to configure frame type when setting up the printer.

Step 1: Installing the software the printer administrator needs

As the printer administrator, you must install the Adobe Printer Driver on your hard disk, plus a number of administrator tools. You can do so by using the installation program that comes on the software disks included with this printer.

- 1** Install the Adobe Printer Driver as described in “Installing the Windows Printer Software” in Chapter 7.
- 2** Run the installer program again, but choose the Custom Installation instead of the Express Installation. When the installer program asks what you want to install, select NetWare Utilities.

The LWFORM and LWPMAN utilities are stored in `c:\NETUTIL` by default.

Step 2: Choosing an operating mode

When setting up your LaserWriter 16/600 PS printer for a NetWare network, you have a choice of three operating modes:

- PSERVER mode, in which the printer emulates NetWare's PSERVER software and functions as a dedicated print server
- RPRINTER mode, in which the printer functions as a remote printer
- ATPS (AppleTalk Print Spooler) mode, in which the printer functions as a remote AppleTalk printer

In PSERVER mode, the LaserWriter 16/600 PS printer does not require the NetWare print server software. Print jobs are stored in a queue on a specified file server and retrieved by the printer.

In RPRINTER mode, the LaserWriter 16/600 PS printer depends on the NetWare print server software—either a NetWare Loadable Module (NLM), an RPRINTER.EXE executable file, or a value-added process (VAP) running on top of the operating system—to manage printing. Print jobs are stored in a queue on a specified file server. When the printer is ready to print the job, the NetWare print server software copies the job to the printer.

In ATPS mode, the LaserWriter 16/600 PS printer uses its AppleTalk protocol support to communicate with the Novell ATPS NetWare Loadable Module (NLM). The NLM (included in the *NetWare for Macintosh* package from Novell) extends full queue and spooling services to Macintosh clients from a server-based software process.

There are advantages to each type of operating mode. Your choice will depend on your networking environment and the types of jobs you will be printing. Regardless of your choice, you can locate the printer anywhere on the network.

PSERVER advantages include:

- faster performance than RPRINTER
- easier to set up than RPRINTER
- does not require Novell NetWare Print Server software or a dedicated computer for print service

RPRINTER advantages include:

- print server software does not require a user license
- supports all queue service modes

ATPS advantages include:

- pure AppleTalk protocol solution
- easy addition to existing ATPS configurations
- no special printer configuration requirements

What to do next

Once you decide how you want to set up the printer, proceed as follows:

- **PSERVER** To set up the printer as a print server, read about how to use PCONSOLE in the next section, then
 - if you want a simple setup, read “Step 3, Option A: Setting Up the Printer as a Printer Server (Using PCONSOLE Only),” later in this chapter.
 - if you want to assign a password, provide the printer with a descriptive network name other than its NetWare printer name, or specify a queue scan time, read “Step 3, Option B: Setting Up the Printer as a Print Server (Using PCONSOLE and LWPMAN),” later in this chapter.
- **RPRINTER** To set up the printer as a remote printer, read about how to use PCONSOLE in the next section, then skip to “Step 3, Option C: Setting Up the Printer as a Remote Printer (RPRINTER Mode),” later in this chapter.

For instructions on setting up the printer for access by Macintosh clients on a NetWare network, see Appendix B.

Using PCONSOLE

PCONSOLE is a DOS-based utility for configuring printers on a NetWare network. This chapter provides a subset of basic PCONSOLE operations required to set up the LaserWriter 16/600 PS printer. PCONSOLE is not provided with the LaserWriter 16/1600 PS printer. It comes with your NetWare software. Detailed information about PCONSOLE can be found in your NetWare documentation.

The descriptions of PCONSOLE in this guide assume the use of keyboard commands to navigate through the program and perform operations. With the installation of a DOS mouse driver, you can also use a mouse to make selections and choose options. The table below lists some basic PCONSOLE key commands.

Command key	Description
Esc (Escape)	Returns to the previous level
Del (Delete)	Deletes a selected item
F7	Cancels changes
Alt-F10	Exits the program
Ins (Insert)	Inserts a new item for a list
F1	Displays online help
Arrow keys	Cycle through menu selections or entry fields

Step 3, option A: Setting up the printer as a print server (using PCONSOLE only)

To set up your LaserWriter 16/600 PS printer as a print server you must run PCONSOLE under DOS to specify the print server (PSERVER mode) and create a print queue.

IMPORTANT The procedures in this section are specific for a version of PCONSOLE running under NetWare 3.x. If you are running PCONSOLE under NetWare 4.x, the PCONSOLE menus and commands will differ slightly.

Specifying the print server

Your first task is to start PCONSOLE and specify the LaserWriter 16/600 PS as the print server.

- 1 **Log in to a file server from DOS on a client computer.**

IMPORTANT You must have supervisor or equivalent privileges to create a print server.

- 2 **At the DOS prompt, type `PCONSOLE` and press Enter.**

The utility starts and the Available Options menu appears, displaying printer console options.

```
Change Current File Server
Print Queue Information
Print Server Information
```

IMPORTANT If you are running PCONSOLE under NetWare 4.x, you must run the utility in bindery emulation mode. Press F4 to toggle between bindery and directory services mode.

- 3 Use the arrow keys to highlight Print Server Information in the menu, and press Enter.**

If available, a list of print servers appears.

Example

```
APPLE_LW6C4B3D
APPLE_LWF40B99
APPLE_LWF40B8D
APPLE_LWF40BE9
```

- 4 Press Ins, then type the NetWare printer name (provided on the printer's startup page) and press Enter.**

The last six digits in the NetWare printer name are from the printer's Ethernet address.

The new name now appears in the list of available print servers.

IMPORTANT If multiple file servers are to be serviced by a single printer, this name must be the same on each server.

Assigning the operating mode

Now that you've named the printer in PCONSOLE, you assign PSERVER mode to the printer by specifying the mode and the name you want to assign to the printer for notification purposes.

- 1 If it is not already selected, select the name of the print server you specified in the previous procedure and press Enter.**

The Print Server Information menu appears, listing options for specifying the printer.

```
Change Password
Full Name
Print Server Configuration
Print Server ID
Print Server Operators
Print Server Users
```

- 2 Select Full Name and press Enter.**

- 3** At the prompt, enter `PSEVER "printer_name"`, where *printer_name* is a name for the selected printer that will be used only for notification of job status. (Be sure to enclose the printer name in quotation marks.)

Example

```
PSEVER "Sales Laserwriter"
```

- 4** Press Enter, then press Esc twice to return to the Available Options menu.

Now that the print server is specified and an operating mode is selected, you need to create a print queue and associate it with the print server, as described in the next section.

Creating a print queue and associating it with the print server

In this section you will create a print queue to associate with the printer.

- 1** In the Available Options menu, select Print Queue Information and press Enter.

The Print Queue window appears, listing currently existing queues (if any exist).

- 2** Press Ins to create a new print queue.

- 3** At the prompt, type the new queue name and press Enter.

The new queue name now appears in the list of print queues.

- 4** If the new queue name is not already selected, use the arrow keys to highlight the queue name and press Enter.

The Print Queue Information menu appears, displaying options for managing the print queue.

```
Current Print Job Entries
Current Queue Status
Currently Attached Servers
Print Queue ID
Queue Operators
Queue Servers
Queue Users
```

- 5 In the Print Queue Information menu, select Queue Servers and press Enter.**

The Queue Servers window appears. Because you have not yet assigned a server to the queue, the listing should be empty.

- 6 Press Ins to view a list of available queue servers.**

The Queue Server Candidates menu appears, listing candidates for queue servers.

- 7 Select the name of the print server you created earlier and press Enter.**

The selected server now appears in the Queue Servers window, indicating that the queue is now associated with that server.

- 8 Press Esc until PCONSOLE quits.**

You will be asked to confirm your exit from PCONSOLE.

- 9 Turn the printer off and then back on (or use the LWPMAN utility to reset the printer).**

The LaserWriter 16/600 PS is now ready to function as a print server on the NetWare network.

What to do next: If you want to use the printer to print forms, skip to “Step 4: Enabling Forms With LWFORM (PSERVER Only).” Otherwise, skip to “Step 5: Making Sure That Everything is Working.”

Step 3, option B: Setting up the printer as a print server (using PCONSOLE and LWPMAN)

If you want to specify a descriptive printer name, a password, or queue scan time, you must use both PCONSOLE and the LWPMAN utility to provide configuration information.

IMPORTANT The procedures in this section are specific for a version of PCONSOLE running under NetWare 3.x. If you are running PCONSOLE under NetWare 4.x, the PCONSOLE menus and commands will differ slightly.

Specifying the print server

Your first task is to start PCONSOLE and specify the print server.

- 1 Log in to a file server from DOS on a client computer.

IMPORTANT You must have supervisor or equivalent privileges to create a print server.

- 2 At the DOS prompt, type `PCONSOLE` and press Enter.

The utility starts and the Available Options menu appears, displaying printer console options.

```
Change Current File Server
Print Queue Information
Print Server Information
```

IMPORTANT If you are running PCONSOLE under NetWare 4.x, you must run the utility in bindery emulation mode. Press F4 to toggle between bindery and directory services mode.

- 3 Use the arrow keys to highlight Print Server Information in the menu and press Enter.

If available, a list of print servers appears.

- 4 **Press Ins, then type a descriptive print server name and press Enter.**

Example

```
Sales_LaserWriter
```

PCONSOLE automatically substitutes an underbar for spaces in the print server name. (Later on, you must specify the exact same name in LWPMAN.)

The new name now appears in the list of available print servers.

IMPORTANT If multiple file servers are to be serviced by a single printer, this name must be the same on each server.

- 5 **Press Esc until you return to the Available Options menu.**

You have now specified the print server in PCONSOLE. If you wish, you can now assign a password for the printer, as described in the following section. If you don't want to assign a password, skip to "Creating a Print Queue and Associating It With the Print Server."

Assigning a password (optional)

You can use PCONSOLE to assign a password for printing privileges. However, if you assign a password in PCONSOLE, you must also use the LWPMAN utility to specify the same password, as described in "Using LWPMAN for PSERVER Configuration," later in this chapter. (The password specified in PCONSOLE tells the file server what to expect; the password specified with LWPMAN tells the printer what to send.)

- 1 **Select Print Server Information from the Available Options menu in PCONSOLE and press Enter.**

The list of print servers appears.

- 2 Select the name of the print server you specified in the previous procedure and press Enter.**

The Print Server Information menu appears.

```
Change Password
Full Name
Print Server Configuration
Print Server ID
Print Server Operators
Print Server Status/Control
Print Server Users
```

- 3 Select Change Password and press Enter.**

- 4 At the prompt, type the password and press Enter.**

PCONSOLE asks you to retype the password. (The characters are not displayed as you type.)

- 5 Retype the password and press Enter.**

IMPORTANT Record the password for later use. If multiple file servers will be served by the same printer, the same password must be used on each server.

- 6 Press Esc twice to return to the Available Options menu.**

Creating a print queue and associating it with the print server

After specifying the print server, you need to create a print queue to associate with the printer.

- 1 In the Available Options menu of PCONSOLE, select Print Queue Information and press Enter.**

The Print Queues window appears, listing any currently existing queues.

- 2 Press Ins to create a new print queue.**

- 3 At the prompt, type the new queue name and press Enter.**

The new queue name now appears in list of print queues.

- 4 If the new queue name is not already selected, use the arrow keys to highlight the queue name and press Enter.**

The Print Queue Information menu appears, displaying options for managing the print queue.

```
Current Print Job Entries
Current Queue Status
Currently Attached Servers
Print Queue ID
Queue Operators
Queue Servers
Queue Users
```

- 5 In the Print Queue Information menu, select Queue Servers and press Enter.**

The Queue Servers window appears. Because you have not yet assigned a server to the new queue, the listing should be empty.

- 6 Press Ins to view a list of available queue server candidates.**

The Queue Server Candidates menu appears, listing candidates for queue servers.

- 7 Select the name of the print server you created earlier and press Enter.**

The selected server now appears in the Queue Servers window, indicating that the queue is now associated with that server.

- 8 Press Esc until PCONSOLE quits.**

You will be asked to confirm your exit from PCONSOLE.

Although you have named the print server and created a print queue, you have not yet associated the print server name with the LaserWriter 16/600 PS. You must now use the LWPMAN utility to complete the configuration.

Using LWPMAN for PSERVER configuration

After using PCONSOLE, you complete the configuration by using the LWPMAN utility to add the optional configuration information. (By default the utility is stored in C:\NETUTIL.)

- 1 On the file server, change the directory to the directory in which LWPMAN is stored, then type `LWPMAN` at the DOS prompt and press Enter. (Do not run the utility from Windows.)**

A window appears, displaying the NetWare names for Apple LaserWriter 16/600 PS printers on the network, their Ethernet addresses, and their operating modes.

Example

APPLE_LW2B3BEB	08.00.07.2b.3b.eb	PSERVER
APPLE_LW6B3062	08.00.07.6b.30.62	PSERVER*
APPLE_LW2C6B42	08.00.07.2c.6b.42	UNKNOWN*

PSERVER and RPRINTER modes identify a printer that was set up using LWPMAN. PSERVER* and RPRINTER* identify printers set up with PCONSOLE only and still using factory defaults. UNKNOWN identifies a printer that has not yet been configured.

If your printer is properly connected to the network, it will be identified by its NetWare printer name (provided on your printer's startup page.) The descriptive name you specified in PCONSOLE does not yet appear in the listing.

- 2 Use the arrow keys to highlight the name of the printer you are specifying as a print server and press Enter.**

The User Selections menu appears, displaying options for configuring the printer's NetWare interface.

```
Configure the Printer NetWare Interface
Restore to factory default configuration
Display configuration/status information
Reset the Printer NetWare Interface
Print configuration Page
```

- 3 Select the option "Configure the Printer NetWare Interface" and press Enter.**

The Configuration Selections menu appears, displaying options for configuring the printer.

```
Configure for PSERVER mode
Configure for RPRINTER mode
```

- 4 Select the option “Configure for PSERVER Mode” and press Enter.**

The PSERVER Mode menu appears, displaying options for setting up the printer in PSERVER mode.

```
PSERVER Mode  
File Servers to be Serviced: <See List>  
Print Server Name: APPLE_LW2B3BEB  
Print Server Password:  
Queue Scan Time: 40
```

To set up the printer in PSERVER mode, you need to specify the file server that will provide the print service.

- 5 Press Ins to display the file servers to be served.**

If this is the first time you are specifying a file server, the listing should be empty.

- 6 Press Ins again to display a listing of available file servers.**

- 7 Select a file server from the list and press Enter.**

LWPMAN now identifies the server as a file server to be served.

- 8 Press Esc to dismiss the dialog box.**

- 9 In the PSERVER Mode menu, tab to the Print Server Name field and type *exactly* the same descriptive name you specified in the PCONSOLE utility.**

This name will be used for notification purposes.

- 10 If you specified a password in PCONSOLE, tab to the Print Server Password field and type *exactly* the same password you specified in the PCONSOLE utility.**

LWPMAN asks you to retype the password. (The characters are not displayed as you type.)

- 11 Retype the password and press Enter.**

Now that the print server has been specified and a password provided, you can provide a queue scan time, a value that specifies how often the print server will check the queue for print jobs.

- 12** Tab to the Queue Scan Time field and type a value to specify the scan time in tenths of a second. (Press Shift-Tab to move backward through the configuration fields.)

The default scan time is 4 seconds (displayed as 40). You can enter any number in the range of 1–255.

- 13** Press Esc twice to exit the PSERVER menu and the Configuration Selections menu.

LWPMAN prompts you to save your changes before resetting the printer.

- 14** Choose Yes to save your changes and reset the printer's NetWare interface.

LWPMAN asks you to wait while it resets the printer's NetWare interface. After reset, the descriptive printer name now appears in the listing.

- 15** Select the printer name and press Enter.

The User Selections menu appears.

- 16** Choose Display Configuration/Status Information from the Configuration Selections menu to display any error messages generated by the configuration.

See Chapter 12 for detailed information about any error messages.

- 17** Press Esc to exit the utility.

LWPMAN asks you to confirm the exit.

When the utility quits, the LaserWriter 16/600 PS is ready to function as a print server on the NetWare network. If you specified a password, the printer uses it to log in to the file server.

What to do next: If you want to use the printer to print forms, skip to “Step 4: Enabling Forms With LWFORM (PSERVER Only).” Otherwise, skip to “Step 5: Making Sure That Everything is Working.”

Step 3, option C: Setting up the printer as a remote printer (RPRINTER mode)

To configure your LaserWriter 16/600 PS printer as a remote printer, you must use PCONSOLE to specify the print server that will provide service to your printer, create a print queue (if necessary), and associate a print queue with the print server.

Specifying a print server

- 1 Log in to a file server from a DOS client PC.

IMPORTANT You must have supervisor or equivalent privileges to select a print server.

- 2 At the DOS prompt, type PCONSOLE and press Enter.

The utility starts and the Available Options menu appears, displaying printer console options.

```
Change Current File Server
Print Queue Information
Print Server Information
```

IMPORTANT If you are running PCONSOLE under NetWare 4.x, you must run the utility in bindery emulation mode. Press F4 to toggle between bindery and directory services mode.

- 3 Use the arrow keys to highlight Print Server Information in the menu and press Enter.

If available, a list of available print servers appears.

- 4 If the print server does not yet exist, press Ins, type the print server name, and press Enter.

IMPORTANT The print server name you enter in PCONSOLE must match a print server NLM, VAP, or a RPRINTER.EXE stored on a dedicated computer.

- 5 In the Print Server menu, select the print server you want to use and press Enter.**

The Print Server Information menu appears.

```
Change Password
Full Name
Print Server Configuration
Print Server ID
Print Server Operators
Print Server Status/Control
Print Server Users
```

- 6 Select Print Server Configuration and press Enter.**

The Print Server Configuration menu appears, displaying options for configuring the print server.

```
File Servers To Be Serviced
Notify List For Printer
Printer Configuration
Queues Service by Printer
```

- 7 Select Printer Configuration and press Enter.**

The Defined Printers menu of configured printers appears.

Example

```
Not Installed      0
Not Installed      1
Not Installed      2
```

- 8 Use the arrow keys to select an unassigned printer number for your printer and press Enter.**

A Configuration window appears for the selected printer.

Example

Name: Printer 2
Type: Defined elsewhere

Use Interrupt:
IRQ:

Buffer size in K:

Starting form:
Queue service mode:

Baud rate:
Data bits:
Stop bits:
Parity:
Use X-on/X-off

- 9 Press the down arrow key to move to the Type field and press Enter.**

A menu of printer types appears.

- 10 From the list of printer types, select Remote Other/Unknown and press Enter.**

Remote Other/Unknown now appears in the Type field of the Configuration window.

- 11 Press Esc once to save the configuration.**

PCONSOLE asks you to confirm the new configuration.

- 12 Select Yes and press Enter to confirm the changes.**

The newly defined printer now appears in the list of configured printers.

- 13 Press Esc until you return to the Print Server Information menu.**

Now that the print server is specified, you need to assign the operating mode to the printer.

Assigning the operating mode

You specify RPRINTER mode for the printer by assigning the mode with the PCONSOLE Full Name command.

- 1 Use the arrow keys to highlight Print Server Information in the menu of PCONSOLE and press Enter.**

If available, a list of print servers appears.

- 2 Press Ins, then type the NetWare printer name (provided on your printer's startup page) and press Enter.**

The new name now appears in the list of available print servers.

- 3 If it is not already selected, select the newly defined printer from the list and press Enter.**

The Print Server Information menu appears.

```
Change Password
Full Name
Print Server Configuration
Print Server ID
Print Server Operators
Print Server Status/Control
Print Server Users
```

- 4 In the Print Server Information menu, select Full Name and press Enter.**
- 5 At the prompt, enter `RPRINTER print_server printer_number`, where `print_server` is the name of the print server VAP, NLM, or RPRINTER.EXE executable that must be loaded to provide print service, and `printer_number` is the number of the printer assigned to be serviced (the same number you specified in the previous procedure).**

Example

```
RPRINTER PS486 2
```

- 6 Press Enter, then press Esc until you return to the Available Options menu.**

The operating mode is set. You now need to create a print queue to associate with the print server.

Creating a print queue

- 1 In the Available Options menu of PCONSOLE, select Print Queue Information and press Enter.**

The Print Queue menu appears, displaying the names of existing print queues.

- 2 Press Ins to create a new print queue.**

- 3 At the prompt, type a name for the new queue and press Enter.**

The new print queue now appears in the list.

- 4 With the new queue name selected, press Enter.**

The Print Queue Information menu appears.

- 5 In the Print Queue Information menu, select Queue Servers and press Enter.**

A list of queue servers appears.

- 6 Press Ins to view a list of queue server candidates.**

- 7 Select the name of the logical print server that was specified earlier and press Enter.**

The name of the server now appears in the Queue Servers list.

- 8 Press Esc until you return to the Available Options menu.**

Now that the print queue exists, you must associate it with the print server you specified earlier.

Associating a print server with the print queue

After you've created a new print queue, you need to associate the print server with the queue.

- 1 In the Available Options menu of PCONSOLE, select Print Server Information and press Enter.**

The Print Servers menu appears, displaying the names of existing print servers.

- 2 Select the print server that will provide service to the LaserWriter 16/600 PS and press Enter.**

The Print Server Information menu appears.

3 Select Print Server Configuration and press Enter.

The Print Server Configuration menu appears, displaying options for configuring the print server.

4 Select “Queues Serviced by Printer” and press Enter.

The Defined Printers menu appears. It should list the printer number you specified in the earlier procedure.

5 Select the printer you defined earlier from the list and press Enter.

A window appears, listing any queues associated with the selected printer. If this is the first time you are associating a queue with a printer, it should be empty.

6 Press Ins to view a list of available queues.

7 Select the queue you created in the earlier procedure and press Enter.

The Priority dialog box appears, prompting you to enter a priority number for the queue.

8 Type a priority number between 1 and 10 in the provided field and press Enter.

PCONSOLE identifies the file server, the queue associated with the print server, and the queue's priority number.

9 Press Esc until PCONSOLE quits.

PCONSOLE prompts you to confirm the changes before it quits.

You must now reload the PSERVER software (if it previously existed) from the file server console so that the update configuration is available to the network. (If no PSERVER software was previously loaded, skip to step 11.)

Step 4: Enabling forms with LWFORM (PSERVER only)

This step is optional. Read these instructions only if you have set up the printer in PSERVER mode and you want to print forms with the LaserWriter 16/1600 PS. Otherwise, skip to “Step 5: Making Sure That Everything is Working.”

If you configured the printer as a print server (PSERVER mode) and use forms, the LWFORM DOS command line utility allows you to enable or disable forms, set form numbers, and enable or disable notification. By default, notification is turned off. (The NetWare Utilities Custom Installation stores the utility in `c:\NETUTIL` by default.)

If you enable forms, the printer will service only those jobs providing a specified form number. It's a good idea to enable notification so that if the printer encounters a job with a different form number, you will be notified that the correct form number is required for printing.

Run LWFORM from DOS only; do *not* run it from Windows.

The syntax of the utility is as follows:

```
LWFORM /PrinterNumber=printer_number /Forms /NoForms /Notify  
/NoNotify /FormNumber=n
```

You can enter any or none of the parameters as part of the command.

Note: As a shortcut, you can type the capital letters in each parameter. For example, to turn off notification, you can enter NN (for NoNotify).

The *printer_number* variable is the last six digits of the default NetWare printer name of your LaserWriter 16/600 PS (obtained from the startup page). Typing only the `PrinterNumber` parameter displays the current configuration.

The following example enables forms on the LaserWriter 16/600 PS, sets the form number to 1, and enables notification:

```
LWFORM /PrinterNumber=2B35E84C /Forms /FormNumber=1  
/Notify
```

Step 5: Making sure that everything is working

After you've used PCONSOLE (and optionally, LWPMAN) to configure your printer as a dedicated print server or a remote printer, you can use the DOS NPRINT command to verify that your printer is communicating with the rest of the network.

Log in to the network and enter the NPRINT command, using the following syntax:

```
NPRINT filename /q=queue_name /s=file_server_name /no banner
```

Replace the variable *filename* with the name of an ASCII text file (for example `autoexec.bat`). Replace the variable *queue_name* with the name of the print queue you created in PCONSOLE. Replace the variable *file_server_name* with the name of the file server on which the specified queue resides. Typing NPRINT only returns the possible parameter list.

Step 6: Setting up client computers for network printing

After the LaserWriter 16/1600 PS is set up as a print server or remote printer on a NetWare network, the client computers must be set up for printing. You can find detailed installation instructions in Chapter 7. You can set up all the client computers yourself or give the users the instructions from Chapter 7. If you ask the users to set up their own computers, be sure you give them all the information they need, such as the printer's queue names and what options are installed.

What to do next

You may configure the printer for use as explained in the section "Configuring the Printer," later in this chapter.

Initial parallel connection setup

To connect the LaserWriter 16/600 PS directly to your IBM PC or compatible computer, you need a parallel interface cable, available from most computer dealers.

Set up the printer as described in Chapter 1, then install the Windows printer software as described in Chapter 7.

Configuring the printer

Though the printer itself has no control panel, you can configure it by using programs on computers connected to the printer:

- On Macintosh computers, use the Apple Printer Utility and the Chooser's setup function, which are described in Chapter 2.
- On IBM PC or compatible computers, use the LaserWriter Utility for Windows and the DOS utilities LWPMAN and LWFORM, all of which are described in this chapter.

Using the LaserWriter Utility for Windows

The LaserWriter Utility for Windows program supplied with the printer allows you to control various aspects of how the LaserWriter 16/600 PS works. Use the LaserWriter Utility to

- name the printer
- turn printing of a startup page on and off
- conserve power consumption by setting the energy-saving delay
- set paper-handling options
- see or print a list of printer fonts
- configure the printer's communication settings
- send PostScript files to the printer
- turn the printer's FinePrint feature on or off
- turn the printer's PhotoGrade feature on or off
- print a configuration page
- set the print density to lighten or darken printing
- restart the printer
- view page count

The settings you choose with the Laserwriter Utility Program will remain in effect until you change them.

Many of the configuration options described in this chapter are also available for Macintosh computers through the Apple Printer Utility, described in Chapter 2.

Note: The procedures in this chapter assume that you are using a mouse. If you are using a keyboard only for making selections, the standard Windows keyboard conventions for performing operations also apply to the LaserWriter Utility for Windows.

Installing the LaserWriter Utility for Windows

The LaserWriter Utility is automatically installed when you do an Express installation, as described in Chapter 7.

Opening and quitting the LaserWriter Utility for Windows

Before you begin: Make sure the LaserWriter 16/600 PS is selected in the Printers control panel.

- 1 Start Windows, if it's not already running.**
- 2 Go to the Program Manager window.**
- 3 Open the LaserWriter 16/1600 PS Software icon.**
- 4 Double-click the LaserWriter Utility for Windows icon.**

The utility presents the menu options listed in the following sections. You can use these menus to perform the functions detailed in the rest of this section.

- 5 When you're finished using the utility, choose Exit from the File menu.**

Selecting the printer

Before you can use the Utility to perform operations on a printer, you must select the printer you want to manage.

- 1 In the LaserWriter Utility program, choose Select Printer from the File menu.**

The Select Printer dialog box appears, listing the types of printers that can be connected to your computer.

- 2 Click LaserWriter 16/600 PS, then click OK.**

Naming the printer

Each LaserWriter 16/600 PS can be given an individual name for AppleTalk networks. Use the following procedure to rename the LaserWriter 16/600 PS.

- 1 **In the LaserWriter Utility program, choose Name Printer from the Utilities menu.**

The Name Printer dialog box appears.

- 2 **Type the new name.**

- 3 **Click Rename.**

A page prints confirming the printer's new name.

Be sure to tell users what the printer name is and what zone it's located in when you install the printer software on their computers or instruct them to do so.

Turning the startup page on or off

The LaserWriter 16/600 PS normally prints a sample page when you turn the printer on. This page shows the printer's name, the total number of pages printed, the amount of memory, and communication settings. You can turn this feature off if you wish.

- 1 **In the LaserWriter Utility program, choose Set Startup Page from the Utilities menu.**

A dialog box appears that allows you to turn the startup page on or off.

- 2 **Click On or Off.**

- 3 **Click OK.**

A page prints confirming the choice.

Conserving energy

Your LaserWriter 16/600 PS automatically reduces its power consumption after 60 minutes of inactivity. You can lengthen or shorten the time that the printer remains idle before it reduces its power consumption. Once the printer turns down its power, it will need to warm up again before printing the next document. You or network users may experience a small delay in printing. You may want to adjust the delay interval to avoid overly frequent warm-up periods.

Note: If you send a job to the printer when it is in the energy-saving mode, it automatically returns to full power.

- 1 In the LaserWriter Utility program, choose Energy Saving Delay from the Utilities menu.**

The Energy Saving Delay dialog box appears.

- 2 Click the arrow in the Delay box and select a new delay.**
- 3 Click OK.**

A page prints confirming the choice.

Setting paper-handling options

When the LaserWriter 16/600 PS runs out of paper in one tray, it can automatically switch and use paper in the paper cassette or multipurpose tray. By using automatic tray switching between the 250-sheet paper cassette and the 100-sheet multipurpose tray, you can print 350 sheets without reloading paper.

You can also set the printer to use a particular size paper in the multipurpose tray.

- 1 In the LaserWriter Utility program, choose Paper Handling from the Utilities menu.**

The Paper Handling dialog box appears.

- 2 Click On or Off below Automatic Tray Switching.**
- 3 Choose a paper size from the Paper Type pop-up menu.**
- 4 Click OK.**

A page prints confirming the choice.

Printing a list or samples of printer fonts

You can print a list or samples of the PCL or PostScript fonts currently stored in the printer's memory or attached hard disk.

- 1 In the LaserWriter Utility program, choose Print PostScript Fonts or Print PCL Fonts from the File menu.**

For PCL fonts, samples print automatically. For PostScript fonts, the Print Fonts dialog box appears.

- 2 Click Print Font Catalog or Print Font Samples.**

PostScript Font samples or a list of PostScript fonts are printed.

Viewing or changing communication settings

Except for LocalTalk, each LaserWriter 16/600 PS interface (EtherTalk, NetWare, TCP/IP, and Parallel) has associated configuration parameters that you can change through the LaserWriter Utility.

- 1** In the LaserWriter Utility program, choose **Configure Communications** from the **Utilities** menu.
- 2** Choose **Switch Setting** from the **View/Set Switch Setting** pull-down menu.
- 3** Choose the port from the **Port** pull-down menu.

When you choose a network type, additional options may become active in the dialog box.

- 4** Make the desired changes.
- 5** Click **Set Port**.

IMPORTANT For communication settings to take effect, the switch on the printer must be in the up (☐) position.

Sending PostScript files to the printer

You can download PostScript files to the printer to print a PostScript program or Encapsulated PostScript (EPS) file, or to run a PostScript program to change the internal settings of the LaserWriter 16/600 PS. A PostScript file can be created in a variety of text-editing programs.

For more information on setting up the printer for use with Windows and DOS applications, see Chapter 7.

- 1** In the LaserWriter Utility program, choose **Download PostScript File** from the **Utilities** menu.

A dialog box appears.

- 2** Select the file you want to download.
- 3** Click **OK**.

The file is downloaded to the LaserWriter 16/600 PS.

Setting imaging options

The LaserWriter Utility allows you to specify some printer imaging options, including the control of FinePrint and Photograde options and the setting of screen frequency and angle.

FinePrint smoothes out lines and curves and enhances text and line graphics that would normally appear jagged.

PhotoGrade enhances the printed look of images, such as scanned photographs, to produce added clarity, finer shading, and better contrast. For documents that require images to be printed with the best quality that the printer can produce, turn PhotoGrade on.

IMPORTANT PhotoGrade is available only when the LaserWriter 16/600 PS has been upgraded to a minimum of 12 megabytes (MB) of RAM. You can upgrade your printer memory by purchasing the Macintosh 4 MB Memory Expansion Kit (1-4 MB SIMM), part number M1507LL/A. For more information about expanding the printer's memory, ask an Apple-authorized dealer.

Having both FinePrint and PhotoGrade on can affect how images print. For documents that have many images and require high-quality reproduction, you may want to turn FinePrint off. To determine the effect of printing using FinePrint and PhotoGrade, you can print portions of a document with FinePrint and PhotoGrade turned on or off to see the differences in printed output.

- 1 In the LaserWriter Utility Program, choose **Imaging Options** from the **Utilities** menu.

The Imaging Options dialog box appears.

- 2 Click **On** or **Off** next to **FinePrint**.
- 3 Click **On** or **Off** next to **PhotoGrade**.
- 4 Drag the **Frequency/Angle** slider to set screen angle and resolution.
- 5 Click **OK**.

A page prints confirming the choice.

Printing the configuration page

- In the LaserWriter Utility program, choose **Print Configuration Page** from the Utilities menu.

The configuration page prints, providing information about the printer's current configuration, including installed RAM, communications settings, and SCSI ID.

Setting the print density

If your documents are printing too light or too dark, you can adjust the print density of the printer to print lighter or darker text and images.

- 1 In the LaserWriter Utility program, choose **Print Density** from the Utilities menu.

The Print Density dialog box appears.

- 2 Drag the slider right or left to increase or decrease the print density.

- 3 Click **Set**.

A page prints confirming the choice.

Printing the page count

The LaserWriter 16/600 PS stores a running total of the number of pages it has printed. This total is printed on the startup page when you start the printer (if the startup page option is turned on). You can also print it using the LaserWriter Utility.

- In the LaserWriter Utility program, choose **Print Page Count** from the Utilities menu.

A page prints listing the number of pages printed to date.

Specifying a font symbol set

You can use the LaserWriter Utility to specify a font symbol set for use in HP LaserJet emulation.

- 1 In the LaserWriter Utility program, choose **Font Symbol Set** from the Utilities menu.

The Specify a Symbol Set dialog box appears.

- 2 Select a symbol set from the pop-up menu and click **OK**.

Restarting the printer

You may need to restart the printer to clear its memory if you have any problems printing. For more information about troubleshooting printing problems, see Chapters 11 and 12.

1 Choose Restart Printer from the Utilities menu.

A dialog box appears, asking you to confirm that you want to restart the selected printer.

2 Click Restart.

It takes a few minutes for the printer to restart and be ready to print.

The same effect can be achieved by turning the printer off and then on again.

IMPORTANT If the LaserWriter 16/600 PS is on a network shared by other users, make sure that no one is attempting to use the printer before you restart it.

Banner pages and NetWare

Depending on your printer's operating mode (PSERVER or RPRINTER), the type of job sent to the printer (PostScript or PCL5), and the interpreter mode (AutoSelect, PostScript, or PCL5) set for the job, the LaserWriter 16/600 PS may encounter difficulties when printing a banner page.

If problems occur, you can turn off banner pages through the NetWare PRINTCON utility by modifying the print job configuration for the desired print queue.

Some guidelines for coordinating printing of a banner page and a document are listed below.

RPRINTER mode

When the printer is in RPRINTER mode, the banner page is usually generated by the print server as text. The banner page will print without problems only if the NetWare interface is configured for AutoSelect or PCL5 mode.

Problems will occur if the document following the banner is a PostScript document. Because the banner and document are generated in a batch, the document will print as PostScript source code unless you are running print server software that supports PostScript banner pages. If the NetWare interface is configured for PostScript mode, text banner pages will generate PostScript errors. (PostScript error reports are generated if PostScript error handling has been enabled through the Printers control panel.)

PSERVER mode

When the printer is in PSERVER mode, the banner page is generated as a PostScript job and the document will print without problems unless PCL5 mode is selected.

What to do next

The printer is now set up for Windows and DOS computers. If you want to install any options, see Chapter 5. To learn how to print from Windows or DOS computers, see Chapter 7. To set up the printer for UNIX users, see Chapter 4.

4

Setting Up the Printer for UNIX Users



This chapter explains how to prepare the printer for UNIX users. Users' computers must be connected to the printer by an Ethernet network using TCP/IP (Transmission Control Protocol/Internet Protocol).

Initial TCP/IP setup

Before UNIX users can use the printer, the printer administrator must assign an IP address for the printer, as described in the following sections.

Will these instructions work for my flavor of UNIX?

The instructions in this section describe how to perform the initial TCP/IP setup for most flavors of UNIX that use the Remote Line Printer Daemon (`lpd`) protocol. These include almost all versions of UNIX based on the Berkeley Software Distribution (BSD), including Apple's own UNIX implementation, A/UX.

For information on other systems, see "Notes on Configuring Specific UNIX Systems," later in this chapter.

Background information

TCP/IP is a protocol commonly used to connect UNIX systems over Ethernet networks. Every TCP/IP device must have a unique IP address. Much of the initial work the printer administrator must do is related to assigning an IP address (and a number of associated aliases) to the printer.

Before you begin

Set up the printer as described in Chapter 1, remembering to

- unpack and prepare the printer
- connect the printer to your TCP/IP network using Ethernet cables
- plug in and turn on the printer (Keep the startup page that automatically prints out. It contains information you'll need.)

Step 1: Installing the software the printer administrator needs

You don't need to install any special UNIX software to administer the printer. You can control many features of the printer's TCP/IP interface by using a terminal emulation program like `telnet`, as explained later in this chapter; you can control other features of the printer by using the Apple Printer Utility program on a Macintosh computer (see Chapter 2) or LaserWriter Utility for Windows (see Chapter 3) on IBM PC or compatible computers.

Step 2: Obtaining an IP address for the printer

To be recognized on your TCP/IP network, your printer must be assigned an IP address. Part of the address identifies your site; the other part uniquely identifies the device. Most sites have a network administrator who dispenses IP addresses for all new network devices. Contact your network administrator for an IP address for the printer.

WARNING If your TCP/IP network contains devices with duplicate or incorrect IP addresses, you may experience unpredictable network behavior, or your network may cease to function. Make sure you obtain a valid and unique IP address for the printer.

Step 3: Assigning an IP address to the printer

When you unpack the printer, it has a unique permanent factory-assigned Ethernet address, but no IP address. To assign an IP address to the printer, you can use any one of the following methods, which are described more fully in the sections that follow:

- **Ping assignment.** Any printer administrator with superuser privileges can use this method, which is sometimes called “gleaning.” If your network has neither RARP nor BOOTP services, and you have no access to Windows or Macintosh computers, you must use this method.
- **Macintosh Apple Printer Utility and LaserWriter Utility for Windows.** If your network includes a Macintosh computer or Windows computer, you can use one of these utility programs to set the printer’s IP address.
- **RARP (Remote Address Resolution Protocol).** If your network has a RARP server, you can use this method.
- **BOOTP (Bootstrap Protocol).** If your network has a BOOTP server, you can use this method.

These methods are described in the next three sections. Choose which section applies to you, and skip the others.

Printer IP address assignment, option A: Using ping assignment

Any printer administrator with superuser privileges can use the ping assignment method to assign the printer’s IP address and store it in the printer’s nonvolatile memory (so it remembers the address even when the printer is turned off).

Note: This method works only when the printer has no IP address. If you’ve already set the printer’s IP address, you cannot change it by using this method.

- 1 Turn on the printer and save the startup page that prints out.
- 2 Log in as `root` to any UNIX workstation on the same subnet as the printer.

- 3** Add the following line to the `/etc/hosts` table on your workstation:

```
printer_IP_address printer_IP_name
```

You obtain the printer IP address from your network administrator. You choose the printer IP name yourself (if it was not assigned by the network administrator). It must follow the naming convention of your system, which generally means it must contain fewer than 32 characters and no special characters except underbar (`_`).

Example

```
80.20.0.0 LaserWriterFloor2
```

- 4** Type the following command to force an entry into your system's `arp` table:

```
arp -s printer_IP_name printer_Ethernet_address
```

The printer IP name is the same name you used in step 3. You obtain the Ethernet address from the startup page that prints automatically when you turn on the printer. The address appears next to the top icon on the page.

Example

If your startup page showed that your Ethernet address was 08:00:07:2b:48:fb, you would type

```
arp -s LaserWriterFloor2 08:00:07:2b:48:fb
```

- 5** Type the following `ping` command to store the Printer IP Address in the printer's memory:

```
ping printer_IP_name
```

The printer IP name is the same name you used in steps 3 and 4.

Example

```
ping LaserWriterFloor2
```

Normally, the `ping` command would result in a message telling you the device received the `ping` command; however, the printer will not respond this first time, though it will respond normally in the future.

The address is now stored in the printer's memory, and you're ready to test whether the printer is working.

- 6** To test the connection, once again type the `ping` command from a workstation on the same subnet as the printer:

```
ping printer_IP_name
```

If the `ping` command responds by telling you that the printer is alive on the network, the address assignment was successful.

If the `ping` command does not respond, or tells you the printer was not found, then the address assignment failed. Try the steps in this procedure again, making sure you type the printer's Ethernet address exactly as it appears on the startup page. If it still doesn't work, see the troubleshooting suggestions in Chapter 12.

- 7** Skip to “Step 4: Making Sure Everything is Working,” later in this chapter.

Printer IP address assignment, option B: Using Macintosh or Windows utilities

If you have a Macintosh computer connected to the printer, you can use the Apple Printer Utility to assign the printer's IP address, as described in Chapter 2.

If you have a Windows computer connected to the printer, you can use the LaserWriter Utility for Windows to assign the printer's IP address, as described in Chapter 3.

After you have assigned the printer's IP address, skip to “Step 4: Making Sure Everything is Working,” later in this chapter.

Printer IP address assignment, option C: Using a RARP or BOOTP server

Note: This method works only if the printer has not been assigned an IP address. You cannot use this method to change an existing IP address.

If your network has a RARP or BOOTP server on the same subnet as the printer, you can use it to assign the IP address to the printer. Each time the printer is turned on, it will automatically broadcast a request to RARP and BOOTP servers, which will search a configuration file that maps the printer's built-in Ethernet address to the IP address that you assign.

IMPORTANT When you use RARP or BOOTP to assign the printer's IP address, the address is not stored permanently in the printer; consequently, the RARP or BOOTP server must be available each time the printer is turned on. If you want to store the address permanently in the printer's nonvolatile memory, you must set the address using any of the other methods described in the previous or following sections. You may also store the address using the TCP/IP Printer Configuration Utility described later in this chapter.

Your network documentation explains how to add the printer's information to the RARP or BOOTP configuration file.

For troubleshooting information about RARP and BOOTP, see Chapter 12.

Step 4: Making sure everything is working

The best way to make sure everything is set up correctly is to print something. Before you can do that, you must set up your own workstation for printing, as described in the steps that follow. The procedure described here is intended to prepare for printing a sample page as quickly as possible; for more complete instructions, see “Getting UNIX Users Started Using the Printer,” later in this chapter.

Preparing your own workstation for printing

- 1 **Add the printer’s IP address and the printer’s IP name to your `/etc/hosts` file (if you haven’t already done so).**

Use the same IP address and IP name that you assigned to the printer in the previous section.

- 2 **Add the printer to your `/etc/printcap` file as a remote printer.**

You can add `printcap` options as you like. (To see the available options, look at your UNIX system’s man page for `printcap`.) Your entry should be similar to the following:

```
AppleLWTest|[LaserWriter_16_600_PS]:\  
    :lp=:mx#0:rm=printer_IP_name:\  
    :rp=text:\  
    :sd=path_to_this_queue’s_spool_directory:\  
    :lf=path_to_this_queue’s_log_file
```

Replace *printer_IP_name* with the IP name you assigned to the printer. Replace *path_to_this_queue’s_spool_directory* with the pathname of the unique directory created for this queue. Replace *path_to_this_queue’s_log_file* with the unique pathname of the file where error information from the `lpd` command will be logged.

Example

```
AppleLWTest|[LaserWriter_16_600_PS]:\  
:lp=:mx#0:rm=LaserWriterFloor2:\  
:rp=text:\  
:sd=/usr/spool/lpd/AppleLWTest:\  
:lf=/usr/spool/lpd/printerlog
```

Note: For a description of some of the parameters in this `printcap` entry, see “Getting UNIX Users Started Using the Printer,” later in this chapter.

3 Create and set the privileges for the spool directory specified in step 2.

Example

```
mkdir /usr/spool/lpd/AppleLWTest  
chown daemon /usr/spool/lpd/AppleLWTest  
chgrp daemon /usr/spool/lpd/AppleLWTest  
chmod g+w /usr/spool/lpd/AppleLWTest
```

Printing a test page

Most UNIX systems use either the `lpr` or `lp` command to print documents over a TCP/IP network. The print queue that you created in the previous section is for plain text ASCII documents. The `rp` parameter in the `printcap` entry tells the printer to add a carriage return to the end of each line.

The following commands show examples of how to print an ASCII file named `plain.txt` to the printer:

Examples

```
lpr -PAppleLWTest plain.txt
lp -d AppleLWTest plain.txt
```

If everything is working, the Ready/In Use indicator light on the printer (leftmost of the indicator lights) will blink, then the pages will print. If there's a problem, see Chapter 12 for troubleshooting tips.

Cleaning up the `printcap` file after testing the printer

You may want to delete the test entry you made in your `/etc/printcap` file and instead create two new ones as described in “Getting UNIX Users Started Using the Printer,” later in this chapter.

What to do next

You may configure the printer's TCP/IP interface as explained in the next major section. After the printer is configured, you can set up users' workstations as explained in “Getting UNIX Users Started Using the Printer.”

Notes on complex networks

- If your network has segments, you can set the subnet mask, as described in “Setting the Subnet Mask,” later in this chapter.
- If your network is connected to other networks, you can set the default gateway address, as described in “Setting the Default Gateway Address,” later in this chapter.

Configuring the printer

Though the printer itself has no control panel, you can configure it by using programs on computers connected to the printer:

- On UNIX workstations, log in to the TCP/IP Printer Configuration Utility using the UNIX `telnet` program, as described in the next section.
- On Macintosh computers, use the Apple Printer Utility and the Chooser's setup function, described in Chapter 2.
- On IBM PC or compatible computers, use the LaserWriter Utility for Windows and the DOS utilities LWPMAN and LWFORM, all of which are described in Chapter 3.

Each utility has some unique functions and some areas of overlap. For a list of each utility's functions, see Appendix A.

Using the TCP/IP Printer Configuration Utility

You can use `telnet`, a standard UNIX terminal emulation program, to log in to the printer's configuration utility. The changes you make in the utility affect all printer users on your TCP/IP network—you don't need to repeat this process for each workstation on the network. You can use the utility to

- print a configuration page
- show information about the TCP/IP interface
- turn PostScript banner pages on or off for TCP/IP print jobs
- change the printer's IP address
- set the TCP/IP subnet mask
- identify the default gateway IP address
- enable or disable TCP/IP connection timeout checking
- change the password for this utility
- reset the printer's TCP/IP interface
- restore all settings to the factory defaults

Logging in to the TCP/IP Printer Configuration Utility

To run the utility, follow these steps:

- 1 Use `telnet` to log in to the printer's TCP/IP Printer Configuration Utility by typing

```
telnet printer_IP_name
```

The printer responds by displaying a message on your screen welcoming you to the Configuration Utility.

- 2 Enter a password.

The first time you log in to the printer, it requires you to assign a password to the utility. The password must be between 5 and 10 characters long. The characters you type will not appear on the screen.

Subsequently, you will need to enter the password to use the utility. The characters you type will not appear on the screen.

Note: You can change the password using this utility, as explained later in this chapter.

Quitting the Configuration Utility

- 1 Go to the main menu of the TCP/IP Printer Configuration Utility.
- 2 Press Enter.
- 3 If you're asked if you want to save changes, type `Y` and press Enter to save the changes, or just press Enter to discard the changes.

Printing the configuration page

The configuration page shows setup information for the printer itself and for all of the network interfaces.

- 1 Go to the main menu of the TCP/IP Printer Configuration Utility.
- 2 Type `1` and press Enter.

Displaying information about the printer's TCP/IP interface

To see information displayed on your screen about the printer's TCP/IP interface, follow these steps:

- 1** Go to the main menu of the TCP/IP Printer Configuration Utility.
- 2** Type 2 and press Enter.

Turning the banner page feature on or off

The banner page feature prints an identification page at the beginning of each document. The banner page is printed using the PostScript page description language, so turn it on only if the printer's TCP/IP interface is set up to receive PostScript language print jobs, as it is by default.

To turn the banner page feature on or off for all jobs sent through the TCP/IP interface, follow these steps:

- 1** From the main menu of the TCP/IP Printer Configuration Utility menu, press 3 and Enter.

A pair of numbered choices is displayed: one to turn the feature on, the other to turn it off.

- 2** Type the number of your choice and press Enter.

Viewing or changing the printer's IP address

You must initially set the the printer's IP address using one of the methods described earlier in this chapter. Subsequently, you can use the TCP/IP Printer Configuration Utility to change the address or to store it permanently in the printer's nonvolatile memory.

- 1 From the main menu of the TCP/IP Printer Configuration Utility menu, press 4 and Enter.**

A pair of numbered choices is displayed. The first choice—"Use Network Protocol"—indicates that you want no IP address stored in the printer; the second choice indicates that you want to store an address in the printer's nonvolatile memory.

- 2 To change the address, press 2 and then Enter.**

- 3 Type the IP address in the following format, then press Enter:**

XXX.XXX.XXX.XXX, where each *XXX* is a number between 0 and 255.

To indicate that you don't want the printer to have an IP address, type *0.0.0.0* and press Enter. (This is identical to choosing "Use Network Protocol" in step 1.)

WARNING If your TCP/IP network contains devices with duplicate IP addresses, you may experience unpredictable network behavior, or your network may cease to function. Make sure you obtain a valid and unique IP address for the printer.

Setting the subnet mask

If your network includes subnets, you can set the subnet mask.

WARNING Use this option with care. If you enter an invalid subnet mask, you may not be able to access the printer.

- 1 From the main menu of the TCP/IP Printer Configuration Utility menu, press 5 and Enter.
- 2 When requested to do so, type the IP address of the subnet mask in the following format, then press Enter:

XXX.XXX.XXX.XXX, where each XXX is a number between 0 and 255.

To indicate that you don't want to specify a subnet mask, type 0.0.0.0 and press Enter.

Setting the default gateway address

If your local network is attached to other networks, you can specify the IP address of your local gateway. Whenever the printer needs to send messages to another network, it will use this gateway.

- 1 From the main menu of the TCP/IP Printer Configuration Utility menu, press 6 and Enter.
- 2 When requested to do so, type the IP address of the gateway in the following format, then press Enter:

XXX.XXX.XXX.XXX, where each XXX is a number between 0 and 255.

Note: If you enter an invalid address for the gateway or if the gateway goes down, the printer may not be able to communicate with remote networks.

Enabling or disabling connection timeout checking

The timeout feature automatically severs TCP/IP connections that are idle for more than 5 minutes. Under most circumstances, you should leave this function enabled.

- 1 From the main menu of the TCP/IP Printer Configuration Utility menu, press 7 and Enter.
- 2 Follow the instructions on your screen.

Changing the password for this utility

- 1 From the main menu of the TCP/IP Printer Configuration Utility menu, press 8 and Enter.
- 2 When requested to do so, type a 5–10 character password.

The characters you type will not appear on the screen.

Resetting the printer's TCP/IP interface

If you're having problems with your TCP/IP connection to the printer and can't solve the problem by any other means, you may try resetting the printer's TCP/IP interface.

- From the main menu of the TCP/IP Printer Configuration Utility menu, press 9 and Enter.

IMPORTANT If you reset the printer while a document is printing, it may not finish printing.

Restoring settings to their factory defaults

To restore the settings to their factory defaults:

- From the main menu of the TCP/IP Printer Configuration Utility menu, press 10 and Enter.

WARNING This option erases the utility's password and the printer's IP address. You must reset the address as described in "Assigning an IP Address to the Printer," earlier in this chapter.

IMPORTANT If you choose this option while a document is printing, it may not finish printing.

Using the Macintosh and Windows utilities to configure the printer

There are a number of other configuration choices you can make with the Macintosh and Windows utilities; for example, setting how long the printer should wait before going into its energy-saving mode. See Appendix A for a list of these options and Chapters 2 and 3 for details.

Getting UNIX users started using the printer

As in “Initial TCP/IP Setup,” earlier in this chapter, the instructions in this section describe how to set up workstations for most flavors of UNIX that use the Remote Line Printer Daemon (LPD) protocol. These include almost all versions of UNIX based on the Berkeley Software Distribution (BSD), including Apple’s own UNIX implementation, A/UX. For information on other systems, see “Notes on Configuring Specific UNIX Systems,” later in this chapter.

Commonly, printer administrators make entries in the `/etc/hosts` and `/etc/printcap` files on each user’s workstation to enable them to use the printer: The `/etc/hosts` entry identifies the printer’s IP name and address. The `/etc/printcap` file identifies different printing parameters.

Because UNIX ASCII text files require different handling from other files, most printer administrators will want to create two `printcap` entries for each printer: one that adds a carriage return to the end of each line (for text files) and another that doesn’t (for other files, including PostScript and PCL5 files). These steps describe this common scenario:

- 1 Add the printer’s IP name and IP address to each user’s `/etc/hosts` file.**

Use the same IP address and IP name that you assigned to the printer in “Assigning an IP Address to the Printer,” earlier in this chapter.

2 Make two entries to each user's `/etc/printcap` file—one for printing text files and the second for all others.

You can add `printcap` options as you like. (To see the available options, look at your system's man page for `printcap`.) Each entry should be similar in form to the following:

```
local_print_queue_name | [description_of_printer]: \  
:lp=:mx#0:rm=printer_IP_name: \  
:rp=raw_or_text: \  
:sd=path_to_this_queue's_spool_directory: \  
:lf=path_to_this_queue's_log_file:
```

Fill in the parameters in italics as follows:

- Replace *local_print_queue_name* with the queue name the user should use to reference the printer. Typically, queue names indicate the location of the printer and what sort of files it should be used for.
- Replace *description_of_printer* with a comment describing the printer.
- Replace *printer_IP_name* with the IP name you assigned to the printer in “Assigning an IP Address to the Printer,” earlier in this chapter.
- Replace *raw_or_text* with the word *raw* or the word *text*. In the `printcap` entry, this parameter is usually for the remote print queue name; however, since the LaserWriter 16/600 PS does not require a remote print queue name, it uses this parameter to determine how to handle the end-of-line character, as follows:
 - *text* indicates that the printer should append a carriage return to the end of each line in the document as it's printed; otherwise, each new line of text will start where the previous one left off, creating a staircase effect.
 - *raw* indicates that the printer should not add any special control characters to the document, as is appropriate for PostScript and PCL5 print jobs.
- Replace *path_to_this_queue's_spool_directory* with the pathname of the unique directory created for this queue.
- Replace *path_to_this_queue's_log_file* with the unique pathname of the file where error information from the `lpd` command will be logged.

Here's an example of a pair of `printcap` entries that allow users to print both text and other files to the same printer:

Example

```
KeithsLW_text|[LaserWriter_16_600_PS]:\  
    :lp=:mx#0:rm=LaserWriterFloor2:\  
    :rp=text:\  
    :sd=/usr/spool/lpd/KeithsLW_text:\  
    :lf=/usr/spool/lpd/printerlog  
KeithsLW_raw|[LaserWriter_16_600_PS]:\  
    :lp=:mx#0:rm=LaserWriterFloor2:\  
    :rp=raw:\  
    :sd=/usr/spool/lpd/KeithsLW_raw:\  
    :lf=/usr/spool/lpd/printerlog
```

- 3** Type the following command to change directories:

```
cd /usr/spool/lpd
```

- 4** Create and set the privileges for the two spool directories specified in step 2, as shown in this example:

Example

```
mkdir KeithsLW_raw KeithsLW_text  
chown daemon KeithsLW_raw KeithsLW_text  
chgrp daemon KeithsLW_raw KeithsLW_text  
chmod g+w KeithsLW_raw KeithsLW_text
```

- 5** Tell each user the name of their local print queues and what sorts of documents should be printed to each.

Note: You can use the `lpq` command to see the status of the print queues and print jobs.

Notes on configuring specific UNIX systems

The following sections describe how to configure certain UNIX systems.

Configuring HP-UX version 8.07

- 1** Assign an IP address and IP name to the printer, as described in “Assigning an IP Address to the Printer,” earlier in this chapter.
- 2** Make sure the printer’s IP name and IP address are entered in the `/etc/hosts` file.
- 3** Log in to the system console as `root`.

The System Administration Manager (SAM) uses a screen-oriented interface that works best at the console.

- 4** Run the SAM utility by typing `sam` at the UNIX prompt.
- 5** Select the following options, in order, from the SAM menu:

Peripheral devices

Printers and Plotters

Actions

Add a Remote Printer (Do *not* select “Add a Network Printer.”)

A form appears for you to define a remote printer.

- 6 **Enter information into the remote printer form, as follows:**
 - **Printer name** Type the local queue name users will use as the name for the printer.
 - **Remote system name** Type the IP name assigned to the printer as described in “Assigning an IP Address to the Printer,” earlier in this chapter.
 - **Remote printer name** Type `text` if you want to append a carriage return to the end of each line to be printed or type `raw` if you don’t.
 - **Remote cancel model** Used for remote printer job removal; type `rcmodel`
 - **Remote status model** Used for remote printer queue status; type `rsmode1`
 - **Make this the system default printer? (y or n)** Type `y` to make this printer the default printer for all workstations on this segment of the network.
 - **Printer class** Optional
 - **Restrict cancel** Optional
 - **Remote printer on a BSD system? (y or n)** Because this printer is a Berkeley-style remote printer, type `y`
- 7 **Choose Perform Task from the SAM menu.**
- 8 **To enable the print queue you just created, choose the following items from the SAM menu, in order:**
 - Peripheral Devices
 - Printers and Plotters
 - Enable a Printer
- 9 **When SAM asks for the printer name, type the IP name assigned to the printer as described in “Assigning an IP Address to the Printer,” earlier in this chapter.**
- 10 **Leave SAM.**

- 11 **Start the LP request scheduler by typing**

```
/usr/lib/lpsched
```

- 12 **Test printing with the following command:**

```
lp -d printer_IP_name filename
```

If the test print doesn't work

If the test document doesn't print, follow these steps:

- 1 **Check whether the `rlp` daemon is running. At the UNIX prompt, type**

```
ps -e | grep rlp
```

If the process is running, you will see one or more lines of text; if it is *not* running, you will see no response.

- 2 **If `rlp` is running—that is, you saw one or more lines of text in step 1—kill the process by typing**

```
kill -15 process_number_from_step_1
```

- 3 **Make sure the following entry is in the `/etc/inetd.conf` file:**

```
printer stream tcp nowait root  
/usr/lib/rlpdaemon rlpdaemon -i
```

This line tells `inetd` to start the `rlp` daemon automatically when a print request is made (if it's not already running).

- 4 **Make sure the following entry is in the `/etc/services` file:**

```
printer 515/tcp spooler
```

- 5 **Start `inetd` by typing the following command at the UNIX prompt:**

```
/etc/inetd -c
```

- 6 **Repeat the steps in “Configuring HP-UX Version 8.07.”**

Configuring HP-UX version 9.xx

- 1** Assign an IP address and IP name to the printer, as described in “Assigning an IP Address to the Printer,” earlier in this chapter.
- 2** Make sure the printer’s IP name and IP address are entered in the `/etc/hosts` file.
- 3** Log in to the system console as `root`.

The System Administration Manager (SAM) uses a screen-oriented interface that works best at the console.

- 4** Run the SAM utility by typing `sam` at the UNIX prompt.
- 5** Select the following options, in order, from the SAM menu:

Printers and Plotters

Printers/Plotters

Actions

Add a Remote Printer (Do *not* select “Add a Network Printer.”)

A form appears for you to define a remote printer.

- 6 Enter information into the remote printer form as follows:
 - **Printer name** Type the local queue name users will use as the name for the printer.
 - **Remote system name** Type the IP name assigned to the printer as described in “Assigning an IP Address to the Printer,” earlier in this chapter.
 - **Remote printer name** Type `text` if you want to append a carriage return to the end of each line to be printed or type `raw` if you don’t. (Since the printer doesn’t otherwise need this remote printer queue name, it uses the name as a flag to determine whether it should add a carriage return to the end of each line.)
 - **Remote cancel model** Used for remote printer job removal; type `rcmodel`
 - **Remote status model** Used for remote printer queue status; type `rsmode1`
 - **Printer class** Optional
 - **Make this the system default printer?** Check the box to make this printer the default printer for all workstations on this segment of the network.
 - **Allow anyone to cancel requests** Check this box if anyone should be able to cancel requests.
 - **Remote printer on a BSD system? (y or n)** Because this printer is a Berkeley-style remote printer, check this box.
- 7 Select the OK button.
- 8 When you see the message “Task completed,” select OK.
- 9 Pull down the Lists menu and select Exit.
- 10 Select the Exit SAM button.
- 11 Test printing with the following command:
`lp -d printer_IP_name filename`

If the test print doesn't work

If the test document doesn't print, follow these steps:

- 1 Check whether the `rlp` daemon is running. At the UNIX prompt, type**

```
ps -e | grep rlp
```

If the process is running, you will see one or more lines of text; if it is *not* running, you will see no response.

- 2 If `rlp` is running—that is, you saw one or more lines of text in step 1—kill the process by typing**

```
kill -15 process_number_from_step_1
```

- 3 Make sure the following entry is in the `/etc/inetd.conf` file:**

```
printer stream tcp nowait root  
/usr/lib/rlpdaemon rlpdaemon -i
```

This line tells `inetd` to start the `rlp` daemon automatically when a print request is made (if it's not already running).

- 4 Make sure the following entry is in the `/etc/services` file:**

```
printer 515/tcp spooler
```

- 5 Start `inetd` by typing the following command at the UNIX prompt:**

```
/etc/inetd -c
```

- 6 Repeat the steps in “Configuring HP-UX Version 9.xx.”**

Configuring SCO UNIX

To configure Santa Cruz Operation (SCO) version 1.2 or later of UNIX, follow these steps:

- 1** Assign an IP address and IP name to the printer, as described in “Assigning an IP Address to the Printer,” earlier in this chapter.
- 2** Make sure the printer’s IP name and IP address are entered in the `/etc/hosts` file.
- 3** Make sure you can use `telnet` to log in to the printer, as described earlier in this chapter.
- 4** Log in to the SCO machine as `root`.
- 5** At the UNIX prompt, type

```
mkdev rlp
```
- 6** When the `mkdev` program asks if you want to install or remove remote line printing, choose install even if it is already installed.

- 7 If remote line printing is already installed, the program will ask if you want to continue installing the system. Answer “no” and skip to step 11.
- 8 If remote line printing is not already installed, the program will ask if you wish to change the `/etc/printcap` file. Answer “no.”
- 9 The program then asks if you want to run `/etc/r lpconf`. Answer “no.”
- 10 When asked if you want to start the remote daemon, answer “yes.”

You return to the UNIX prompt.

- 11 Add the following entry to the `/etc/printcap` file.

```
local_print_queue_name/[description_of_printer]:\  
    :lp=:mx#0:rm=printer_IP_name:\  
    :rp=remote_print_queue_name:\  
    :sd=path_to_this_queue's_spool_directory:\  
    :lf=path_to_this_queue's_log_file:
```

For a description of these parameters, see “Getting Other UNIX Users Started Using the Printer,” earlier in this chapter.

- 12 Create the spool directory that you specified in step 11:

```
mkdir path_to_this_queue's_spool_directory
```

- 13 Test printing with the following command:

```
lp -d printer_IP_name filename
```

Configuring IBM's AIX version 3.x

- 1 Assign an IP address and IP name to the printer, as described in “Assigning an IP Address to the Printer,” earlier in this chapter.
- 2 Make sure the printer's IP name and address are entered in the `/etc/hosts` file.
- 3 At the UNIX prompt, type the following to run the SMIT utility:

```
smit
```

4 To add a remote queue, choose the following items from the SMIT menu:

```
Spooler (Print Jobs and Printers)
Manage Remote Printer Subsystem
Client Services
Remote Printer Queues
Add a Remote Queue
```

A form appears for you to define a remote printer.

5 Enter information into the remote printer form, as follows:

- **Name of queue to add** Type the local queue name users will use as the name for the printer.
- **Designation host for remote jobs** Type the printer IP name assigned to the printer as described in “Assigning an IP Address to the Printer,” earlier in this chapter.
- **Name of queue on remote printer** Type `text` if you want to append a carriage return to the end of each line to be printed or `raw` if you don’t. (Since the printer doesn’t otherwise need this remote printer queue name, it uses the name as a flag to determine whether it should add a carriage return to the end of each line.)
- **Name of device to add** Type any name, up to 7 characters. The name is required but has no effect on the print service.

6 To start the `lpd` subsystem, choose the following items from the SMIT menu:

```
Spooler (Print Jobs and Printers)
Manage Remote Printer Subsystem
Server Services
lpd Remote Printer Subsystem
Start Using the lpd Subsystem
Start BOTH Now and at System Restart
```

7 At the UNIX prompt, start the `qdaemon` by typing

```
startsrc -s qdaemon
```

- 8 Try printing by using this command:

```
lpr -Pprinter_IP_name filename
```

Note that there's no space between `-P` and `printer_IP_name`.

Configuring Sun OS version 4.1 or Ultrix version 4.2

- 1 Assign an IP address and IP name to the printer, as described in "Assigning an IP Address to the Printer," earlier in this chapter.
- 2 Make sure the printer's IP name and address are entered in the `/etc/hosts` file.
- 3 Make sure the `lpd` daemon is running on the Sun-OS or Ultrix system by typing the following command at the UNIX prompt:

```
ps aux | grep lpd
```

If the `lpd` daemon is running, you should see output similar to

```
root 135 0.0 0.0 52 0 ? IW Oct 17 0:01 /usr/lib/lpr
```

and you should skip to step 4.

If the `lpd` daemon is not running, you will not see any output, and you should start the daemon by logging in as `root` and typing this command at the UNIX prompt:

```
/usr/lib/lpd
```

You can verify that the daemon is running by using the `ps` command described in this step.

Note: To start the `lpd` daemon automatically when the system boots, make sure that lines similar to the following exist in the `/etc/rc` file:

```
if [ -f /usr/lib/lpd ] ; then
rm -f /dev/printer /var/spool/lpd.lock
/usr/lib/lpd;echo -n ' printer'
fi
```

- 4 Log in as `root`.

5 Add the following entry to the `/etc/printcap` file:

```
local_print_queue_name | [description_of_printer]:\  
:lp=:mx#0:rm=printer_IP_name:\  
:rp=remote_print_queue_name:\  
:sd=path_to_this_queue's_spool_directory:\  
:lf=path_to_this_queue's_log_file:
```

For a description of these parameters, see “Getting UNIX Users Started Using the Printer,” earlier in this chapter.

6 Create the spool directory that you specified in step 5:

```
mkdir path_to_this_queue's_spool_directory
```

7 Try printing by using this command:

```
lpr -Pprinter_IP_name filename
```

Note that there's no space between `-P` and `printer_IP_name`.

What to do next

The printer is now set up on your TCP/IP network. If you want to install any options, see Chapter 5.

5

Installing Options

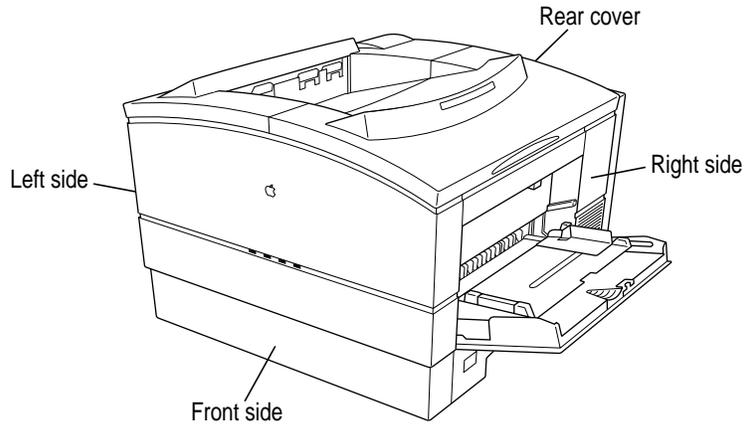


The LaserWriter 16/600 PS has several user-installable printer options. You can add an envelope feeder, a 250-sheet universal cassette, a 500-sheet feeder, and external hard disks or an internal hard disk for font management. You can also increase the printer's random-access memory (RAM) and add faxing capabilities.

This chapter provides instructions for installing your paper-handling options, hard disks, and expanded RAM. For instructions on installing the LaserWriter 16/600 PS Fax Card, see the documentation that comes with the fax card.

WARNING When installing any of the options described in this chapter, be sure the printer is turned off.

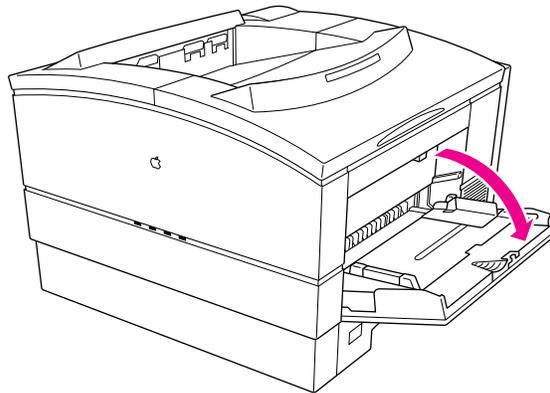
Many of the installation procedures describe working with the printer's left and right sides and front and rear, as shown in the following illustration.



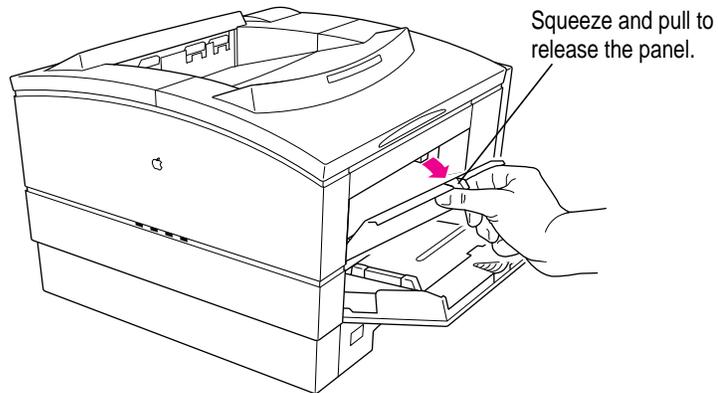
Installing the LaserWriter 16/600 PS Envelope Feeder

Follow these instructions to install the LaserWriter 16/600 PS Envelope Feeder. For instructions on loading the feeder with envelopes, see “Filling the Optional Envelope Feeder,” in Chapter 9.

- 1 Turn off the printer.**
- 2 Unpack the envelope feeder and remove any packing materials within it.**
- 3 Open the printer's multipurpose tray.**

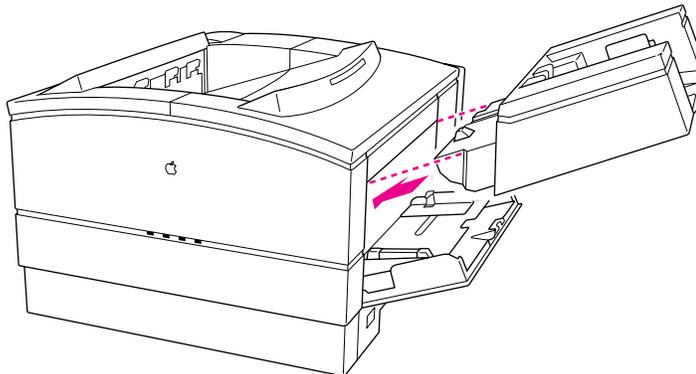


- 4** Remove the vertical panel from within the printer.



To release the panel, gently squeeze the handle at the top of the panel and pull down. Store the panel for later use.

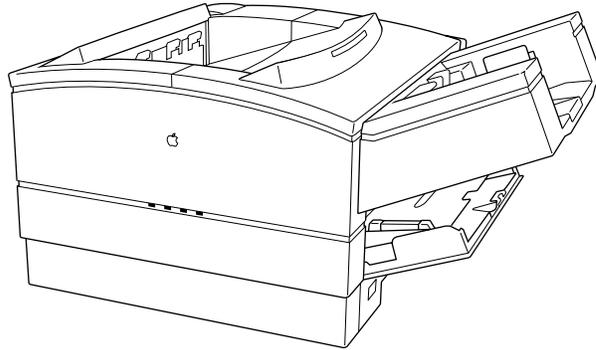
- 5** Holding the envelope feeder so that its angled face is parallel to the side of the printer, gently slide the envelope feeder into the opening above the multipurpose tray.



WARNING When you insert the envelope feeder into the printer, be sure the printer is turned off.

Fit the extension on the feeder's front into the tracks on the inside walls of the opening. Gently slide the envelope feeder down at an angle until the feeder's angled face is flush against the printer's side.

Your LaserWriter 16/600 PS Envelope Feeder is now installed.



- 6 Turn on the printer.**
- 7 Configure your printer software to use the envelope feeder.**

Next you must configure the printer software to use the new paper option. For configuration instructions, see “Configuring Your Printer Software for New Options,” later in this chapter.

For instructions for loading envelopes into the feeder, see “Filling the Optional Envelope Feeder” in Chapter 9. For information about printing options, see Chapter 6 if you are using a Macintosh computer or Chapter 7 if you are using an IBM PC or compatible computer.

If you want to check that the envelope feeder is properly installed, turn the printer back on and check the startup page. The envelope feeder should be listed as installed there.

To remove the envelope feeder

When you wish to remove the envelope feeder, follow these instructions.

- 1 Turn off the printer.**
- 2 Gently slide the envelope feeder out of the opening above the multipurpose tray.**

Gently pull the envelope feeder up at an angle until the feeder comes out of the printer.

- 3 Insert the vertical panel inside the printer.**

Insert the lower edge of the panel into the multipurpose tray, then raise the panel until it snaps into position.

- 4 Turn on the printer.**
- 5 Configure your printer software to indicate that the envelope feeder is no longer available.**

Next you must configure the printer software to indicate the removal of the envelope feeder option. For configuration instructions, see “Configuring Your Printer Software for New Options,” later in this chapter.

Installing the LaserWriter 16/600 PS 500-Sheet Feeder

Follow these instructions for installing the LaserWriter 16/600 PS 500-Sheet Feeder. For instructions on loading the feeder with paper, see “Filling the Optional 500-Sheet Cassette With Paper,” in Chapter 9.

Before you install the 500-sheet feeder:

- The printer must be turned off and the power cord unplugged.
- The printer must be disconnected from your computer or network.

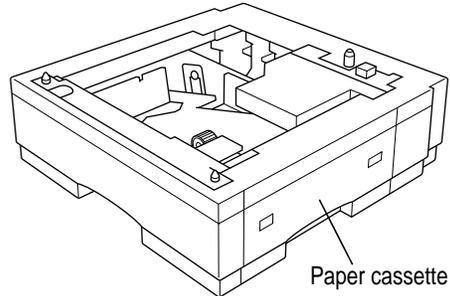
WARNING To install the 500-sheet feeder, you must place the LaserWriter 16/600 PS on top of the cassette base. Because of the printer’s weight, it’s recommended that you have two people lift the printer. Aligning the printer on the 500-sheet feeder base is easier when two people are lifting the printer.

The cassette base adds approximately 5 inches to the height of the LaserWriter 16/600 PS. Begin by selecting a location for the LaserWriter 16/600 PS that provides enough room to accommodate the increased height of the printer.

If you intend to keep the printer in its current location, make sure that adequate room will be available for opening the top cover, loading paper, and maintaining the printer. You will also need to temporarily move the LaserWriter 16/600 PS from its current location to place the cassette base in its place. When moving the printer, be sure to place it on a strong, stable surface that can support its weight.

- 1 Turn off the printer.**
- 2 Unpack the cassette base and remove any packing materials within the base and paper cassette.**

- 3** Insert the paper cassette in the cassette base.

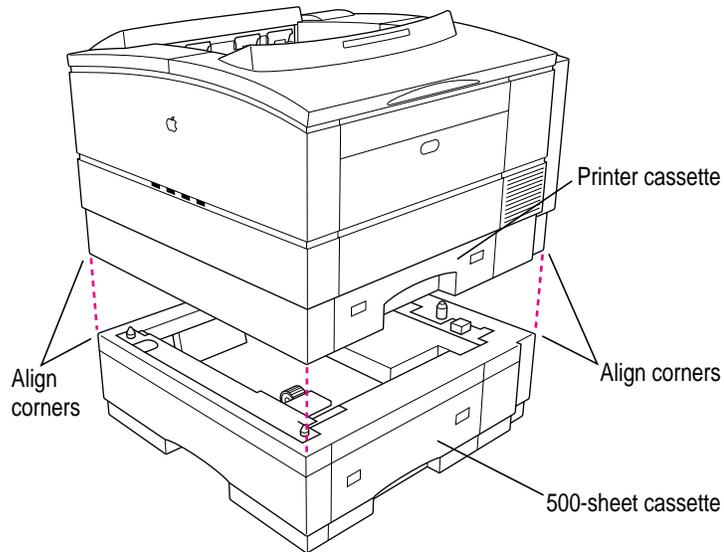


You don't need to fill the cassette with paper at this time.

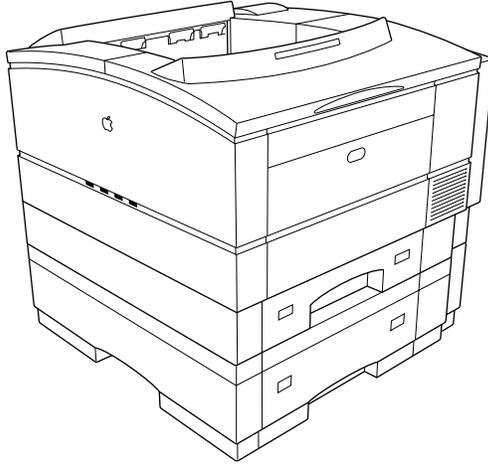
- 4** Place the cassette base where you want the LaserWriter 16/600 PS to be located.

Orient the cassette base so that its paper cassette and the printer's multipurpose tray and paper cassette will be on the same side when the printer is on the cassette base.

- 5** With another person, lift the LaserWriter 16/600 PS, position it directly over the cassette base, and gently lower the printer until it sits evenly on the cassette base.



As you lower the printer, align the corners of the printer directly over those of the base.



You can now reconnect the LaserWriter 16/600 PS power cable to the printer and reconnect the printer to your computer or network.

- 6 Turn on the printer.**
- 7 Configure your printer software to use the 500-sheet feeder.**

Next you must configure the printer software to use the new paper option. For configuration instructions, see “Configuring Your Printer Software for New Options,” later in this chapter.

For instructions for loading paper into the feeder, see “Filling the Optional 500-Sheet Cassette with Paper” in Chapter 9. For information about printing options, see Chapter 6 if you are using a Macintosh computer or Chapter 7 if you are using an IBM PC or compatible computer.

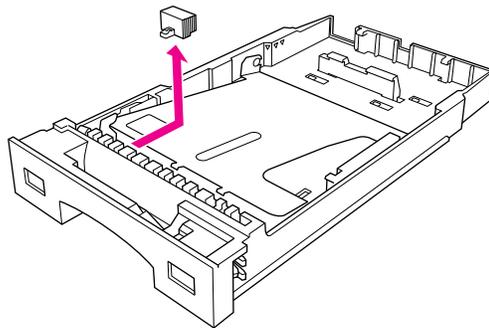
Installing the LaserWriter 250-Sheet Universal Cassette

Follow these instructions for installing the LaserWriter 250-Sheet Universal Cassette. For instructions on loading the cassette with paper and printing, see “Filling the Optional 250-Sheet Universal Cassette” in Chapter 9.

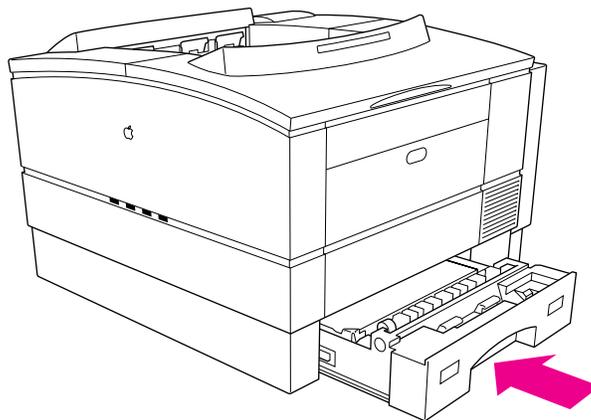
- 1** Unpack the cassette and its cover and remove any packing materials within the cassette.
- 2** Remove the small orange block holding down the paper lift plate and any filament tape.

Inside the cassette is a plastic retainer that holds down the paper lift plate securely for shipping. Remove the retainer by gently pushing down on it and pulling back to free it from the tray.

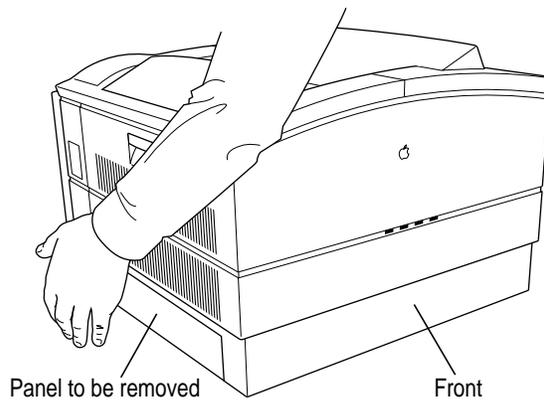
Remove the retainer from the cassette.



- 3** Slide the standard LaserWriter 16/600 PS paper cassette out of the printer.
- 4** Slowly slide the 250-sheet universal cassette into the printer's cassette slot until it touches the back of the printer and stops.

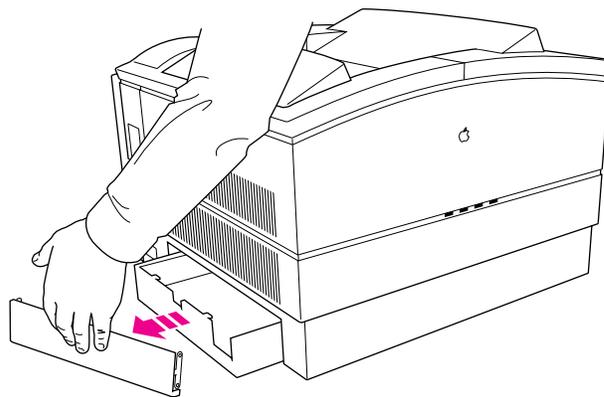


- 5** On the side of the printer opposite the paper cassette (left side), position your hand over the plastic panel at the base of the printer.



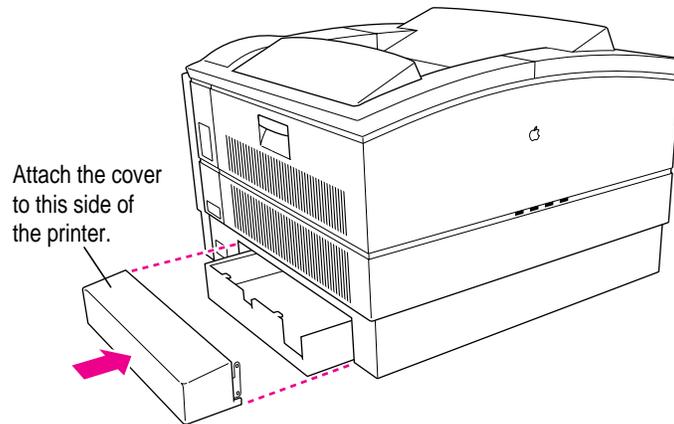
You will remove this panel by gently pushing the paper cassette against it until the panel pops free. Position your hand so that you can catch the panel.

- 6** Gently but firmly push the paper cassette into the printer until the plastic panel pops out.



Keep the panel in case you stop using the 250-sheet universal cassette. The 250-sheet universal cassette can now slide completely into the printer. It extends approximately 2 inches out from the printer's side.

- 7 Fit the cover into the printer so that it covers the exposed portion of the paper cassette.



The cassette is now installed.

You've now completed installing the LaserWriter 250-Sheet Universal Cassette. For instructions on loading paper into the cassette, see "Filling the Optional 250-Sheet Universal Cassette" in Chapter 9. For information about printing options, see Chapter 6 if you are using a Macintosh computer or Chapter 7 if you are using an IBM PC or compatible computer.

Adding hard disks

You can install an internal hard disk and attach up to six external SCSI hard disks to the LaserWriter 16/600 PS. The hard disk provides space for font storage. If you have the LaserWriter 16/600 PS Fax Card installed, you can also store incoming faxes on the hard disk.

When you connect one or more hard disks to your printer to store fonts, documents will print faster because your computer will rarely need to download a font to the printer. You'll also improve network performance because less information is transferred over network cables.

When you do download a font, you can choose to download it either to a hard disk or to the printer's RAM. Downloading it to a disk stores it there permanently (or until you remove it). If you have a Macintosh, you can initialize the disks and download fonts to them by using the Apple Printer Utility program (see "Downloading Fonts to the Printer" in Chapter 2). If you have an IBM PC or compatible computer, you can initialize the disks and download fonts to them by using the Font Downloader in the Printer Setup dialog box (see "Downloading Fonts" in Chapter 7).

Connecting a previously used hard disk

LaserWriter 16/600 PS will not recognize any disks that have been formatted for use with a different model of LaserWriter or Macintosh. If you attach such a disk to the LaserWriter 16/600 PS, you will need to reinitialize the disk before you can use it and then reload any fonts from your computer. Reinitializing erases all fonts previously stored on the disk.

Connecting external hard disks

You must use an HDI-30 SCSI System cable and a SCSI terminator to connect the first external hard disk to the external SCSI port. For each additional hard disk you connect to the LaserWriter 16/600 PS, you will need a SCSI peripheral cable, which links two SCSI devices. You'll also need an additional SCSI cable terminator for the hard disk farthest from the printer.

IMPORTANT The external hard disk you connect to the LaserWriter 16/600 PS printer must supply 5 volts DC to the SCSI bus to work properly. Check the documentation that came with the hard disk for information about SCSI voltage.

The kind of SCSI cable terminator to use with disks connected to the LaserWriter 16/600 PS can be black or gray. To purchase terminators, contact an Apple-authorized dealer.

Before you connect your external hard disks, make sure that each one has a unique SCSI ID number. Do not turn on or attempt to use the printer or any attached hard disk until each disk has been assigned its own number. Do not use SCSI ID #7; it is a reserved ID number. SCSI ID #0 is used by an internal hard drive, if one is installed.

Setting the SCSI ID number

Each SCSI device attached to the printer must have a unique ID number.

You assign a SCSI ID number by setting the SCSI ID switch on the back panel of the disk. Follow these steps.

- 1 Make sure the hard disk is turned off.**
- 2 Insert a straightened paper clip into the hole below the SCSI ID indicator (some SCSI devices have push-buttons instead of holes).**
- 3 Push gently until the number you want appears in the indicator.**
- 4 If you go past the number you want, keep pushing until it comes around again.**

IMPORTANT The printer will not recognize any attached disk unless the disk is turned on before or at the same time that you start up the printer. If a hard disk is left off, the printer will detect an error when it runs its startup diagnostics and will not start up.

Connecting a single external hard disk

- 1 Turn off the printer.
- 2 Attach the HDI-30 SCSI System cable to the SCSI port on the LaserWriter 16/600 PS.
- 3 Attach the other end of the HDI-30 SCSI System cable to either SCSI port on the hard disk.
- 4 Attach a cable terminator to the other SCSI port on the hard disk.

After installing the hard disk, you must initialize the disk before you can store fonts on it. The printer's startup page will not indicate that the hard disk is installed until after you initialize the disk. See "Initializing Hard Disks," later in this chapter, for more information.

Connecting multiple external hard disks

- 1 Turn off the printer and all hard disks connected to it.
- 2 Attach the HDI-30 SCSI System cable to the SCSI port on the LaserWriter 16/600 PS.
- 3 Attach a terminator to either SCSI port on the first hard disk.
- 4 Attach the other end of the cable to the terminated SCSI port on the first hard disk.
- 5 Attach a peripheral cable to the other SCSI port on the first hard disk.
- 6 Attach the other end of the peripheral cable to either SCSI port on the next hard disk.
- 7 Repeat steps 5 and 6 for each additional hard disk.
- 8 Attach a cable terminator to the unused SCSI port on the last hard disk.

Adding an internal hard disk

You can purchase an optional internal hard disk that you can install in your LaserWriter 16/600 PS to create additional space for font storage. To install the internal hard disk option, you remove the rear cover of the LaserWriter 16/600 PS, install the hard drive by connecting it to the printer's circuit board, and then replace the rear cover. Be sure to wear the grounding wrist strap when working on the printer with its rear cover off. If your internal hard disk didn't come with a grounding wrist strap, you can purchase one from a computer dealer.

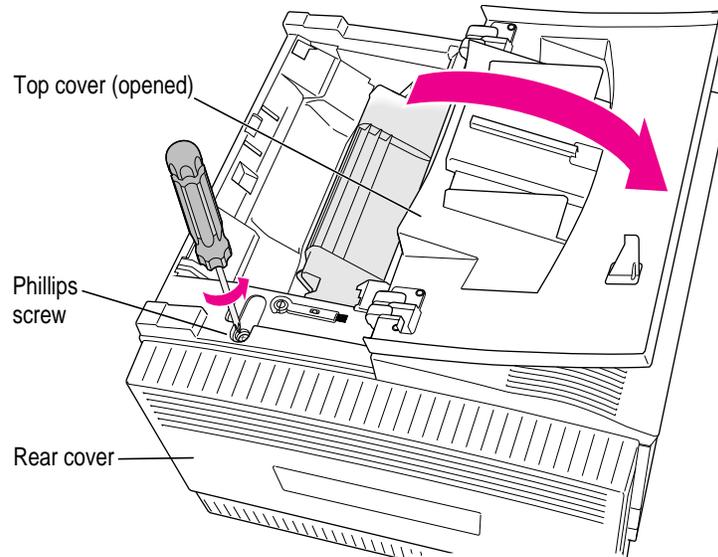
IMPORTANT The instructions provided here explain how to install an internal hard disk in your printer yourself. If you wish, you can also contact an Apple-authorized dealer to have your internal hard disk installed for a service fee.

Removing the printer's rear cover

WARNING Make sure the printer is turned off.

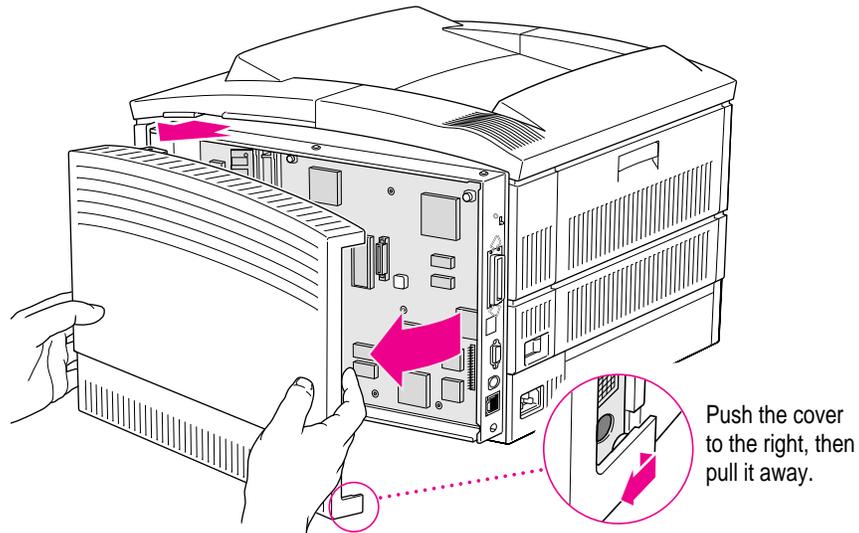
- 1 If necessary, turn the printer so that the rear cover (opposite the side with the Apple logo and printer's name) is accessible.

- 2 Open the top cover all the way.



- 3 Locate the Phillips screw on the top of the printer (near the green cleaning brush). The screw secures the rear cover to the printer.
- 4 Unscrew and remove the screw. Put it in a safe place.
- 5 To minimize the toner cartridge's exposure to light, close the printer's top cover.

- 6 Place your left hand on the left edge of the rear cover and grasp the lower-right corner with your right hand. Push the cover toward the right, pulling the cover's right side away from the printer. The rear cover should slip out and away.



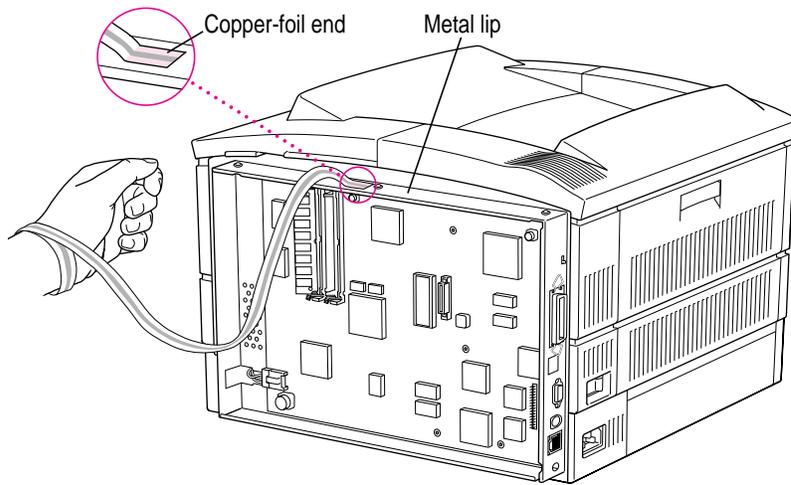
Putting on the grounding strap

IMPORTANT Be sure to put on the grounding wrist strap before handling the hard disk or any internal printer parts. The strap grounds you to the printer, preventing any static discharge that might harm the card or printer. Wearing the strap cannot harm you. If your internal hard disk didn't come with a grounding strap, you can purchase one from a computer dealer.

Follow these steps.

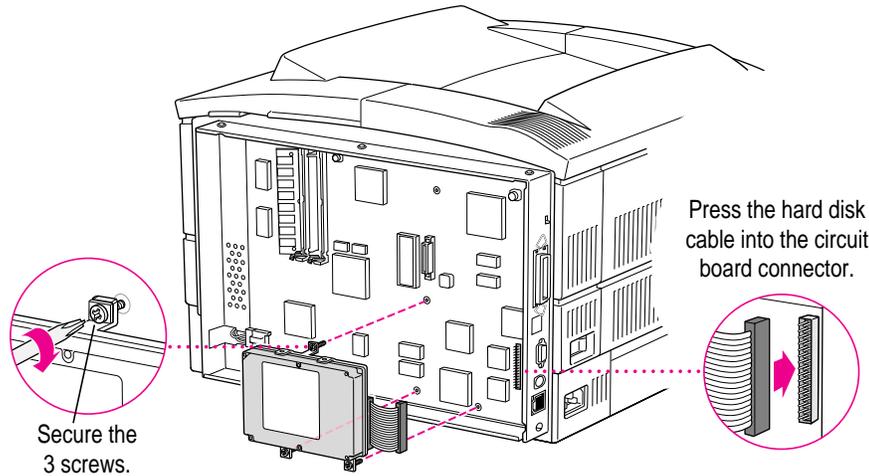
- 1 Wrap the end of the strap that does not have copper foil on it around your wrist. The strap's light adhesive coating keeps it attached to your wrist, while allowing for easy removal.
- 2 Remove the backing from the piece of copper foil at the other end of the strap.

- 3 Attach the copper-foil end of the strap to the metal lip on the inside of the printer by pressing the adhesive backing against the metal.



Connecting the internal hard disk

- 1 Holding the hard disk's retaining brackets over the corresponding holes in the circuit board, attach the hard drive cable to the printer's circuit board and secure the hard disk to the board with the three-screws on the retaining brackets.



WARNING When installing the hard drive, avoid touching the printer's circuit board with hands or tools to avoid damaging or scratching the printed circuits.

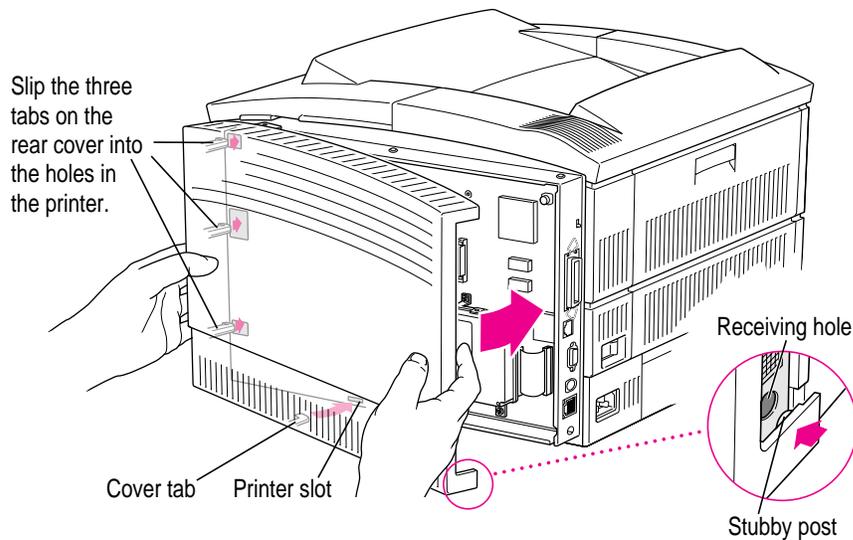
- 2 Remove and discard the grounding wrist strap.

You've now installed the hard disk, you need only replace the rear cover to complete the installation.

Replacing the rear cover

To replace the cover on the printer, follow these steps.

- 1** Line up the three tabs on the left edge of the back cover with the holes in the printer. Gently press the cover into the printer.
- 2** Locate the stubby post in the lower-right corner of the rear cover. Align the stubby post in the cover with its receiving hole in the printer. Slide the cover to the left to guide the post and hole together with your right hand, while pushing in on the lower middle of the cover with your left hand. This action inserts the tab in the middle of the cover's lower edge into its receiving slot. The cover should slide into place.



To check the position of the rear cover, open the top cover and look at the Phillips screw hole on the top of the printer. The hole should be unobstructed. (You shouldn't replace the vertical Phillips screw until the back cover is properly positioned.)

If the hole is obstructed, examine the edge of the rear cover to see where it's improperly positioned. Is the cover too high? Is the bottom-center edge bulging? Wiggle the lower-right corner post into the hole while pressing gently on the cover. If you still don't get the cover to fit correctly, remove it and try again. It may take a few tries.

- 3** With the back cover properly positioned, replace the Phillips screw. Do not overtighten it.

4 Close the top cover.

You've now completed installing a hard disk in the printer. Next you must initialize the hard disk before you can use it.

Initializing hard disks

After connecting an external or internal hard disk to the printer, you must initialize the disk before you can use it. If you have a Macintosh, you can initialize a hard disk connected to a LaserWriter 16/600 PS with the Apple Printer Utility. See “Initializing a Hard Disk Connected to the Printer” in Chapter 2. If you use an IBM PC or compatible computer, use the Font Downloader in the Windows Setup dialog box to initialize a hard disk. See Chapter 7 for more information about initializing disks and downloading fonts.

IMPORTANT Initialize a hard disk only once from a Macintosh or from an IBM PC or compatible computer. After you initialize the disk, it will be able to store font information from Macintosh computers and from IBM PC or compatible computers. Initializing the disk again from either a Macintosh or IBM PC or compatible will erase any font information stored there.

Your printer's startup page will not show that a hard disk is installed until you initialize the hard disk.

Using hard disks from manufacturers other than Apple

IMPORTANT Some older model hard disk drives may not be compatible with the LaserWriter 16/600 PS.

If you are considering connecting non-Apple hard disks to your LaserWriter 16/600 PS, keep these points in mind:

- The LaserWriter 16/600 PS must be able to tell how much storage space is available on the disk. This is not possible with some hard disks from manufacturers other than Apple. You cannot use these disks with the LaserWriter 16/600 PS.
- Some non-Apple disks have internal SCSI terminators. There should be no more than two terminators in any SCSI chain.
- The hard disk must be able to deliver at least 5 volts of termination power.

Increasing the printer RAM

You can increase the memory size of the LaserWriter 16/600 PS. You can install up to 32 megabytes (MB) of random-access memory (RAM) in the printer to provide faster performance on complex documents and documents containing many fonts. You can also enable the printer's PhotoGrade feature, which provides enhanced printing of graphics, by increasing the printer's memory to 12 MB of RAM or more.

Adding RAM allows more fonts to be downloaded to the printer at one time; provides more space to store the calculations needed for large or complex images; and increases the space available for font caching, or maintaining recently used fonts in memory for faster access the next time they are needed.

IMPORTANT The instructions provided here explain how to install added memory in your printer yourself. If you wish, you can also contact an Apple-authorized dealer to install more memory for a service fee.

You can purchase additional RAM for the LaserWriter 16/600 PS in units of 4, 8, and 16 MB. You can purchase 4 MB RAM expansion kits from Apple-authorized dealers. You can also purchase RAM expansion kits from many electronics and computer outlets. For information about the RAM specifications required to expand your printer's memory, see Appendix C.

IMPORTANT The RAM used in the LaserWriter 16/600 PS is not the same type of RAM used in earlier LaserWriter II printers. The two are not interchangeable.

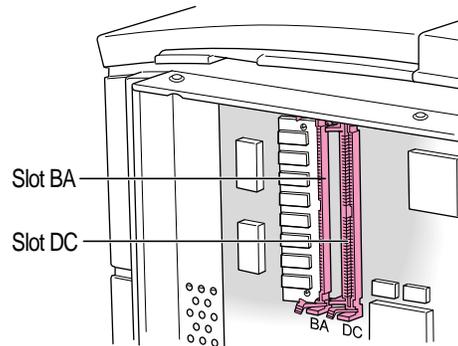
Apple offers a 4 MB expansion kit:

- Macintosh 4 MB Memory Expansion Kit (1-4 MB SIMM)
M1507LL/A

WARNING Refrain from handling the memory until you have put on a grounding wrist strap. Handling the memory without wearing a grounding strap may allow static electricity to be discharged into the memory and damage it. If your memory kit didn't come with a grounding wrist strap, you can purchase one from a computer dealer.

Installing RAM

The printer's circuit board has two slots, marked BA (on the left) and DC (on the right), for installing additional memory. RAM is provided on SIMMs (Single Inline Memory Modules) that you insert into the slots.



Your printer comes with 8 MB of RAM installed in slot BA.

To increase the memory size to 12 or 16 MB, install a 4 MB or 8 MB SIMM in slot DC.

To increase the memory size to 24 or 32 MB, install a 16 MB SIMM in slot BA and an 8 or 16 MB SIMM in slot DC.

The table below lists RAM configurations you can use.

Note: The 8 MB SIMMs must be composed of two 4 MB banks.

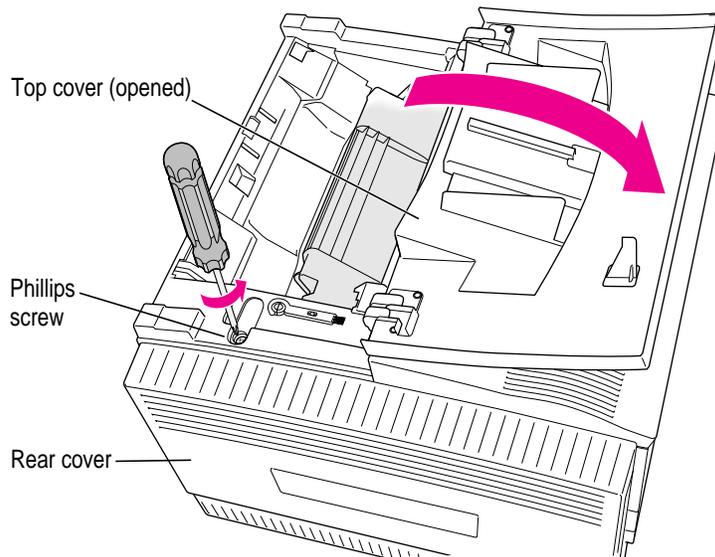
Amount of memory (megabytes)	Slot BA (left slot)	Slot DC (right slot)
8 MB	8 MB	0 MB
12 MB	8 MB	4 MB
16 MB	8 MB	8 MB
24 MB	16 MB	8 MB
32 MB	16 MB	16 MB

IMPORTANT Other possible configurations may produce diagnostic errors when the printer starts up or may produce unexpected results.

Removing the printer's rear cover

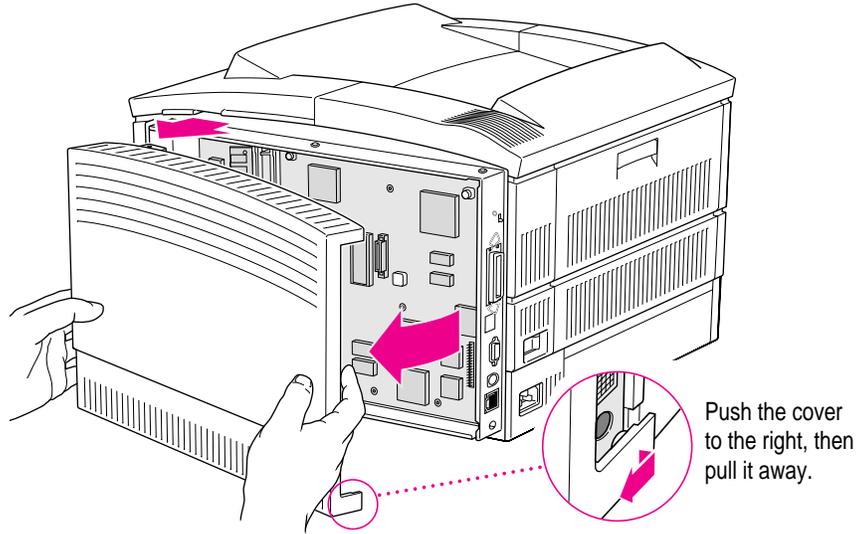
WARNING Make sure the printer is turned off.

- 1 If necessary, turn the printer so that the rear cover (opposite the side with the Apple logo and printer's name) is accessible.
- 2 Open the top cover all the way.



- 3 Locate the Phillips screw on the top of the printer (near the green cleaning brush). The screw secures the rear cover to the printer.
- 4 Unscrew and remove the screw. Put it in a safe place.
- 5 To minimize the toner cartridge's exposure to light, close the printer's top cover.

- 6 Place your left hand on the left edge of the rear cover and grasp the lower-right corner with your right hand. Push the cover toward the right, pulling the cover's right side away from the printer. The rear cover should slip out and away.

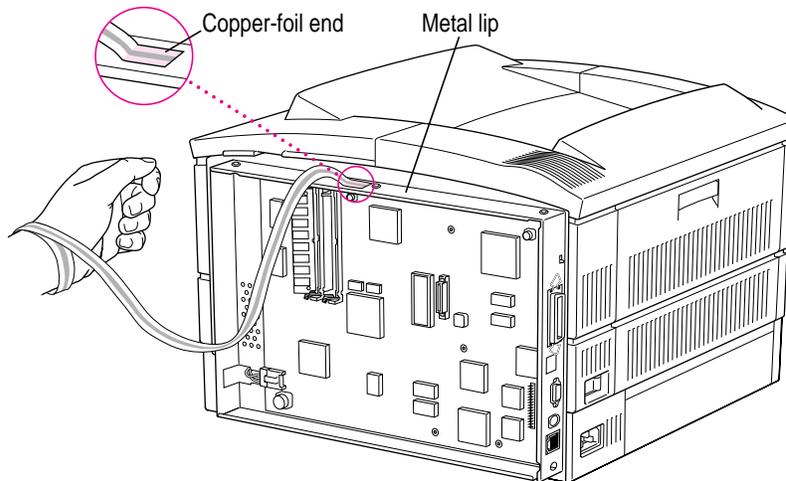


Putting on the grounding strap

IMPORTANT Be sure to put on the grounding wrist strap before handling the SIMM or any internal printer parts. The strap grounds you to the printer, preventing any static discharge that might harm the SIMM or printer. Wearing the strap cannot harm you. Follow these steps:

- 1 Wrap the end of the strap that does not have copper foil on it around your wrist. The strap's light adhesive coating keeps it attached to your wrist, while allowing for easy removal.
- 2 Remove the backing from the piece of copper foil at the other end of the strap.

- 3 Attach the copper-foil end of the strap to the metal lip on the inside of the printer by pressing the adhesive backing against the metal.



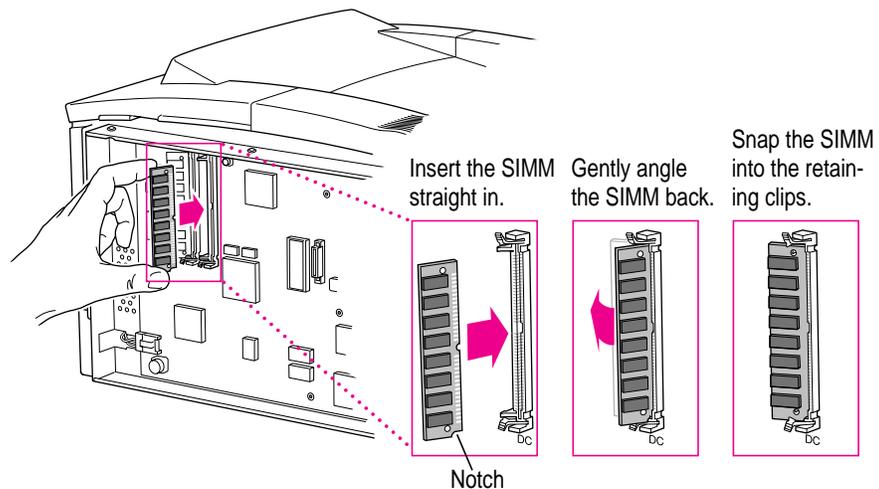
Installing SIMMs

Depending on the amount of memory you're installing, you may need to install one or two SIMMs, and perhaps remove a SIMM from a slot in order to insert one that has more memory. For example, when installing 24 MB of RAM, you must remove the 8 MB SIMM from the BA slot and reinstall it in the DC slot.

When installing SIMMs, always begin by installing or removing the SIMM in slot BA first. Installing a SIMM in the DC slot first can make installing a second SIMM in slot BA difficult because of the close proximity of the slots.

- 1 Insert the SIMM into the connector and press the SIMM down at an angle until the retaining clips on each end of the connector snap and fasten the SIMM in place.**

Hold the SIMM vertically over the slot, aligning the connectors and notches with the circuit board's connector. Notice that one edge of the SIMM has a distinctive notch that you can use to judge the orientation and alignment of the SIMM with the connector. This notch, on the bottom edge of the SIMM, should be down as you install the SIMM.



WARNING When installing a SIMM, avoid touching the printer's circuit board with hands or tools to avoid damaging or scratching the printed circuits.

To remove a SIMM, carefully spread the retaining clips at the base of the installed SIMM, then rotate the SIMM forward until it can be pulled free of the slot.

- 2 Repeat step 1 to install the second SIMM if necessary.**

You've now installed the expanded memory. You need only replace the rear cover to complete the installation.

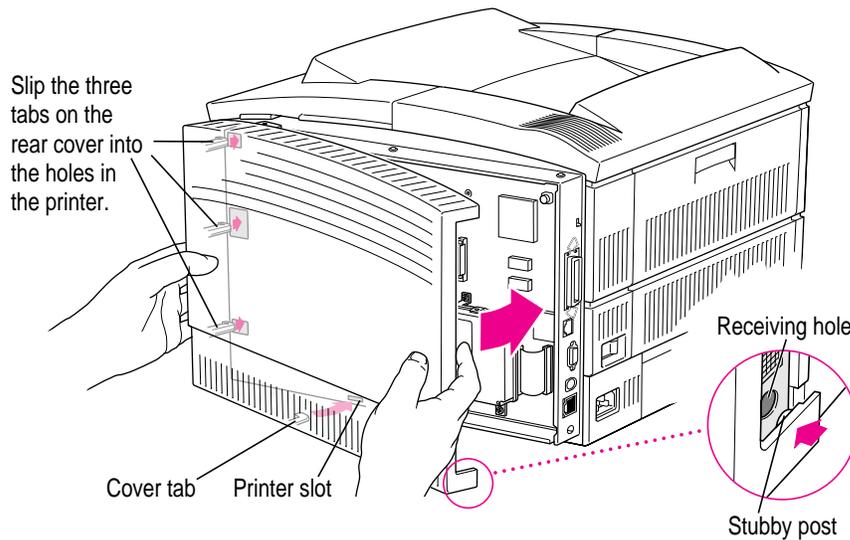
- 3 Remove and discard the grounding wrist strap.**

Replacing the rear cover

After installing the memory, you then replace the rear cover on the printer and fasten it with the Phillips screw that you removed earlier.

To replace the cover on the printer, follow these steps.

- 1** Line up the three tabs on the left edge of the back cover with the holes in the printer. Gently press the cover into the printer.
- 2** Locate the stubby post in the lower-right corner of the rear cover. Align the stubby post in the cover with its receiving hole in the printer. Slide the cover to the left to guide the post and hole together with your right hand, while pushing in on the lower middle of the cover with your left hand. This action inserts the tab in the middle of the cover's lower edge into its receiving slot. The cover should slide into place.



To check the position of the rear cover, open the top cover and look at the Phillips screw hole on the top of the printer. The hole should be unobstructed. (You shouldn't replace the vertical Phillips screw until the back cover is properly positioned.)

If the hole is obstructed, examine the edge of the rear cover to see where it's improperly positioned. Is the cover too high? Is the bottom-center edge bulging? Wiggle the lower-right corner post into the hole while pressing gently on the cover. If you still don't get the cover to fit correctly, remove it and try again. It may take a few tries.

- 3** With the back cover properly positioned, replace the Phillips screw. Do not overtighten it.
- 4** Close the top cover.
- 5** Next, configure the printer software to use the additional memory.

For configuration instructions, see “Configuring Your Printer Software for New Options,” next.

If you want to check that you have properly installed the additional printer memory, turn the printer back on and check the startup page. The amount of printer memory should be listed there.

The printer does self-diagnostic tests each time it is turned on. During this testing, the printer verifies the amount of memory installed. If the diagnostics test determines that the installation is not correct, the printer will flash both the Paper Out and the Paper Jam lights. Check that you have installed the SIMMs properly in the correct slots. If this does not resolve the problem, contact an Apple-authorized dealer.

Configuring your printer software for new options

After installing more memory, a 500-sheet feeder, or an envelope feeder, the administrator or the user needs to update the printer software on each computer connected to the network. You can reconfigure the printer software using the Chooser on Macintosh computers or the Windows Setup dialog box on IBM PC or compatible computers.

Configuring the printer from a Macintosh

- 1 Choose the Chooser from the File menu.**

The Chooser dialog box appears.

- 2 Click the LaserWriter 8 icon.**

- 3 Click a zone name to select the zone of the LaserWriter 16/600 PS, if your network has zones. If you network doesn't have zones, skip to step 4.**

- 4 Double-click the LaserWriter 16/600 PS printer name.**

The printer software automatically checks the printer's options and selects the correct settings.

- 5 Close the Chooser.**

Designating the 500-sheet feeder as the preferred paper source

After installing a 500-sheet feeder, you can specify that the printer use the 500-sheet feeder as the preferred paper source. When you choose Autoselect as the paper source in the Macintosh Print dialog box, the printer will draw paper from the 500-sheet feeder if it holds the appropriate size paper. To designate the 500-sheet feeder as the preferred source, you must manually configure the printer software.

- 1 Choose the Chooser from the File menu.**

The Chooser dialog box appears.

- 2 Click the LaserWriter 8 icon.**

- 3 Click a zone name to select the zone of the LaserWriter 16/600 PS, if your network has zones. If your network doesn't have zones, skip to step 4.**

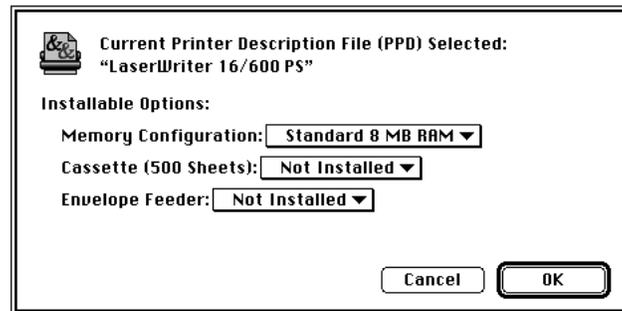
- 4 Click the LaserWriter 16/600 PS printer name.**

- 5 Click Setup.**

The Printer Setup dialog box appears.

- 6 Click Configure.**

The Installable Options dialog box appears.



- 7 Choose Installed and Preferred from the Cassette pop-up menu.**

- 8 Click OK.**

The Printer Setup dialog box appears.

- 9 Click OK.**

Configuring the printer from an IBM PC or compatible

- 1** From the Program Manager, double-click the Print Manager icon to display the Print Manager.
- 2** Select the LaserWriter16/600 PS printer from the list of Printers.
- 3** Choose the Setup command from the Options menu to display the Setup dialog box for your printer.

The Setup dialog box contains buttons that display other dialog boxes containing additional printer settings.

- 4** Click the Features button.

The Features dialog box appears.

- 5** Set controls in this dialog box to set up the optional features that you have installed on your LaserWriter 16/600 PS.
- 6** Click OK to close the Features dialog box.
- 7** Click OK to close the Setup dialog box.

Guide for Users

Chapter 6 Macintosh Users

Chapter 7 Windows and DOS Users

Chapter 8 UNIX Users

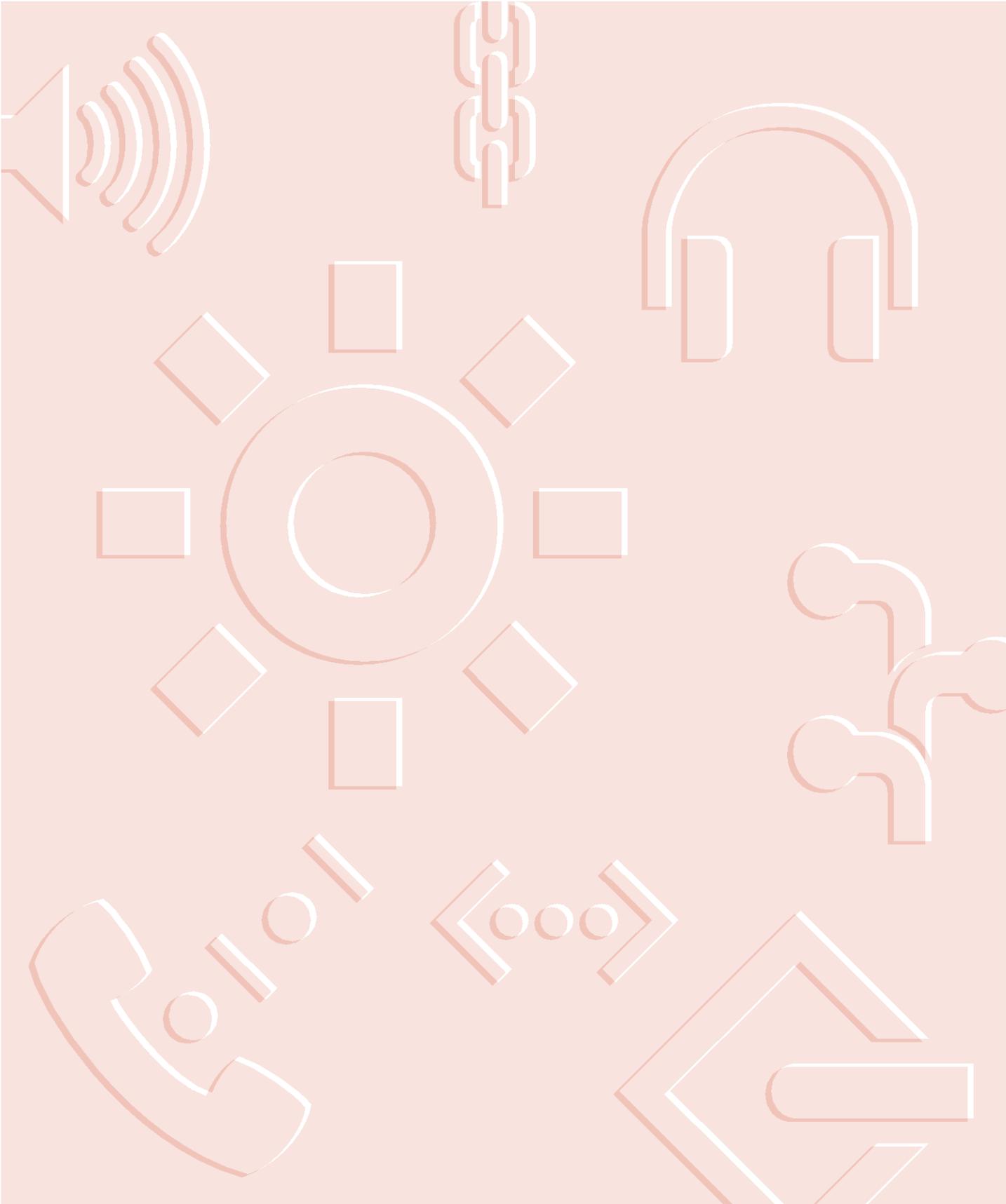
Chapter 9 Loading Paper

Chapter 10 Maintenance

Part II contains information you need to use a printer that has already been set up. You can find setup instructions in Part I.



part
II



6

Macintosh Users



The LaserWriter 16/600 PS comes with software and fonts for use with Macintosh computers. This chapter describes the system requirements and the procedures for installing the printer software and fonts on a Macintosh. You'll also find explanations for using the standard printing and page setup options of the LaserWriter 8 printer driver software supplied with your printer.

IMPORTANT The LaserWriter 16/600 PS also works with QuickDraw GX. Printing and page layout options for QuickDraw GX are not described in this manual. If your system software has QuickDraw GX, you can refer to this manual for descriptions of the LaserWriter 16/600 PS printer features, and refer to your QuickDraw GX documentation for explanations of printing procedures.

System requirements

To use the printer software, your Macintosh must have system software version 7 or later and at least 2 megabytes (MB) of memory (4 MB recommended). If your system software is an earlier version, you need to obtain a system software upgrade from your computer or software dealer.

Installing all the printer software and fonts for the Macintosh requires approximately 1.5 MB of free space on your hard disk.

Before you install the printer software

Before you install the printer software and fonts, you need to protect your original disks (by locking them and making copies of them) and make sure you have the correct version of system software.

Installing the printer software

Before you install the printer software, turn off any automatic virus-detection programs you have on your Macintosh computer. If you don't, problems may occur during the installation. After installation is complete, you can turn the virus-detection programs back on.

To install the printer software on a Macintosh computer, follow these steps:

- 1 Make sure the disks are locked.**
- 2 Insert *Macintosh Printer Disk 1* into a disk drive.**
The disk's icon appears on the desktop.
- 3 Double-click the disk icon to open the disk.**
- 4 Double-click the Installer icon to start the Installer program.**



After a moment, a Welcome dialog box appears.

5 Click Continue.

After a moment, the Install dialog box appears. At the top of the dialog box is a pop-up menu set to allow you to perform an Easy install.

IMPORTANT The Installer checks to make sure you have what you need to use the printer software. If you're missing anything, a message tells you what you need. You won't be able to install the software until you correct the problem. If a dialog box says you don't have the correct system software, you can purchase a new version from an Apple-authorized dealer.

6 Click the Install button.



The Installer takes a few moments to calculate what needs to be done and then begins to copy files.

7 Follow the instructions on the screen until the installation is complete.

After the installation, the Installer tells you to restart your computer.

8 Click the Restart button.

The software is now installed and the printer is ready for use. If you turned off any automatic virus-detection programs on your Macintosh, turn them back on now.

Selecting and setting up the printer

Before you use your printer for the first time, you must use the Chooser to select the LaserWriter 16/600 PS and set up the printer software.

Once you select the printer in the Chooser, you won't need to repeat this step unless you change printers or change the way your printer is connected.

1 Choose the Chooser from the Apple () menu.

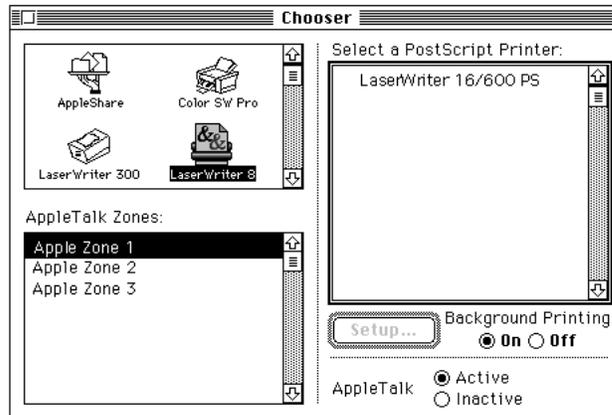
The Chooser window appears.

2 Click the LaserWriter 8 icon (in the left half of the Chooser).

If you don't see the LaserWriter 8 icon, scroll through the window.

- 3 **Click the name of the network zone in which your printer is located, if your printer is connected to a network with zones.**

The name of your LaserWriter 16/600 PS printer appears in the right half of the Chooser (along with the names of any other available LaserWriter printers). (Your Chooser may not look exactly like the illustration.)



- 4 **Click the name of your LaserWriter 16/600 PS.**

You've now selected the LaserWriter 16/600 PS printer for printing.

If this is the first time you're using the printer, you must set up the printer software. When the printer software has been set up, a small printer icon appears beside the printer name. If your printer software has already been set up and an icon appears beside the printer name, skip to step 6. To set up the software, continue with step 5.

- 5 **Click Setup.**

The Chooser identifies the type of printer and automatically sets up the printer software.

By the way: Double-clicking the printer name is a shortcut for clicking the name and clicking Setup.

A small printer icon appears beside the printer name.

- 6 **Close the Chooser.**

Printing

On a Macintosh, printing functions are controlled through the Page Setup and Print dialog boxes, which are accessed through the File menu.

Most Macintosh application programs use a version of the standard Page Setup and Print dialog boxes, although the exact options presented vary among programs. (See the manuals that came with your program for details about specific options.)

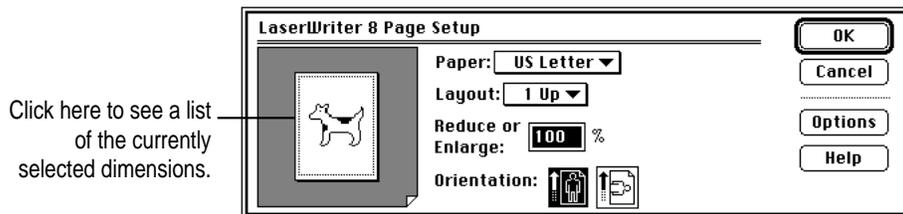
The printer administrator can change default settings the printer uses for all documents with the Apple Printer Utility. For more information about the Apple Printer Utility, see Chapter 2.

Selecting page setup options

The Macintosh Page Setup dialog box allows you to specify certain aspects of your document, such as its page size, format, and orientation, as well as the settings for several print effects. You can change these settings for every document you create. It's recommended that you set your page setup options when you first create a document. Then, as you view and format the document it will closely resemble its final printed form.

1 Choose Page Setup from the File menu.

The Page Setup dialog box appears.



2 Select the page setup options you want.

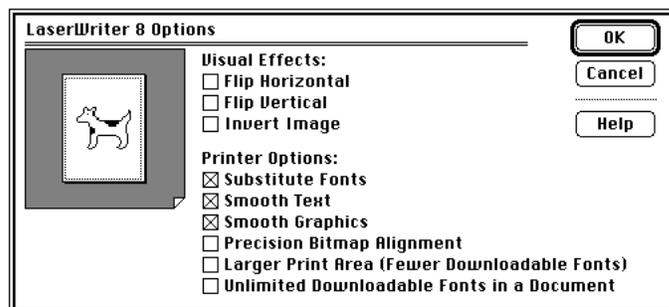
- In the Paper pop-up menu, choose a paper size.
- In the Layout pop-up menu, choose a page layout. You can set up the printer to print one, two, or four pages per sheet. (The printer then prints your pages at a reduced or enlarged size to fit them in the chosen layout on a sheet.)
- In the Reduce or Enlarge box, type the percentage of enlargement or reduction that you want the printed document to have.
- In the Orientation option, click portrait (tall) or landscape (wide) page orientation.

When you choose a paper, layout, or orientation option, a representation of your selection appears in the page image on the left of the dialog box.

To see a list of the currently selected page dimensions, click the page image. Click the page image again to close the dimensions list and return to the page image.

3 To print using special effects, click Options. (If you don't want to choose print options, skip to step 5.)

The Options dialog box appears.



- Select Flip Horizontal to flip the page image horizontally.
- Select Flip Vertical to flip the page image vertically.
- Select Invert Image to print a black-and-white reversed image.

- Select **Substitute Fonts** to substitute the fonts Helvetica, Times, and Courier for the Macintosh screen fonts Geneva, New York, and Monaco, respectively. The substitution occurs even if TrueType outline fonts are available for Geneva, New York, and Monaco. Text sizes in the printed document are scaled to compensate for size differences between the corresponding families of screen and printer fonts.
 - Select **Smooth Text** to smooth edges of letters when your printer is printing fonts as bitmapped fonts.
 - Select **Smooth Graphics** to smooth ragged edges of lines in bitmapped graphics.
 - Select **Precision Bitmap Alignment** to make printed bitmapped graphics more precisely match the screen image.
 - Select **Larger Print Area** to print on more of your total page area.
 - Select **Unlimited Downloadable Fonts in a Document** to print the document using as many downloadable fonts as you need. The fonts will be sent to the printer, used, and then removed from the printer's memory. The document will be printed more slowly.
- 4** Click **OK** to close the **Options** dialog box.
- 5** Click **OK** to close the **Page Setup** dialog box.

You can make the printer's current page setup settings the default software settings by holding down Option and clicking OK. (Some applications may not support this method of setting defaults.)

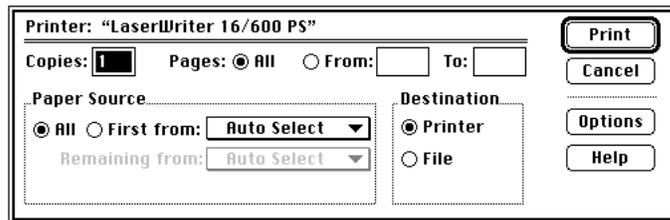
Printing documents

When you are printing from a Macintosh computer, most application programs display a Print dialog box, in which you specify print options such as the number of copies you want printed, whether to print all or part of a document, and which paper tray or cassette will be the paper source.

Some application programs also add more choices to the Print dialog box. For information about such options, refer to the documentation that came with the program.

1 Choose Print from the File menu.

The Print dialog box appears.



2 Select the options you want.

- In the Copies box, type the number of copies you want.
- In the Pages options, click All to print the entire document, or click in the From and To boxes and type a range of pages.
- In the Paper Source options, click All and then choose the paper cassette, multipurpose tray, or other paper source from the pop-up menu.

IMPORTANT The names that appear in the paper source menus vary according to the paper sources of your printer and paper sizes you choose in the Page Setup dialog box.

- To manually print an envelope or a single sheet of paper, transparency film, or labels, select manual feed as the paper source. For paper-loading instructions, see “Placing Paper and Envelopes in the Multipurpose Tray” in Chapter 9.

Note: When you choose manual feed, you may see a message on the screen telling you it’s time to insert the sheet of paper.

- To have the printer automatically select the paper tray that holds the size of paper chosen for the document, choose Auto Select as the paper source.
- To print the first page of a document from one paper source and the rest of the document from a different source, click First From and then choose the paper sources from the pop-up menus.
- In the Destination option, click Printer to print the document on paper, or click File to save the document as a file of PostScript code or EPS file.

3 Click Print.

Printing a cover page automatically

The LaserWriter 8 printing software can automatically print a cover page that provides information about the printed document, such as the document's name and the date and time of printing. You can set the printer to print the cover page at the beginning or the end of the document.

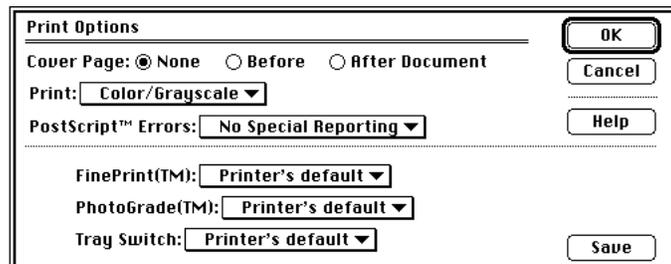
1 Choose Print from the File menu.

The Print dialog box appears.

2 Select the options you want.

3 Click Options.

The Print Options dialog box appears.



4 Click the Before or After Document button to indicate the cover page position you want, or click None to print the document without a cover page.

5 Click OK.

6 Click Print in the Print dialog box.

The cover page will print each time you print your document.

Printing grayscale documents

When you print a document containing shades of gray, you can choose to maximize either image quality or speed. The Print Options dialog box provides three choices: printing in black and white, printing in grays that closely approximate the colors or grays on the screen, or printing in grays calibrated to match those on the computer screen.

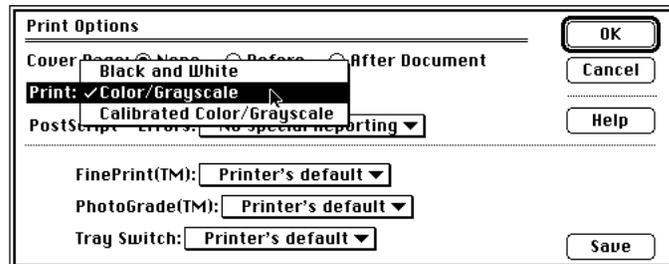
- 1 Choose Print from the File menu.

The Print dialog box appears.

- 2 Select the options you want.

- 3 Click Options.

The Print Options dialog box appears.



- 4 Choose Black and White, Color/Grayscale, or Calibrated Color/Grayscale from the Print pop-up menu.

Note: When printing grays, you will see the best results if you choose Color/Grayscale.

- 5 Click OK.
- 6 Click Print in the Print dialog box.

Reporting printing errors

You can specify how printing errors are reported when they occur. You can have the printer provide no reporting, provide a summary of the print error on your Macintosh screen (when using foreground printing), or print a page reporting the error.

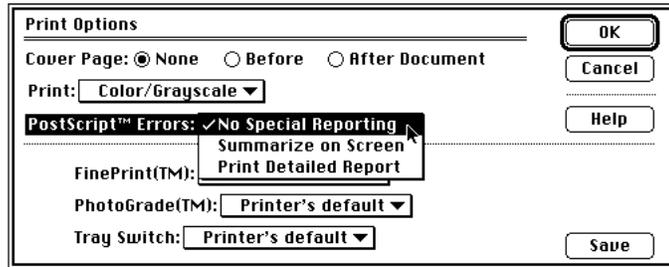
- 1 **Choose Print from the File menu.**

The Print dialog box appears.

- 2 **Select the options you want.**

- 3 **Click Options.**

The Print Options dialog box appears.



- 4 **Choose No Special Reporting, Summarize on Screen, or Print Detailed Report from the PostScript Errors pop-up menu.**
- 5 **Click OK.**
- 6 **Click Print in the Print dialog box.**

Turning FinePrint or PhotoGrade on or off

FinePrint smoothes out lines and curves and enhances text and line graphics that would normally appear jagged. For documents that require the finest quality text that the printer can produce, turn FinePrint on.

PhotoGrade enhances the printed look of images, such as scanned photographs, to produce added clarity, finer shading, and better contrast. For documents that require images to be printed with the best quality that the printer can produce, turn PhotoGrade on.

IMPORTANT PhotoGrade is available only when the LaserWriter 16/600 PS has been upgraded to a minimum of 12 MB of RAM. You can upgrade your printer memory by purchasing the Macintosh 4 MB Memory Expansion Kit (1-4 MB SIMM), part number M1507LL/A. For more information about expanding the printer's memory, see Chapter 5 and ask an Apple-authorized dealer.

Having both FinePrint and PhotoGrade on can affect how images print. For documents that have many images and require high-quality reproduction, you may want to turn FinePrint off. To determine the effect of printing using FinePrint and PhotoGrade, you can print portions of a document with FinePrint and PhotoGrade turned on or off to see the differences in printed output.

You can turn FinePrint or PhotoGrade on or off from the Print Options dialog box.

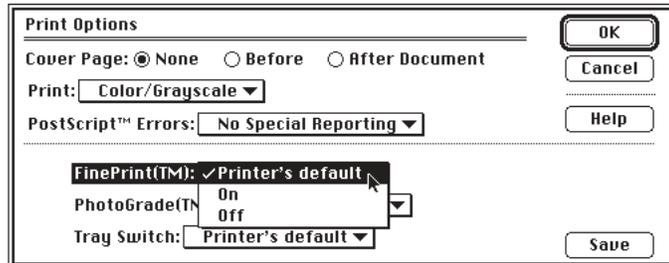
1 Choose Print from the File menu.

The Print dialog box appears.

2 Select the options you want.

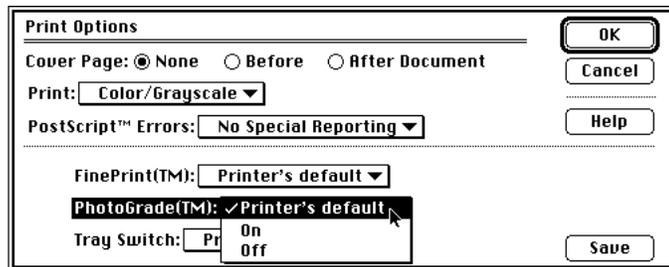
3 Click Options.

The Print Options dialog box appears.



To use the printer's current default setting for FinePrint (leaving the printer's setting unchanged), choose Printer's default. The printer administrator sets the default to be on or off. Ask your administrator how it's set.

4 Choose On, Off, or Printer's default from the FinePrint pop-up menu.



To use the printer's current default setting for PhotoGrade (leaving the printer's setting unchanged), choose Printer's default. The printer administrator sets the default to be on or off. Ask your administrator how it's set.

5 Choose On, Off, or Printer's default from the PhotoGrade pop-up menu.

After making your selections, you can click the Save button to have the printer use your settings for the FinePrint, PhotoGrade, and Tray Switch options as default settings. The printer will use the new default settings from then on when printing documents from any user on the computer network.

6 Click OK.

7 Click Print in the Print dialog box.

Turning tray switching on or off

Tray switching allows you to switch automatically between the paper cassette and the multipurpose tray (or other optional paper source) without reloading paper when one paper source runs out of paper.

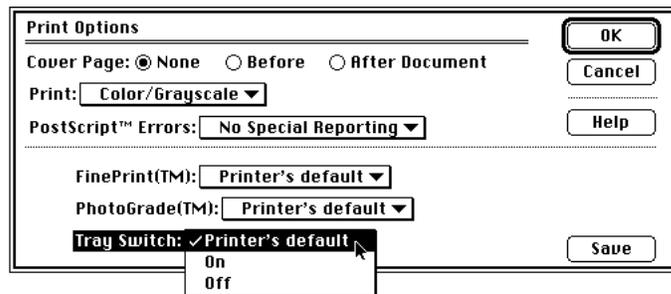
- 1 Choose Print from the File menu.

The Print dialog box appears.

- 2 Select the options you want.

- 3 Click Options.

The Print Options dialog box appears.



- 4 Choose On, Off, or Printer's default from the Tray Switch pop-up menu.

To use the printer's current default setting for tray switching (leaving the printer's setting unchanged), choose Printer's default. The printer administrator sets the default to be on or off. Ask your administrator how it's set.

After making your selections, you can click the Save button to have the printer use your settings for the FinePrint, PhotoGrade, and Tray Switch options as default settings. The printer will use the new default settings from then on when printing documents from any user on the computer network.

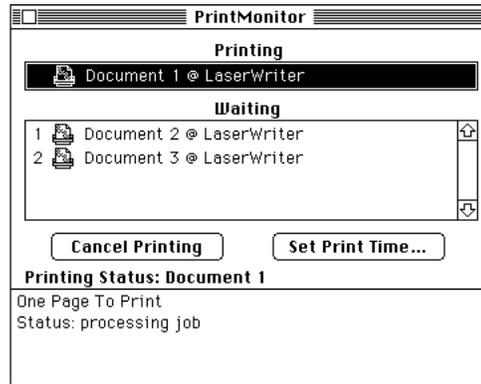
- 5 Click OK.
- 6 Click Print in the Print dialog box.

Printing while using the computer for other work

You can use your Macintosh for other work while you're printing on the LaserWriter 16/600 PS if the background printing option is turned on in the Chooser.

You can control background printing with PrintMonitor, a program that's part of your system software. After you have sent a print job to the printer and background printing begins, PrintMonitor opens automatically and its name appears in the Application menu at the right end of the menu bar. When you choose PrintMonitor from the Application menu, the PrintMonitor window appears.

- 1 After you have started printing a document, choose PrintMonitor from the Application menu.

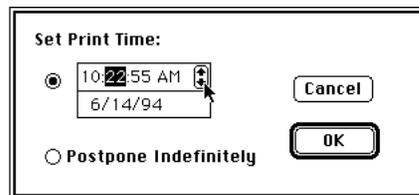


The name of the document that is currently printing appears at the top of the window. At the bottom of the window you see messages about the status of the current print job. Watching the status messages can be helpful when troubleshooting printing problems. When more than one job is waiting to be printed, a list of print jobs appears in the waiting list showing the order in which they will be printed.

- To cancel a print job, select the document name and click Cancel Printing.
- To remove a job from the waiting list, select the job name and click Remove From List.

- To change the order of the print job, drag its icon to a new position in the waiting list.
- To set a specific print time for a document, click the Set Print Time option.

You can postpone printing or set a specific time for a document to be printed by selecting a document name and clicking the Set Print Time button. The Set Print Time dialog box appears.



- To set a specific print time for a document, click on the time or date and change them by clicking the up and down arrows.
- To postpone printing a document indefinitely, click the Postpone Indefinitely option.

When you click OK, the PrintMonitor window reappears, showing a clock icon before the print jobs that have a set printing time and a minus sign before jobs that have been postponed.

2 Click on a window or your desktop to continue working while documents print.

You can also click the close box to close the PrintMonitor Window. (To reopen the window, choose Open from the PrintMonitor's File menu.)

Using the Apple Printer Utility

The Apple Printer Utility program supplied with the printer software allows the printer administrator to control various aspects of how the LaserWriter 16/600 PS works. For information about using the Apple Printer Utility, see Chapter 2.

7

Windows and DOS Users



The LaserWriter 16/600 PS comes with software for IBM PC or compatible computers using Windows 3.1. This chapter describes how to install and use the Adobe Printer Driver and other printer software.

Note for Windows NT users: See “Installing Software for Windows NT” for installation instructions. Refer to your Windows NT manual for instructions about printing.

System requirements

To use the printer, your computer system must meet these requirements:

- IBM PC or compatible, with an 80386 or higher CPU
- hard disk drive
- at least 4 megabytes (MB) of random-access memory (RAM)
- Microsoft Windows 3.1 or higher or Windows for Workgroups 3.1 or higher
- MS-DOS version 3.3 or higher (5.0 or higher recommended)
- 3.5-inch floppy driver that reads 1.44 MB disks
- NetWare requires a 80386 CPU with NetWare version 3.0 or higher; version 4.0 for bindery emulation

Installing all the printer software for the IBM PC or compatible computer requires approximately 2 MB of free space on your hard disk.

Installing the Windows printer software

To install the Windows printer software, follow these steps. These instructions assume that you have a mouse or similar pointing device. If you do not, see the instructions that came with Windows to find out how to perform these steps using a keyboard.

1 Find the Windows disks that came with the printer and make sure they're locked.

You lock a disk by sliding up its write-protection tab. The disk is locked when you can see through the hole. For more details, see the instructions that came with your computer.

2 Start Windows.

Before installing the software, make sure the Windows Control Panel and Printer control panel are closed.

3 Insert *Windows Printer Disk 1* into a floppy disk drive.

4 Read the README.WRI file on *Windows Printer Disk 1* to check for late-breaking news.

The file may contain updated installation instructions.

When you're finished reading the file, quit the Write program to return to Windows.

5 From the Windows Program Manager, select Run from the File menu.

6 Type `a:\setup` or `b:\setup` (depending on which drive holds your installation disk) in the command line field and click OK.

After a few moments, a welcome message is displayed that allows you to select an Express Installation or a Custom Installation.

The Express Installation installs all the software you need to print with your LaserWriter 16/600 PS. It also installs the LaserWriter Utility for Windows program, which is used for naming the printer and performing various printer administrative functions.

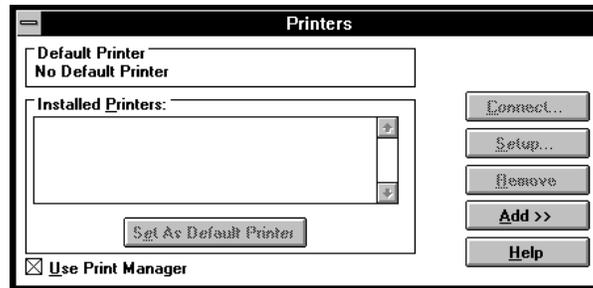
The Custom Installation allows you to specify what portions of the software you would like to install. The Custom Installation also allows you to install the NetWare DOS utility programs LWFORM and LWPMAN.

7 Click Express Installation.

Instructions appear describing the next three steps in the installation procedure.

8 Click Continue.

The Printers control panel appears.



9 Insert Windows Printer Disk 2 in the floppy disk drive.

10 Click Add.

A list of printers appears.

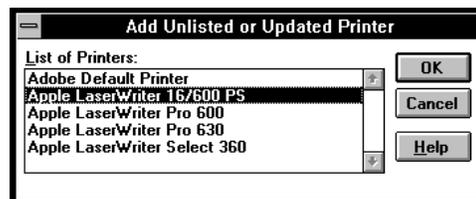
11 Select "Install Unlisted or Updated Printer" in the list of printers, if it is not already selected.

12 Click Install.

The Install Driver dialog box appears.

13 Click OK.

Type the path of the floppy disk drive that holds the installation disk (a:\ or b:\) in the Install Driver dialog box, if necessary. The Add Unlisted or Updated Printer dialog box appears.



- 14 Select the Apple LaserWriter 16/600 PS printer name and click OK.**

The Adobe Printer Driver files and LaserWriter Utility for Windows program are copied to your hard disk.

After the printer software has been copied to your hard disk, a message appears telling you that the driver software was successfully installed.

- 15 Click OK to dismiss the message.**

- 16 Click the Set As Default Printer button.**

- 17 If your computer is connected directly to the printer by a parallel cable, skip to step 18. If it's connected to the printer over a NetWare network, follow these steps:**

- Click Connect. A dialog box opens.
- Click Network. The Network dialog box opens.
- Select the printer in the Network dialog box.
- Select an available queue in the Network dialog box (usually LPT2).
- Click Connect.
- Click Close. The Network dialog box closes.
- In the Connect dialog box, select the port the printer is assigned to.
- Click OK. You return to the Printers control panel.

- 18 In the Printer's control panel, click Close.**

- 19 Choose how to proceed:**

- To read the Read Me file again, click View Read Me.
- To further configure your printer software with the LaserWriter Utility, click Run LaserWriter Utility. For most users, the default printer driver settings should suffice. For instructions on using the LaserWriter Utility, see Chapter 3.
- To begin working with Windows programs, click Return to Windows.

What to do next

The Adobe Printer Driver is now installed. To learn to use it, turn to “Printing from Windows Programs,” later in this chapter.

Installing software for Windows NT

Follow these steps to install the LaserWriter 16/600 PS PostScript Printer Description file (PPD file) on a Windows NT system.

- 1 Start Windows NT.**
- 2 Open the Print Manager icon.**
- 3 Select Create Printer from the Printer pop-up menu.**
- 4 Select Other from the driver list box.**

Windows NT prompts you to insert a disk.

- 5 Insert *Windows Printer Disk 2* in the appropriate drive and click OK.**
- 6 Follow the instructions that appear on the screen.**

Printing from Windows programs

After you have connected the printer to your computer and installed the printer driver, you're ready to start printing. This section explains the basic steps required to print a document, though the details can vary from one program to another. To find out more about printing from your programs, read the documentation that came with your programs. If you have Windows NT, see the documentation that came with it for printing instructions.

To print a document from a Windows program, the program must be open and the document window must be active. When your program is open and your document window is active, follow these steps to print.

- 1 Choose Print from the File menu.**

In most cases a Print dialog box appears in which you can select options, including the number of copies and the pages to print. Depending on your program, the Print dialog box may offer other options.

- 2 Select the options you want and click Print.**

A message appears while the document is queued to the Print Manager. After the message disappears, you can go on with your work while your document is being printed.

Setting LaserWriter 16/600 PS printing options

You can change the Adobe Printer Driver and LaserWriter 16/600 PS default options. For example, you can change which tray the printer automatically draws paper from, specify a default paper size, or change the preset paper orientation to Portrait or Landscape.

You set printer options in the printer driver Setup dialog box, which you can open in three ways, as explained in the sections that follow:

- from the Control Panel
- from your program
- from the Print Manager

Note: When changing options to print a specific document, it's preferable to change the options from within the program. Settings changed from within an program will affect that document only, and not all documents printed afterward. Many print options you set in the Setup dialog box apply to all documents printed from all programs. If you use the Setup dialog box to change these options for a single document, you must return to the Setup dialog box to restore the options to their original settings before printing another document.

Opening the printer Setup dialog box from the Control Panel

- 1** From the Program Manager, double-click the Control Panel icon to display the Control Panel.
- 2** Double-click the Printers icon to display the Printers dialog box.
- 3** Select the printer you want to set up from the List of Installed Printers.
- 4** Choose Setup to display the Setup dialog box for the printer.

You can also use the Printers dialog box to select a default printer, to switch the Print Manager on and off, and to connect your printer to a different port.

Opening the printer Setup dialog box from your program

Most programs have a Print Setup command in their File menus.

- 1 Choose the Print Setup command from the File menu.**

This command usually displays the Print Setup dialog box.

- 2 If you are using more than one printer, select the printer you want to set up.**

- 3 Click the Options (or Setup) button to display the Setup dialog box.**

Note: The names of the commands and buttons used to display the printer Setup dialog box vary from program to program. See your program's documentation for the precise command and button names it uses.

Opening the printer Setup dialog box from the Print Manager

- 1 From the Program Manager, double-click the Print Manager icon to display the Print Manager.**

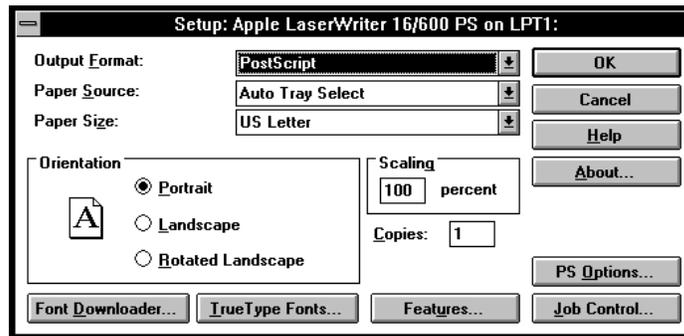
- 2 Select the printer you want to set up from the list of Printers.**

- 3 Choose the Setup or Printer Setup command from the Options menu to display the Setup dialog box for your printer.**

Selecting printer options in the Setup dialog box

You can change the most commonly used printer settings from the Setup dialog box. (The buttons in the dialog box also give you access to additional printer settings. For information about these settings, see “Additional Printer Options,” next.) The previous sections explain how to open the Setup dialog box.

The Setup dialog box provides the following main options:



- **Output Format** Selects either PostScript or Encapsulated PostScript. Use PostScript for normal printing. Use Encapsulated PostScript to create a file that can be placed in a document of a program that accepts Encapsulated PostScript images.
- **Paper Source** Selects which paper cassette or multipurpose tray to use as the paper source.
- **Paper Size** Specifies the paper size. Select the size that matches the paper in the current paper source.
- **Orientation** Selects the orientation of the printed page. You can select Portrait (tall), Landscape (wide), or Rotated Landscape (which prints text and images in landscape orientation, but reverses the top and bottom of the page).
- **Scaling** Shrinks or enlarges the print image by a percentage you specify. You can scale the image from 10 percent to 400 percent.
- **Copies** Specifies the number of copies of each document page to print.

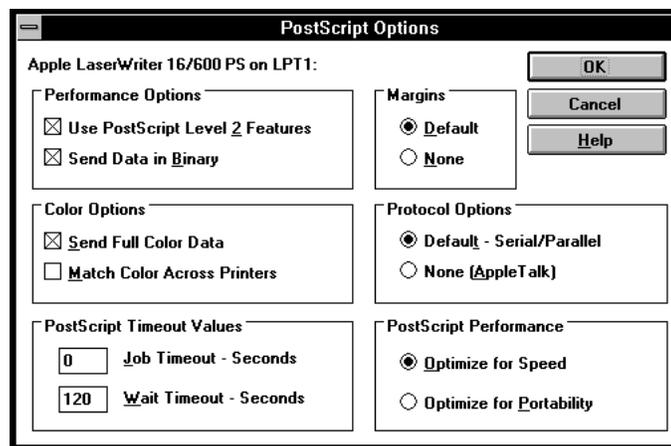
Additional printer options

The Setup dialog box also contains buttons that allow you to specify additional printer settings for:

- PostScript options
- Font Downloader
- TrueType fonts
- Features
- Job control

PostScript options settings

Click the PS Options button in the Setup dialog box to display the PostScript Options dialog box. This dialog box controls color printing, the communication protocol, and PostScript Level 2 features.



The PostScript Options dialog box allows you to set the following options:

- **Use PostScript Level 2 features** Tells the driver to use PostScript Level 2 features when printing documents. Use the Level 2 features to speed printing.

- **Send Data in Binary** Tells the driver to send data to the printer in a binary format. Sending data in binary format may improve the printer's performance when printing images or documents containing many downloadable fonts. To set up the printer, turn on the Send Data in Binary feature in the PostScript Options dialog box and use the Send Mode button in the Job Control dialog box, as explained in "Job Control Settings," later in this chapter.
- **Send Full Color Data** Tells the driver to print colors on a color printer. Usually it is best to select this option even when printing to a non-color printer. Colors print in finer shades of gray.
- **Match Colors Across Printers** Tells the driver to use the color-matching feature with PostScript Level 2 printers. The LaserWriter 16/600 PS does not print in color, but use this option if you select a printer that has color capabilities. The color matching feature slows printing somewhat, but produces consistent colors on different Level 2 PostScript printers and gives results closer to the on-screen image.
- **Job Timeout** Sets the maximum number of seconds that the printer will spend trying to print a document before canceling the print job. A value of zero means that the job is never canceled.
- **Wait Timeout** Sets the maximum number of seconds that the printer will wait for Windows to send data before canceling the print job. A value of zero means that the job is never canceled.
- **Margins** Changes the printer margins. Default tells the driver to accurately report the printable area to the program. Most programs work best with the Default option. The None option tells the driver to report the size of the paper. Choose None only if a program is printing pages with the edges clipped.
- **Protocol Options** Tells the print driver whether to begin and end print jobs with Ctrl-D. Default means it will begin and end jobs with a Ctrl-D, and None means it won't. If the printer is connected to your computer or network by its parallel port, click Default; if it's connected by its Ethernet port, click None.

- **PostScript Performance** Tells the driver to build PostScript document descriptions that print as fast as possible when Optimize for Speed is selected. Such document descriptions might not print successfully on printers with limited memory. Select Optimize for Portability to tell the driver to build PostScript document descriptions that print successfully on many different printers.

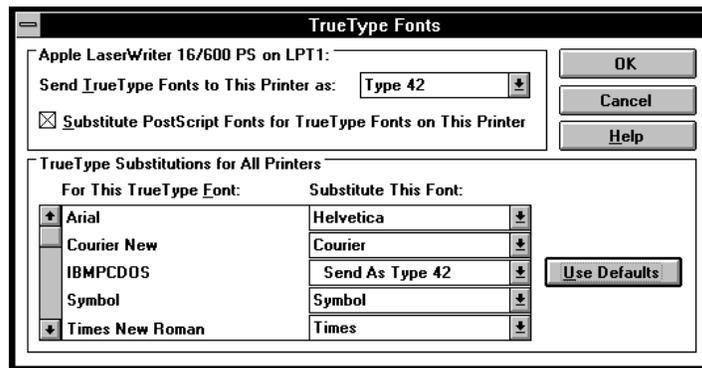
Font Downloader

Click the Font Downloader button in the Setup dialog box to display the Font Downloader dialog box. This dialog box lets you specify the fonts to download to the printer and the destination device. It also lets you create and delete font groups.

For more information about downloading fonts to the printer, see “Downloading Fonts,” later in this chapter.

TrueType font settings

Click the TrueType Fonts button in the Setup dialog box to display the TrueType Fonts dialog box. This dialog box controls the way the driver prints TrueType fonts used in your documents. The driver can either substitute available PostScript fonts for TrueType fonts, or it can automatically create PostScript versions of TrueType fonts and download them to the printer when you print.



The TrueType Fonts dialog box allows you to set the following options:

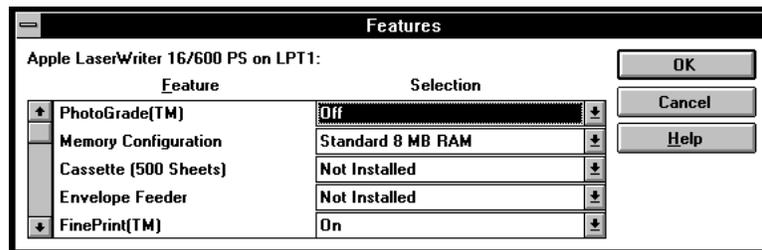
- **Send TrueType Fonts to This Printer as** Tells the driver what kind of PostScript fonts to create for TrueType fonts. Select one of these options:
 - Type 1 to synthesize outline PostScript fonts.
 - Type 3 to synthesize bitmapped PostScript fonts.
 - Type 42 to package TrueType fonts for the PostScript printer. This option provides the best quality when printing TrueType fonts.
 - Don't Send to use TrueType fonts that are resident in the printer or are supplied by print-manager software. (No TrueType fonts are resident on the printer as it is shipped from the factory.)
- **Substitute PostScript Fonts for TrueType Fonts on This Printer** When checked, tells the driver to substitute PostScript fonts available to the printer for TrueType fonts. The driver uses the TrueType Substitutions table to determine which PostScript font to use for each TrueType font installed on your system. Substituting PostScript fonts for TrueType fonts speeds printing (especially when the PostScript fonts are resident in the printer).

- **TrueType Substitutions for All Printers** Lists all the TrueType fonts installed on your system, and for each TrueType font, shows which PostScript font is substituted for a TrueType font. This table is used only when you select the “Substitute PostScript Fonts for TrueType Fonts on This Printer” option.
- **For This TrueType Font** Shows a list of all the TrueType fonts installed on your system.
- **Substitute This Font** Shows a list of the PostScript fonts that are substituted for the TrueType fonts. Each drop-down list box lists all the PostScript fonts available to the printer. PostScript fonts available to the printer include all the fonts resident in the printer’s ROM, as well as all the Type 1 fonts that you have downloaded to the printer’s RAM or hard disks. Each drop-down list box also contains a Send As option. The Send As option is the option currently selected in the “Send TrueType Fonts to This Printer As” drop-down list box. The Use Defaults button restores the original PostScript font substitutions.



Features settings

Click the Features button in the Setup dialog box to display the Features dialog box. This dialog box contains options for configuring the printer software to use optional printing features that you install on the LaserWriter 16/600 PS. Use this dialog box to set up optional features that you purchase for your LaserWriter 16/600 PS such as additional memory, the 500-sheet feeder, and the envelope feeder.

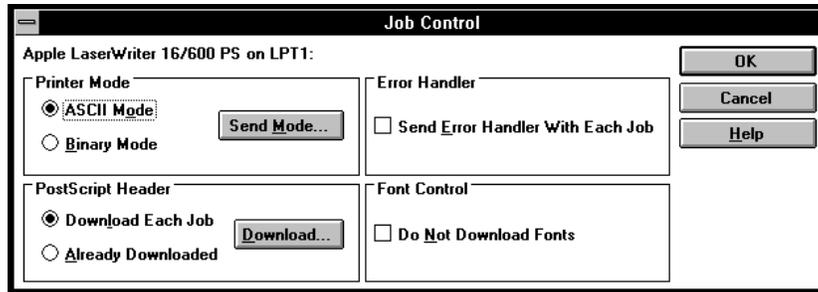


The Features dialog box allows you to configure the printer to use the following options:

- **Memory configuration** Tells the printer driver the amount of RAM installed in the printer.
- **Cassette** Indicates whether you have installed the 500-sheet feeder.
- **Envelope feeder** Indicates whether you have installed an envelope feeder.
- **PhotoGrade** Turns PhotoGrade on or off. To use PhotoGrade, your printer must be upgraded to have at least 12 MB of RAM. PhotoGrade enhances the printed look of images, such as scanned photographs, to produce added clarity, finer shading, and better contrast. For documents that require images to be printed with the best quality that the printer can produce, turn PhotoGrade on.
- **FinePrint** Turns FinePrint on or off. FinePrint smoothes out lines and curves and enhances text and line graphics that would normally appear jagged. (However, to enhance the quality of images, you may want to turn FinePrint off.)
- **TraySwitch** Turns tray switching on or off.

Job control settings

Click the Job control button in the Setup dialog box to display the Job control dialog box. The PostScript Job Control dialog box controls such options as when the PostScript header and the PostScript error handler are sent to your printer.



The following list briefly describes the printer settings in the Job Control dialog box.

- **Printer Mode** By default, the LaserWriter 16/600 PS is set up to receive data in ASCII format. If your document contains large images or uses many soft fonts, you can speed its printing by choosing Binary mode. You can change the mode by clicking ASCII or Binary then clicking the Send Mode button. If you set up your printer to accept binary data, remember that you must also select the Send Data in Binary option in the PostScript Options dialog box.

- **PostScript Header** The PostScript header contains instructions that a PostScript printer needs to print documents created by the driver. If your printer is connected directly to your computer only, you can save time by choosing the Download button to send the PostScript header only once—when you switch on your printer. Download Each Job tells the driver to send the PostScript header with every document. Already Downloaded tells the driver not to send the PostScript header with documents. Download tells the driver to send the header when you choose the Download button.
- **Error Handler** Tells the driver to send a special PostScript error handler with every document you print. The error handler prints a page with a PostScript error message when a document fails to print correctly. You can use this option as an aid in troubleshooting print job problems.
- **Font Control** This advanced feature tells the driver not to download soft fonts when printing documents. Use this option only if you know that the fonts you use in your documents are always available to the printer.

Using a hard disk

You can add an internal or external hard disk to the LaserWriter 16/600 PS. A hard disk can store many soft fonts so they don't need to be downloaded each time you use them, thus expediting your printing. Chapter 5 explains how to install a hard disk.

After the hard disk is installed, you must add it to the device list and initialize it, as explained in the next two sections.

Adding a hard disk to the device list

1 From the Program Manager, open the Control Panel.

2 Double-click the Printers icon.

The Printers dialog box appears.

3 If it is not already selected, select the LaserWriter 16/600 PS from the Installed Printers list.

4 Click Setup.

The Setup dialog box appears.

Note: You can also open the Setup dialog box from within many Windows programs. Check your program documentation to see if you can change your printer setup from within your program.

5 Click Font Downloader.

The Font Downloader dialog box appears.

6 Click Device Installer.

A dialog box opens.

7 Click Add New.

Another dialog box opens.

8 Make sure “Magnetic disk” is selected, then click Add.

9 Complete the dialog box as follows:

- Fill in the Available Memory box with the number of kilobytes your hard disk can store.
- Make sure the Read Font Metrics Files checkbox is *not* checked.
- Make sure the Volatile checkbox is *not* checked.
- Make sure the Writable checkbox is checked.

10 Click Add.

A dialog box opens.

11 Type a name for the hard disk.

12 Click a button to indicate which SCSI number the hard disk has.

If it's an internal hard disk, the SCSI number is 0.

13 Click OK.

You return to the Device Installer dialog box.

14 Click Close.

Initializing the hard disk

If you attach a hard disk to the printer to store fonts, you must initialize it before you can use it. You can do so with the Apple Printer Utility on a Macintosh computer, as described in Chapter 2, or by following the steps below on a Windows computer.

WARNING Initializing the hard disk erases all the data on it. Initialize the hard disk only if you're sure it's new or if it's OK to erase it.

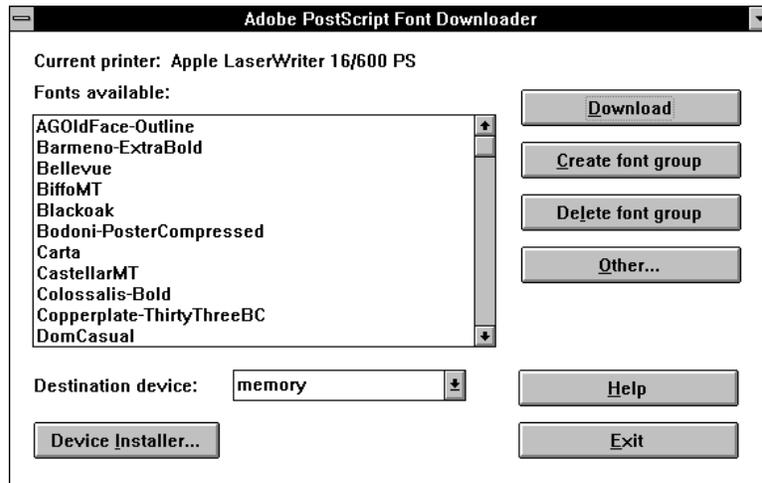
- 1** From the Program Manager, open the Control Panel.
- 2** Double-click the Printers icon to display the Printers dialog box.
- 3** If it's not already selected, select the LaserWriter 16/600 PS from the Installed Printers list.
- 4** Click Setup.

The Setup dialog box appears.

Note: You can also open the Setup dialog box from within many Windows programs. Check your program documentation to see if you can change your printer setup from within your program.

5 Click Font Downloader.

The Font Downloader dialog box appears.



6 Click Other.

A dialog box opens.

7 Click the Format Device button, then click OK.

8 Select the disk name and click OK.

Initializing the hard disk takes a few minutes. The Ready/In Use light on the printer blinks until initialization is complete.

Downloading fonts

The LaserWriter 16/600 PS uses downloadable Adobe Type 1 fonts, which are a type of soft font. The Adobe Printer Driver automatically downloads any Adobe Type 1 fonts from your computer's hard disk to the printer's memory as needed for each document that you print. You can also use the driver to manually download fonts to the printer's memory or to a hard disk installed or connected to the printer when you don't want to download fonts for each document. Manually downloading fonts can speed printing.

Note: The LaserWriter 16/600 PS has a set of built-in fonts that do not need to be downloaded. These fonts are listed in Appendix C.

Whether it is better to let Windows download fonts automatically or to manually download fonts yourself depends on the number and frequency with which fonts are used in a document and the size of your printer's memory or hard disk.

Downloading a Type 1 font to a PostScript printer usually takes from 15 to 20 seconds. When a program prints a document containing a font that is not resident in your printer, Windows automatically downloads the font with the document. However, after the document prints, any fonts that have been downloaded with the document are cleared from the printer's memory. This means that each time you print a document that contains fonts not resident in the printer, the fonts must be downloaded.

By contrast, when you manually download a Type 1 font with the Font Downloader, the font remains in printer memory (RAM) until you switch off or restart the printer or when memory limitations are exceeded. Manually downloading frequently used fonts therefore reduces printing time because the fonts do not have to be sent to the printer each time they are used. Keep in mind, however, that fonts manually downloaded to RAM reduce the overall amount of memory available for printing and so may affect the printing of documents that do not contain the downloaded fonts.

In addition to downloading fonts, you can also use the Font Downloader to

- add a hard disk (or other font storage device) to the printer driver's device list
- format a hard disk for use as a soft-font storage device
- manually download soft fonts to a hard disk attached to your printer
- perform various printer management tasks, such as listing and removing downloaded fonts, manually downloading PostScript language files, clearing the printer font cache, and resynchronizing your printer with Windows

See your network administrator for more information about performing these tasks on your network, or choose the Help button on the Font Downloader dialog box to see instructions for these tasks.

Downloading fonts manually to RAM or to the hard disk

Each user must download the fonts he or she wants to use on the printer. You can use only those fonts you have downloaded yourself, even if someone else has already downloaded the font. The printer driver cannot determine what fonts others have downloaded.

Before you begin: If you are downloading fonts to a hard disk, you must add the hard disk to the device list and initialize it, as explained earlier in this chapter.

1 From the Program Manager, open the Control Panel.

2 Double-click the Printers icon.

The Printers dialog box appears.

3 If it is not already selected, select the LaserWriter 16/600 PS from the Installed Printers list.

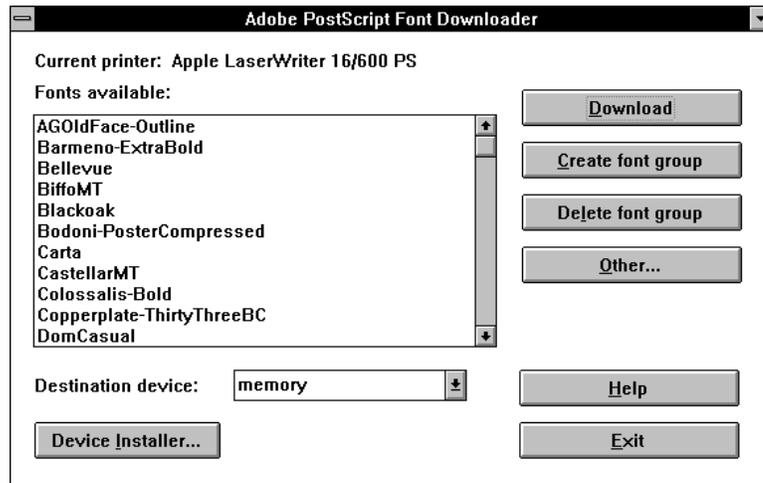
4 Click Setup.

The Setup dialog box appears.

Note: You can also open the Setup dialog box from within many Windows programs. Check your program documentation to see if you can change your printer setup from within your program.

5 Click Font Downloader.

The Font Downloader dialog box appears.



6 Select the destination device from the drop-down list box.

To download to RAM, choose “memory,” or to download to a hard disk, choose the name of the hard disk.

7 Select the fonts you want to download from the Fonts Available list.

8 Click Download.

The Downloader informs you of its progress as it downloads fonts.

Note: While downloading, you can use other programs, but you can't print.

9 After you are finished downloading fonts, click Exit.

You are returned to the Setup dialog box.

10 Click OK to close the Setup dialog box.

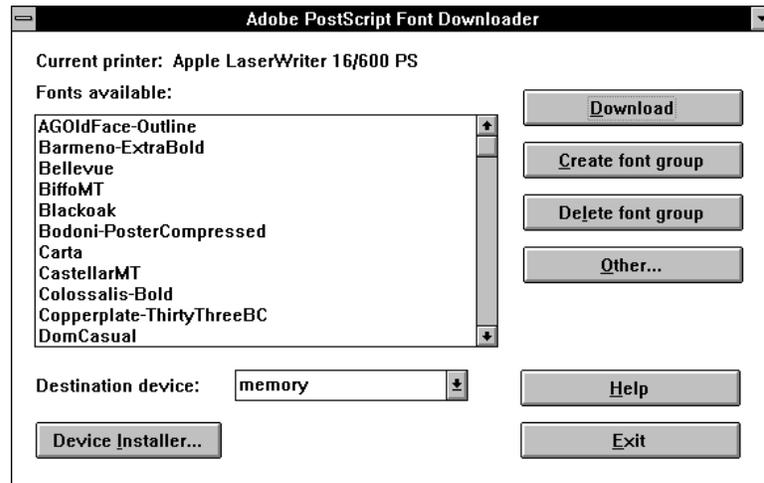
11 Click Close to close the Printers dialog box.

12 Choose Exit from the Settings menu to close the Control Panel.

You can confirm that the fonts were downloaded by printing a font catalog with the LaserWriter Utility for Windows, as described in Chapter 3.

5 Click Font Downloader.

The Font Downloader dialog box appears.



6 Select the destination device from the drop-down list box.

To download to RAM, choose “memory,” or to download to a hard disk, choose the name of the hard disk.

7 Select the fonts you want to download from the Fonts Available list.

8 Click Download.

The Downloader informs you of its progress as it downloads fonts.

Note: While downloading, you can use other programs, but you can't print.

9 After you are finished downloading fonts, click Exit.

You are returned to the Setup dialog box.

10 Click OK to close the Setup dialog box.

11 Click Close to close the Printers dialog box.

12 Choose Exit from the Settings menu to close the Control Panel.

You can confirm that the fonts were downloaded by printing a font catalog with the LaserWriter Utility for Windows, as described in Chapter 3.

Printing to a PostScript file

As an alternative to printing your document on the printer, you can save a PostScript language description of your document as a disk file. PostScript language descriptions of documents can be useful for

- creating document archives
- printing documents without using the program that created them (at a service bureau, for example)
- diagnosing printing problems

You may also want to print an Encapsulated PostScript (EPS) file. You can use EPS files to export single pages from one program to another. EPS files can include any combination of text, graphics, and images, but they do not describe complete documents. For example, by saving an EPS file, you can insert a page of a document created with one program as an illustration in a document created by another program.

Note: PostScript files are normally ASCII text files that can be opened with any word processing program. However, if you select the Send Data in Binary option in the PostScript Options dialog box, the PostScript files may include binary characters that make them unsuitable for use with a word processor.

You can use either of two methods to create PostScript files. If your program's Print dialog box has a Print to File checkbox, you can use this checkbox to create a PostScript file; this is the preferred method. Refer to your program documentation for information. If your program's Print dialog box does not have a Print to File checkbox, however, you need to make temporary changes to your printer setup to create a PostScript file, as described next.

Using the driver to print to a PostScript file

Using the driver to print to a PostScript file is a three-step process. First, change your printer setup, then use your program to create the file, and finally reset your printer setup for normal printing.

Step 1: Changing your printer setup to print to a PostScript file

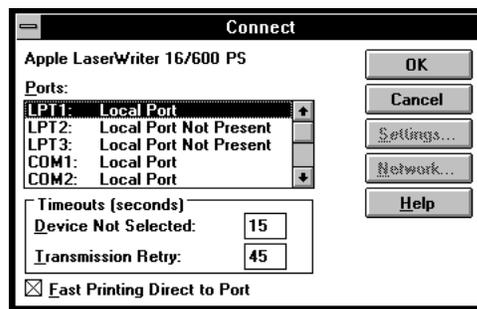
- 1** From the Program Manager, open the Control Panel and double-click the Printers icon.

The Printers dialog box appears.

- 2** If it is not already selected, select the name of the PostScript printer that you are using from the Installed Printers list.

- 3** Select **Connect**.

The Connect dialog box appears.



- 4** Select **FILE** from the Ports list box.

You may have to scroll through the list to find this selection.

- 5** Choose **OK** to close the Connect dialog box and return to the Printers dialog box.

- 6** Choose **Setup**.

The driver Setup dialog box appears.

- 7 After changing (or confirming) your printer settings, choose OK to close the dialog box.**

Note: Choose settings in the PostScript Options dialog box that will produce a file that prints correctly on the destination printer. For example, select the Use PostScript Level 2 Features option if you are sure that you will be printing the file only on Level 2 printers, such as the LaserWriter 16/600 PS. If you plan to use a printer that does not support binary communication, disable the Send Data in Binary option. Selecting the Optimize for Portability option creates PostScript files that print successfully from different programs on a wide variety of printers and imaging devices; it is recommended that you enable this option.

- 8 Choose Close to close the Printers dialog box.**
- 9 Choose Exit from the Settings menu to close the Control Panel.**

Your computer is now set up to create PostScript files when you choose the Print command from a Windows program.

Step 2: Printing to a PostScript file

- 1 Start the program and open the document for which you want to create a PostScript file.**
- 2 If necessary, select the Print Setup command from the File menu, change the settings as appropriate, and select OK.**
- 3 Select the Print command from the File menu.**

Your program's Print dialog box appears.

- 4 Choose OK.**

A dialog box appears that asks you to name the file.

- 5 Enter a pathname and filename for the file.**

If you don't specify a pathname, the PostScript file is placed in your program's default directory.

- 6 Choose OK.**

The PostScript file is created, and you are returned to your program.

DOS notes

If you are using DOS programs, refer to the manual that came with your program and follow the instructions for using a PostScript printer. Most DOS programs are either PostScript or PCL5 compatible. The LaserWriter 16/600 PS can handle both types of documents.

Capturing a print queue for DOS printing

You can use the DOS `CAPTURE` command to map the parallel port to a print queue.

- **Log in to the network and enter the `CAPTURE` Command, using the following syntax:**

```
CAPTURE /q=queue_name
```

Unless you specify otherwise, the command assumes that you are mapping the LPT1 port to a queue.

Using the LaserWriter Utility for Windows

The LaserWriter Utility program supplied with the printer software allows the printer administrator to control various aspects of how the LaserWriter 16/600 PS works. For information about installing and using the LaserWriter Utility for Windows, see Chapter 3.

8

UNIX Users



The details of setting up your UNIX workstation depend on which type of UNIX you're running. In most cases, the setup requires superuser privileges and knowledge of the `/etc/hosts` and `/etc/printcap` files and should be done by your local network or printer administrator, as described in Chapter 4.

Once this setup is complete, your network or printer administrator will tell you the name of the printer's local print queues and what sort of documents should be sent to which queue.

Printing from a UNIX workstation to the printer

You don't need any special software to use the printer. On most UNIX systems, you use either the `lpr` or `lp` command to print documents over a TCP/IP network to the printer.

Your printer administrator will generally set up two print queues for the printer—one to print text files (which must have a carriage return appended to the end of each line) and the other to print all other files, including PostScript and PCL files. The names of the print queues typically reflect which sort of document they're for.

Examples for `lpr`

```
lpr -PKeithsLW_text plain.txt
lpr -PKeithsLW_raw postscript.file
```

Examples for `lp`

```
lp -d KeithsLW_text plain.txt
lp -d KeithsLW_text postscript.file
```

The way you print and choose printing options can differ from one application program to another. To find out more about printing from your application programs, read the documentation that came with the programs.

9

Loading Paper



This chapter describes how to load the LaserWriter 16/600 PS paper cassette and multipurpose tray with paper. It describes how to load standard paper, letterhead, three-hole punched paper, envelopes, labels, and transparencies for printing.

You can purchase additional printing options for use with your LaserWriter 16/600 PS, including the LaserWriter 16/600 PS 500-Sheet Feeder, LaserWriter 500-Sheet Universal Cassette, LaserWriter 250-Sheet Universal Cassette, and LaserWriter 16/600 PS Envelope Feeder. This chapter gives instructions for loading paper or envelopes into these options. (For instructions on attaching options, see Chapter 5.)

The way you control the printer from your computer depends on the type of computer and program you are using. For general information about printing with a Macintosh, see Chapter 6. For information about printing with an IBM PC or compatible computer using Microsoft Windows, see Chapter 7. For specific information about printing with a particular program, refer to the documentation that came with the program.

Automatic or manual printing with the LaserWriter 16/600 PS

You can automatically print using paper from the paper cassette or using paper stacked in the multipurpose tray. You can also manually feed paper, envelopes, three-hole punched paper, labels, and transparencies into the printer using the multipurpose tray.

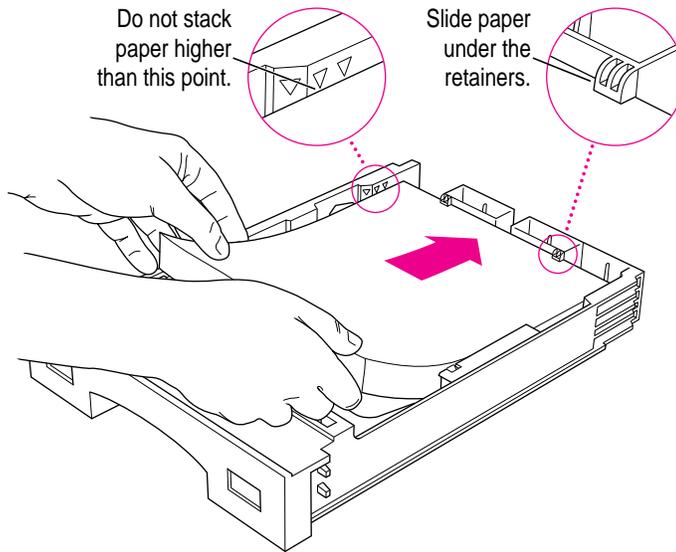
For information about selecting automatic or manual paper feeding, or selecting the cassette or multipurpose tray to print from, see “Printing” in Chapter 6 if you have a Macintosh computer, or see “Printing from Windows Programs” in Chapter 7 if you have an IBM PC or compatible computer using Microsoft Windows.

Using the paper cassette

The paper cassette holds up to 250 sheets of paper. You can fill the cassette with U.S. letter-size paper (or A4 paper, depending on the type of paper cassette you have), letterhead paper, or three-hole punched paper. To refill the paper cassette, insert paper as shown in the following illustrations.

Standard paper

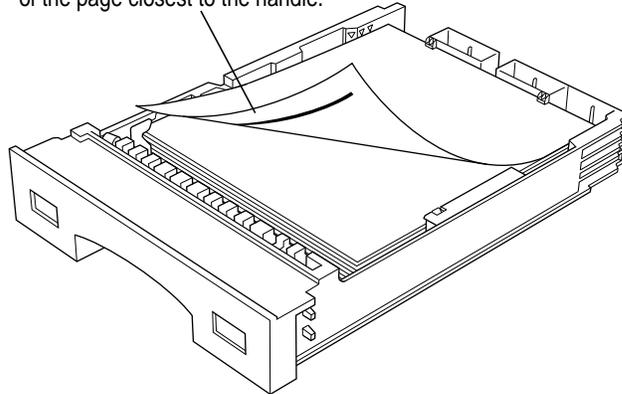
Slide the paper beneath the bracket at the front left of the cassette. Push the paper down if necessary, but don't overload the cassette, or the paper may jam when you print.



Letterhead paper

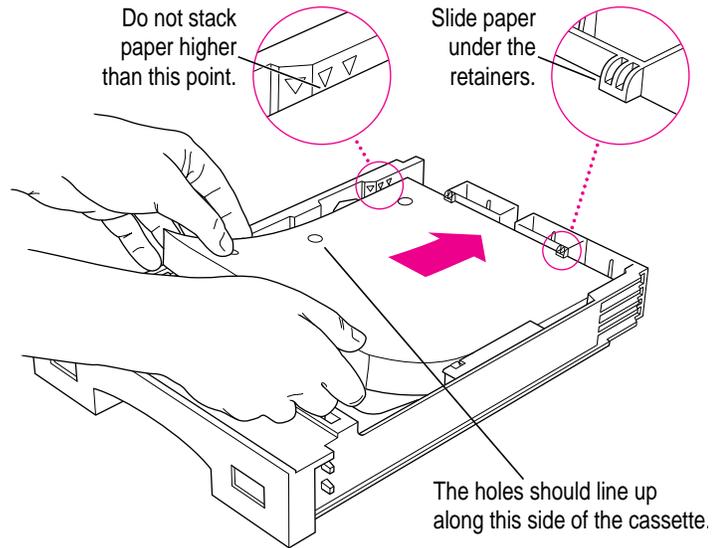
Insert letterhead paper into the paper cassette face down, with the top of the letterhead at the front of the tray (the handle end).

Place letterhead paper face down in the paper cassette, with the top of the page closest to the handle.



Three-hole punched paper

Insert three-hole punched paper into the paper cassette so the holes are toward the left side of the cassette.



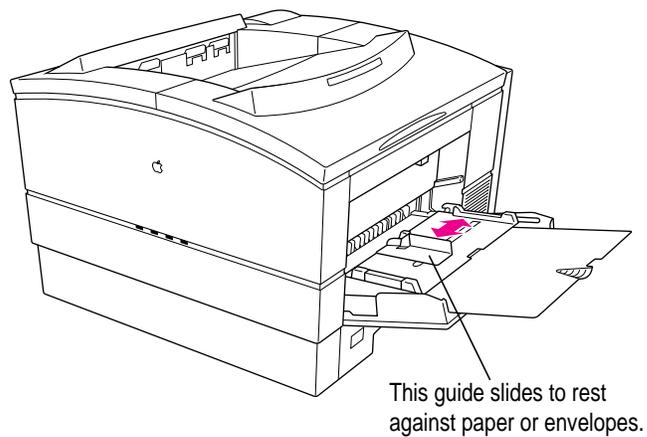
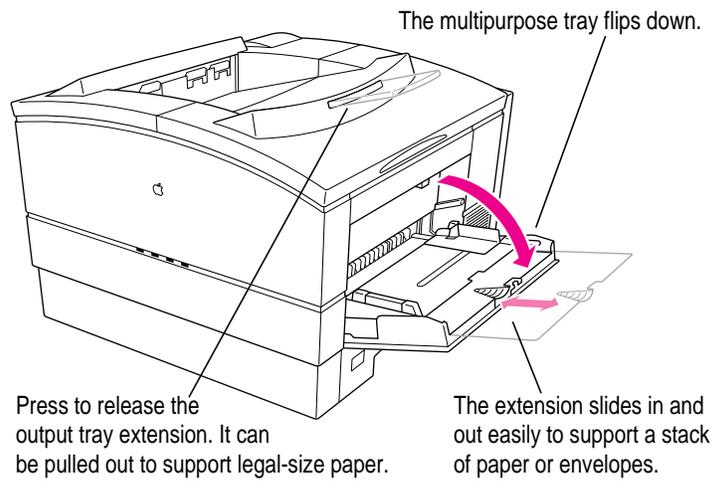
Using the multipurpose tray

The multipurpose tray is built into the printer. As its name suggests, you can use the multipurpose tray in several ways:

- automatic printing
- manual feed printing
- two-sided printing
- envelope printing
- legal-size paper printing

Opening the multipurpose tray

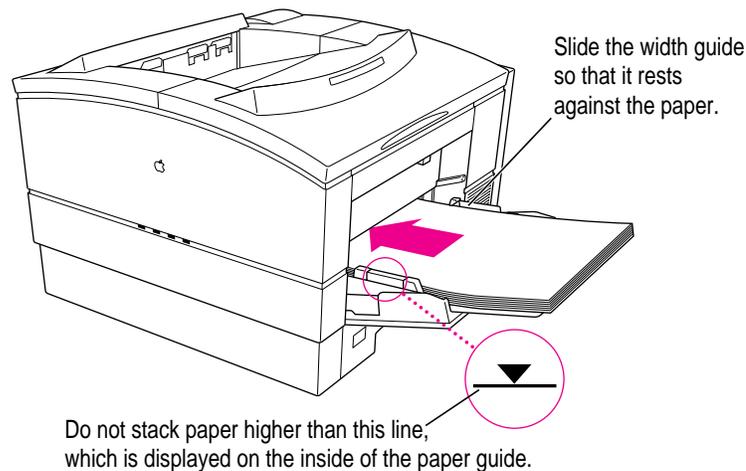
To use the multipurpose tray you must first open it. Gently push in on the small indentation at the top of the tray and then lower the tray slowly. Use the extension to adjust the tray so that your paper does not extend over the edge.



Placing paper and envelopes in the multipurpose tray

You can use the multipurpose tray for all your printing jobs. You can keep a small stack of paper in the tray and let the LaserWriter 16/600 PS feed the paper automatically, or you can use the multipurpose tray for manual feed printing.

By the way: If you use the Auto Select printing feature to automatically draw paper from any source that holds the correct size paper, use the Apple Printer Utility or LaserWriter Utility for Windows to define the size of paper that the multipurpose tray holds. The printer software can then determine correctly when to draw paper from the multipurpose tray. For more information about defining the size of paper in the multipurpose tray, refer to Chapter 2 if you have a Macintosh, or to Chapter 3 if you have an IBM PC or compatible.



Place the paper in the tray so that the left side of the stack is aligned with the tray's left side, then adjust the width guide so that it just touches the right edge of the stack. Don't adjust the guide so tightly against the stack that it causes binding or rumpling of the paper.

For manual-feed printing, place a single sheet of paper, labels, or transparency film or a single envelope in the multipurpose tray.

The multipurpose tray holds up to 100 sheets of paper. When there is no paper left in the tray, the Paper Out light comes on.

By the way: You can have the LaserWriter 16/600 PS print using a first sheet from the multipurpose tray and all following sheets from the paper cassette (or vice versa.)

For example, you can place letterhead paper in the multipurpose tray and use it for printing the first page of a letter, and print all following pages on plain paper from the paper cassette.

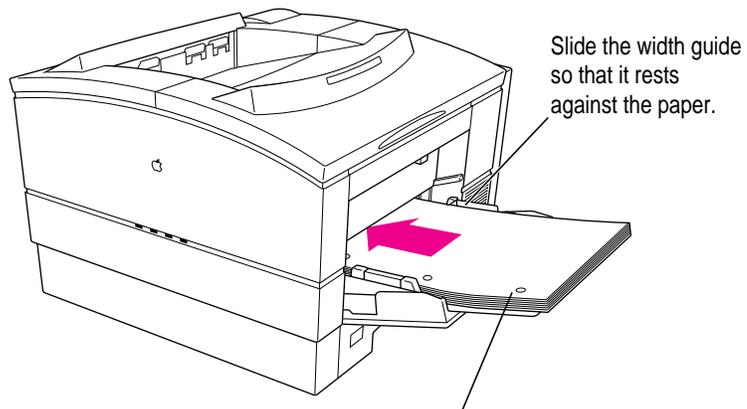
For more information about selecting paper trays for printing, see “Printing” in Chapter 6 if you use a Macintosh, or see “Setting LaserWriter 16/600 PS Printing Options” in Chapter 7 if you use an IBM PC or compatible computer.



Loading three-hole punched paper in the multipurpose tray

You can load a stack of three-hole punched paper in the multipurpose tray for automatic printing. You can also print on three-hole punched paper manually by feeding one sheet at a time.

This illustration shows how to load a stack of three-hole punched paper in the multipurpose tray.

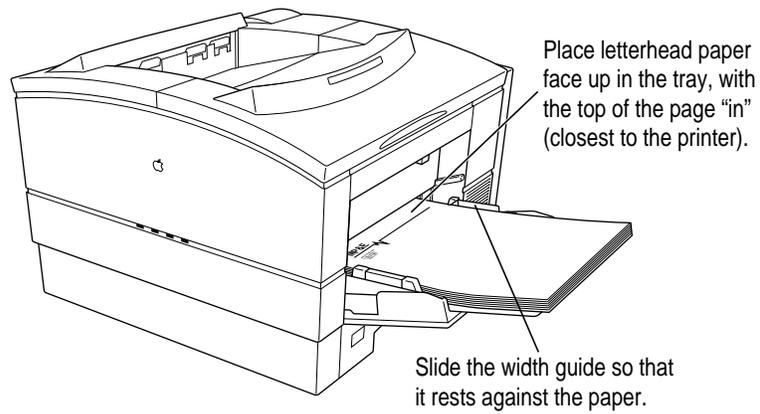


Place three-hole punched paper so that the holes line up along the left edge of the tray (the edge nearest the status lights).

Loading letterhead paper in the multipurpose tray

You can load a stack of letterhead in the multipurpose tray for automatic printing. You can also print letterhead manually by feeding one sheet at a time.

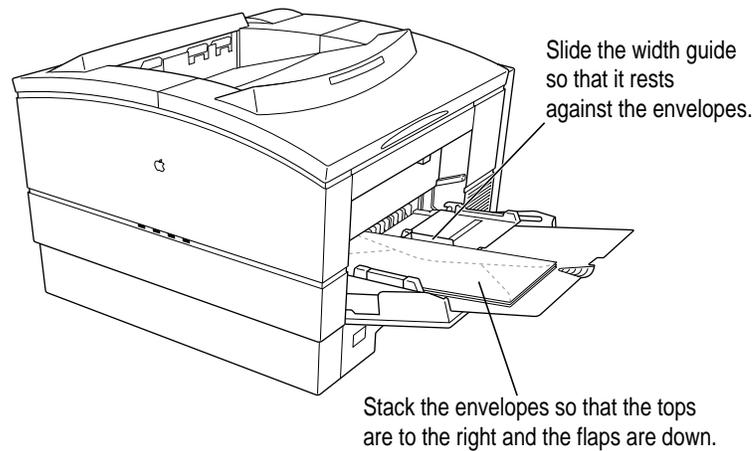
This illustration shows how to load a stack of letterhead in the multipurpose tray.



Loading envelopes in the multipurpose tray

You can load a stack of envelopes in the multipurpose tray for automatic printing. You can also print envelopes manually by feeding them one envelope at a time.

This illustration shows how to load a stack of envelopes in the multipurpose tray.



Adjust the width guide on the multipurpose tray to the size of the envelope.

If you print many envelopes: You can obtain an envelope feeder from an Apple-authorized dealer that allows you to feed up to 75 envelopes automatically.

WARNING Don't use envelopes that have fasteners, snaps, or windows when printing with the LaserWriter 16/600 PS printer. Also don't use envelopes that seal with peel-off strips or pressure-sensitive adhesives, that are curled or wrinkled, or that are likely to discolor or melt at temperatures of about 400° F (204° C). Printing on such materials can damage the printer.

For best results when printing envelopes, be sure to position your address block properly in your word-processing document. You'll need to print in landscape (horizontal) orientation and to adjust the top and left margins in your word-processing program's page formatting controls.

Once you've set the top and left margins, type the return address, skip a few lines (the exact number depends on the font you're using and the way you like your envelopes to look, so you'll have to experiment), and type the address block.

Printing an envelope

- 1** Open the multipurpose tray.
- 2** Adjust the width guide to fit the envelope.
- 3** Tuck the envelope flap inside the envelope.

This helps prevent the flap from causing a paper jam. (Some envelopes come unglued when subjected to the heat inside the printer. High-quality envelopes are likely to hold up better during the printing process.)

- 4** Set your program to print lengthwise on the envelope.

On a Macintosh, choose Page Setup from the File menu, select the lengthwise orientation icon, and click OK.

On an IBM PC or compatible, open the Printer Setup dialog box and select Landscape in the Orientation option.

- 5** Set your program to print using the multipurpose tray.

On a Macintosh, choose Print from the File menu, select Manual Feed from the Paper Source pop-up menu, and click Print.

On an IBM PC or compatible, open the Printer Setup dialog box, select the multipurpose tray from the Paper Source options, and click OK to close the Setup dialog box. Select the Print command from the File menu and click OK.

- 6** When the printer's Paper Out indicator light flashes, insert the first envelope and slide it forward until it stops.

Insert the envelope face up (flap down) with the top edge to the right as it enters the printer.

On a Macintosh, if Background Printing is turned on in the Chooser, a PrintMonitor message prompts you to insert an envelope.

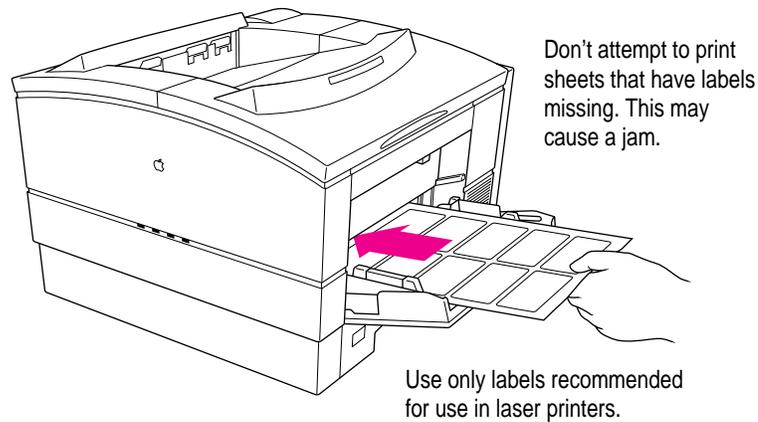
- 7** If you are printing several envelopes, insert the next envelope when the Paper Out light flashes again.

Do not feed the next envelope before the light prompts you to, or the envelope may jam.

Loading labels in the multipurpose tray

You can load one sheet of labels at a time into the multipurpose tray for manual printing.

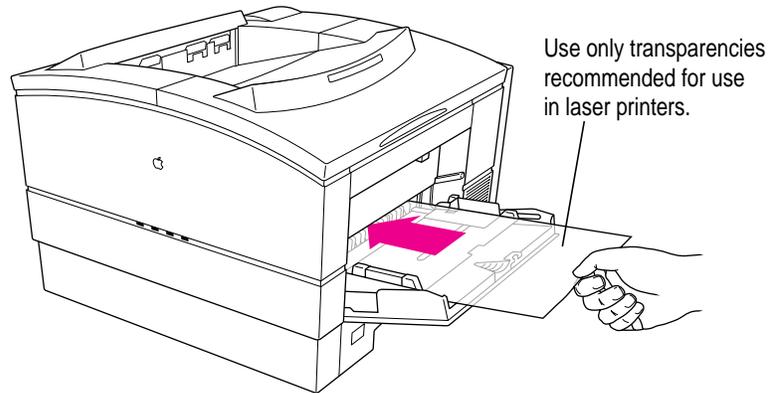
IMPORTANT When you print labels, use the multipurpose tray. (This helps avoid paper jams and curling.)



Loading transparencies in the multipurpose tray

You can load one sheet of overhead transparency at a time into the multipurpose tray for manual printing.

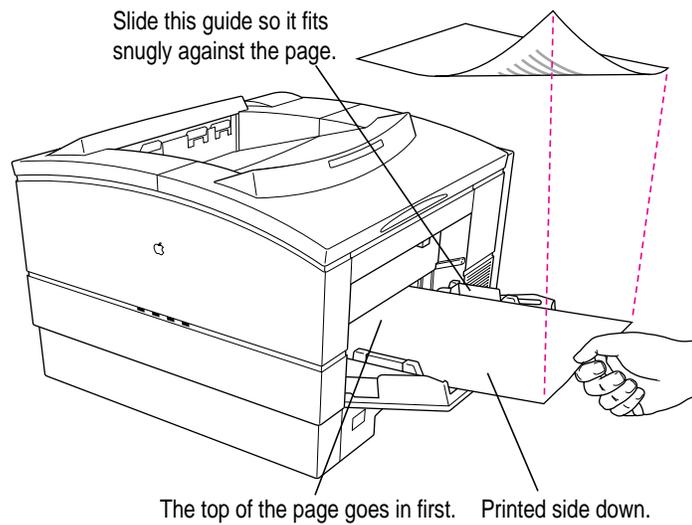
IMPORTANT When you print overhead transparencies, use the multipurpose tray. (This helps avoid paper jams and curling.)



Two-sided (duplex) printing

Follow these steps when you want to print on both sides of the paper.

- 1** Open the multipurpose tray to minimize paper curling.
- 2** Print a page from the multipurpose tray and take it out of the output tray.
- 3** Insert the paper again, printed side down, with the top of the printed side entering the printer first.



- 4** Repeat steps 2 and 3 until the entire document is printed.

Choosing paper

The LaserWriter 16/600 PS produces the best results on standard laser-quality paper (16- to 24-pound stock). The printer can accept stock of up to 32 pounds from the multipurpose tray. You can also expect excellent results on most colored and textured papers.

The LaserWriter 16/600 PS produces high-quality transparencies for overhead projection. Medium-weight photocopier transparencies work best. If you experience difficulties when attempting to print transparencies with automatic feed, use manual feed instead.

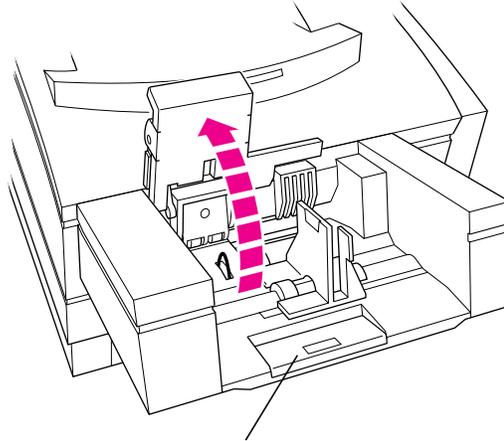
WARNING Do not use heat-transfer (thermal) transparencies in the LaserWriter 16/600 PS. They will not print properly and may separate in the printer.

To avoid paper problems, keep the following potential trouble sources in mind:

- **Temperature** Some letterheads are printed with low-temperature dyes that vaporize and smear at the temperatures inside the printer. Some glossy, coated letterheads may lose their coating in the printer. Similarly, some envelopes may seal or come unglued during printing. Using high-quality stationery and envelopes should ensure satisfactory results.
- **Paper texture** The LaserWriter 16/600 PS may not print well on rough or highly textured paper. Try a few sheets to test the quality.
- **Paper finish** The LaserWriter 16/600 PS may not print well on some papers with a glossy finish. Again, test a few sheets of any unusual paper stock you wish to use.

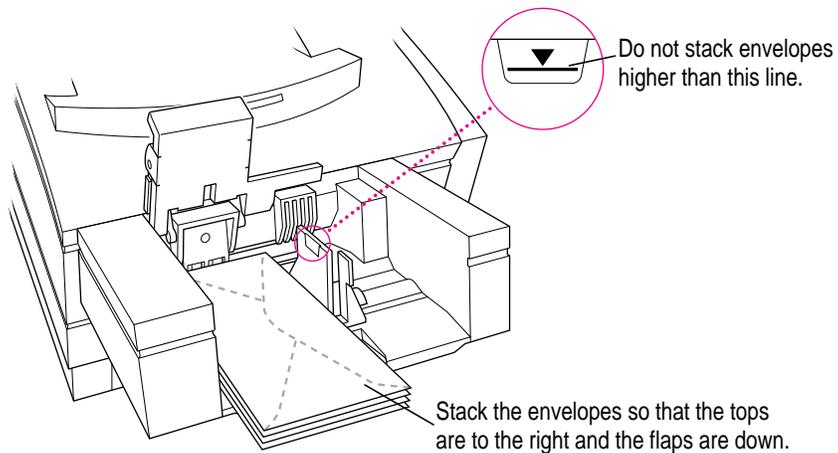
Filling the optional envelope feeder

- 1 Raise the envelope weight.



You can pull out this extension to support long envelopes.

- 2 Stack the envelopes so that their bottoms are against the left side of the tray and their tops are on the right, flaps down.

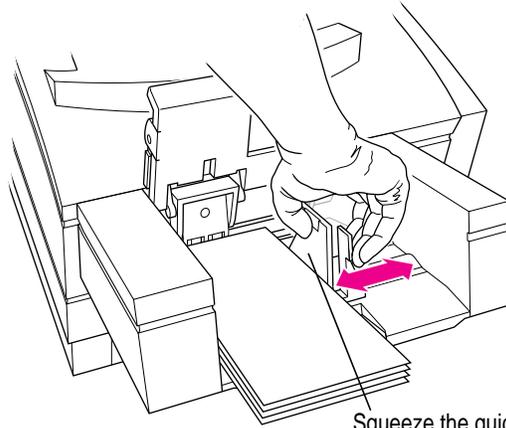


Do not stack envelopes higher than this line.

Stack the envelopes so that the tops are to the right and the flaps are down.

Make sure the envelopes are neatly stacked and aligned, and that they fit snugly against the side and back of the feeder. The feeder can hold up to 75 standard business envelopes. To prevent envelope jams, don't fill the tray above the maximum line marked on the feeder.

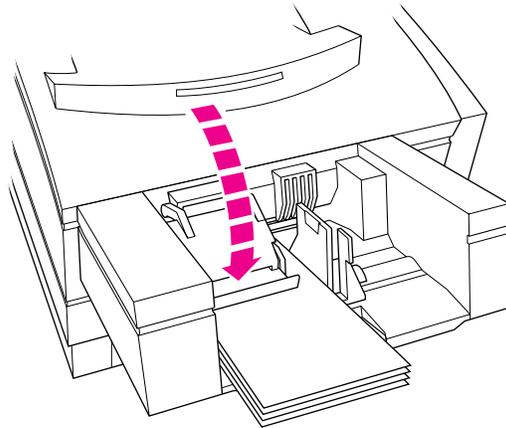
- 3 Set the width guide to match your envelopes' width.



Squeeze the guide to adjust it.

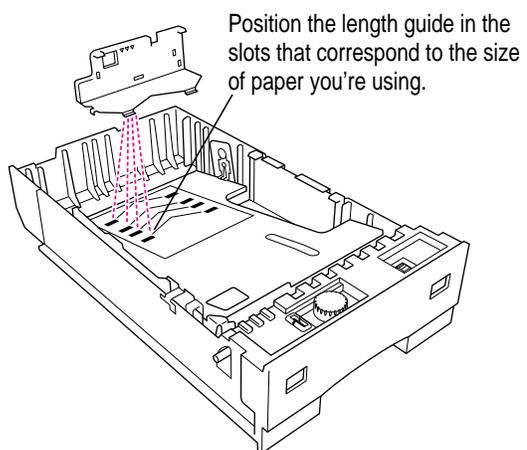
Adjust the width guide so that it fits snugly against the envelopes, but not so tightly that it might cause binding.

- 4 Lower the envelope weight.



Filling the optional 500-sheet cassette with paper

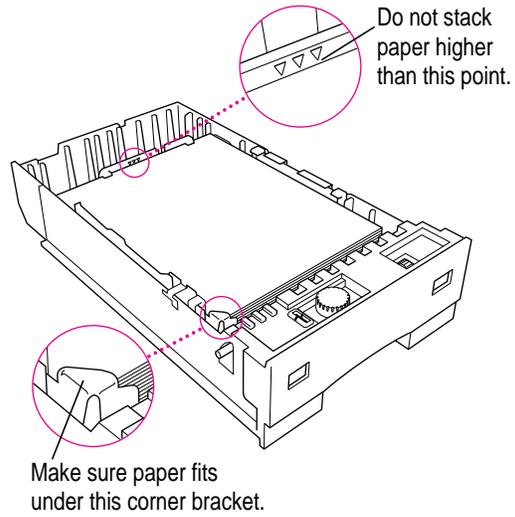
- 1** Slide the paper cassette out of the 500-sheet feeder.
- 2** Set the length guide to the position that corresponds to your paper's length. Set the width guide to its maximum width setting.



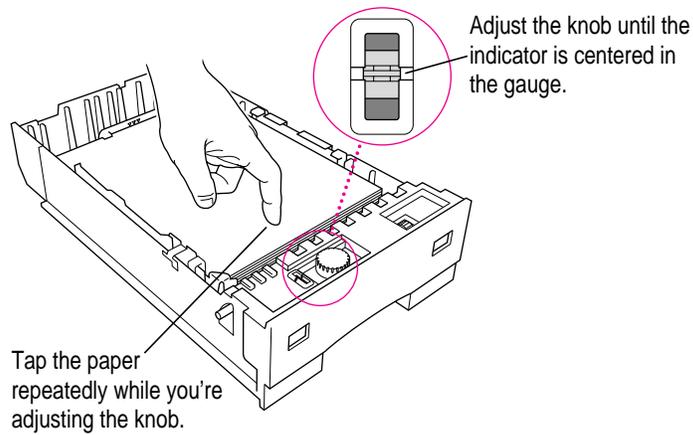
The cassette is marked with positions for paper of U.S. letter, A4, B5, and U.S. legal sizes.

3 Insert your paper within the guides.

Don't load paper higher than the maximum point indicated on the tray.



4 With the paper cassette fully loaded with paper, adjust the paper-weight knob until the indicator is centered in the gauge.

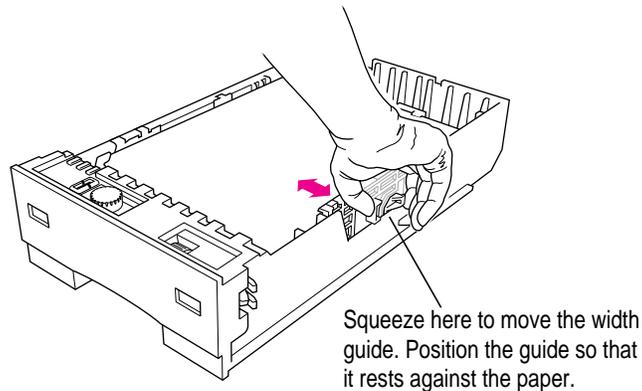


Setting the paper weight allows the cassette to feed paper into the printer with the precise pressure required for your paper. Adjust the paper-weight knob only when the cassette is fully loaded.

Once the paper weight is set, you don't need to reset it as long as you continue to use paper of the same size and weight. Also, you don't need to completely fill the cassette with paper each time.

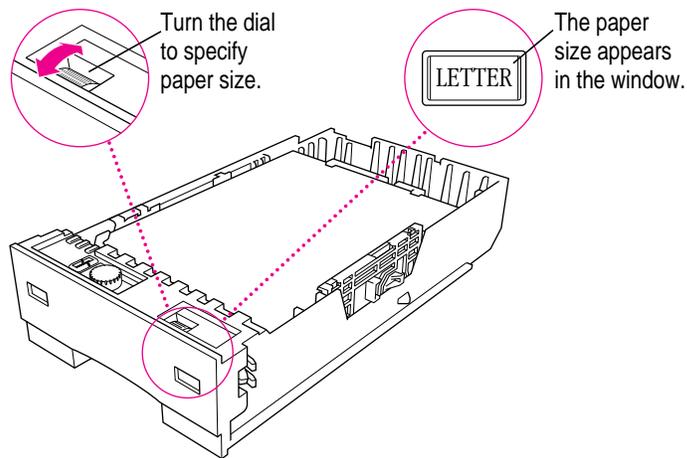
When loading paper of a different size or weight, fill the cassette fully and then adjust the paper-weight knob.

5 Set the width guide to match your paper's width.



Adjust the width guide so that it fits snugly against the paper, but not so tightly that it might cause binding. To avoid paper jams, always set the length and width guides to the correct positions for your particular paper.

- 6 Turn the paper-size dial until your paper size appears on the front panel of the paper cassette.

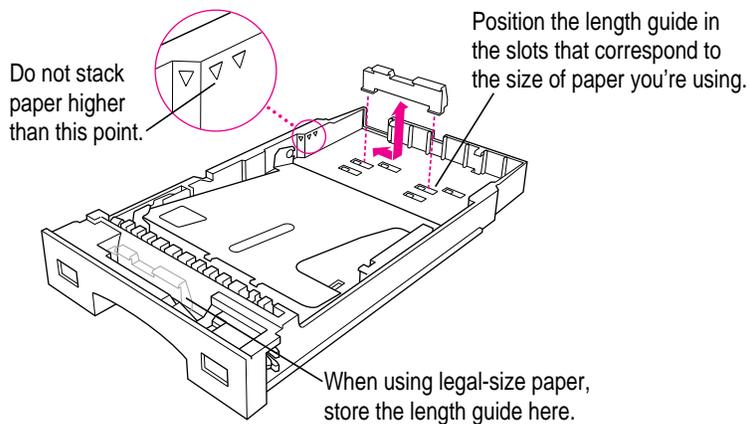


Setting this dial indicates to the printer the size of the paper in the cassette.

- 7 Insert the paper cassette into the 500-sheet feeder.

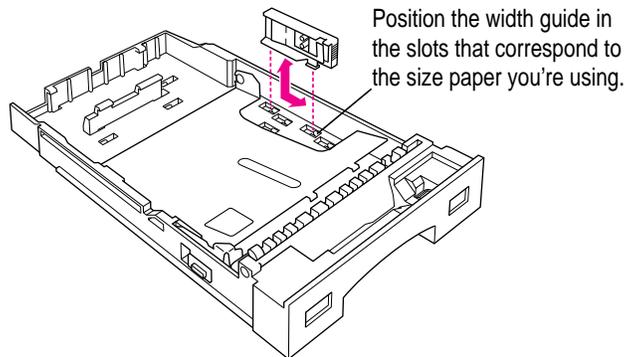
Filling the optional 250-sheet universal cassette

- 1 Slide the cassette out of the printer.
- 2 Set the length guide to the position that corresponds to your paper's length.



To move the guide to a different position, gently push the guide to the right and lift it from the slots. Then insert the guide into the appropriate slots and push left to lock it in place. The cassette is marked with positions for paper of U.S. letter, A4, B5, and U.S. legal sizes.

3 Set the width guide to match your paper's width.



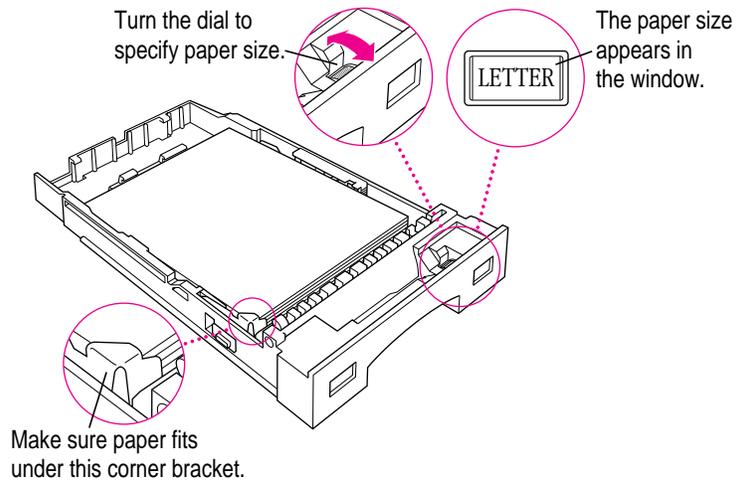
To move the guide to a different position, gently push the guide back and lift it from the slots. Then insert the guide into the appropriate slots and pull forward to lock it in place.

To avoid paper jams, always set the length and width guides to the correct positions for your particular paper.

4 Insert your paper within the guides.

Don't load paper higher than the maximum point indicated on the tray.

- 5 Turn the paper-size dial until your paper size appears on the front panel of the paper cassette.**



Setting this dial indicates to the printer the size of the paper in the cassette.

- 6 Insert the paper cassette into the printer.**

10

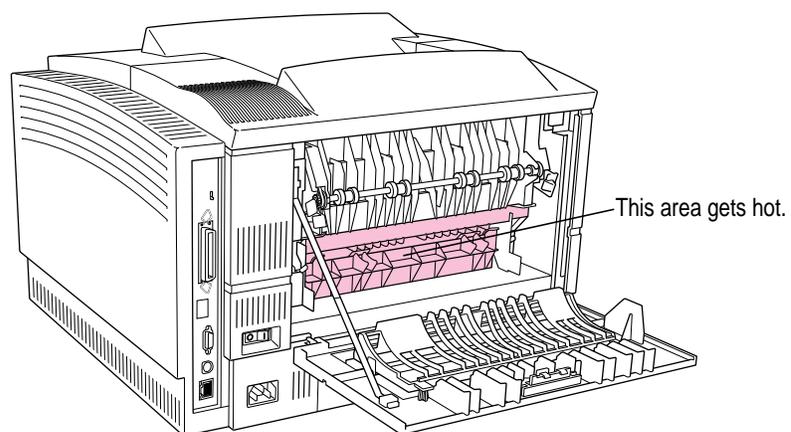
Maintenance



The LaserWriter 16/600 PS is designed for trouble-free service. Maintenance involves little more than putting in a new toner cartridge every 6,000 pages or so and performing a few minor cleaning tasks. The recommended service interval is 200,000 pages to check and service wear on the rollers and fuser. This service can be arranged through an Apple-authorized dealer.

Safety first

The fixing roller assembly in the LaserWriter 16/600 PS operates at very high temperatures—around 400° F (204° C). Allow the rollers to cool several minutes before performing maintenance and troubleshooting.



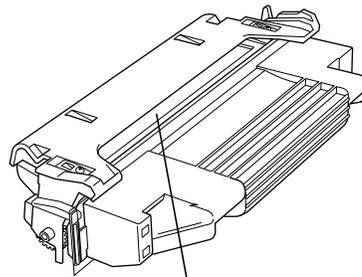
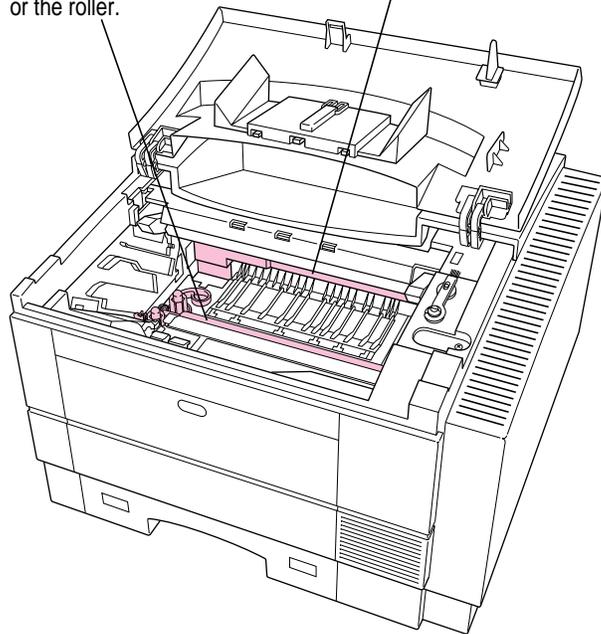
Precautions during maintenance

To prevent damage to the printer while performing maintenance, observe the following precautions.

- Don't lubricate the printer.
- Don't attempt to disassemble the printer.
- Don't place anything on top of the printer.

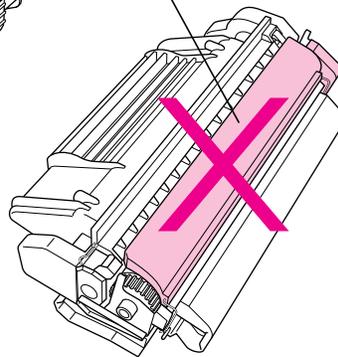
Don't touch any of the electrical contacts or the roller.

Don't touch this area. It gets very hot.



Protect the drum from exposure to light.

Don't touch the drum, which is covered by the drum protection shutter.



Regular maintenance

The toner cartridge holds the toner powder that forms the printed images. Each cartridge should yield about 6,000 pages. If you print many graphic images, you may need to change cartridges more often. If your pages start to look too light, or if you see thin vertical white lines in dark images, it may be time to change the cartridge.

Low toner

When the Low Toner light glows orange, it can mean one of two things:

- The toner powder needs to be redistributed inside the toner cartridge.
- The cartridge needs to be replaced.

If the light comes on in the middle of a printing job, and the output is still satisfactory, continue printing if you wish. You won't harm the printer by doing so.

When the light comes on, take the cartridge out, rock it gently back and forth a few times (as in the cartridge installation procedure) to redistribute the toner, and reinsert it. If the light goes out, you can continue to use the same cartridge. It's probably a good idea to order or purchase a replacement cartridge.

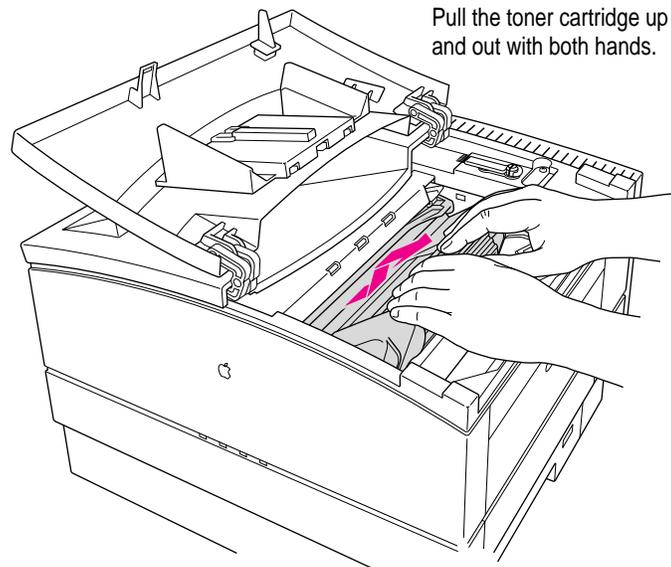
If the light stays on, change the cartridge and perform the maintenance procedures described in the following sections.

WARNING Use only an Apple LaserWriter 16/600 PS Toner Cartridge with the LaserWriter 16/600 PS. Other cartridges may not fit and may produce lower-quality results.

Replacing the toner cartridge

Whenever you install a new toner cartridge, you should also clean the interior of the printer. Follow these steps to replace the cartridge and clean the interior of the printer.

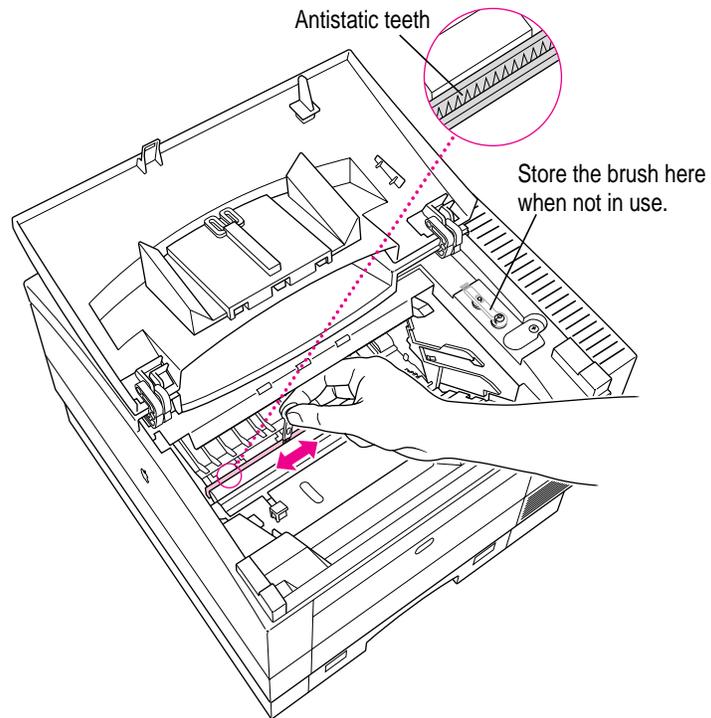
- 1** Open the printer cover and remove the used cartridge.



Note: Don't throw away the used cartridge. See the instructions that come with your new cartridge for information on how to return the used cartridge to the manufacturer. By returning used cartridges, you help reduce waste and preserve the environment.

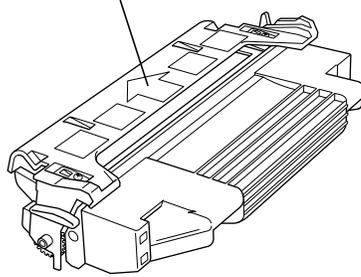
2 Clean the antistatic teeth with the cleaning brush.

The small, green-handled brush snaps into a holder inside the printer. Use the cleaning brush to remove dust from the antistatic teeth. Replace the brush in the printer when you're finished.



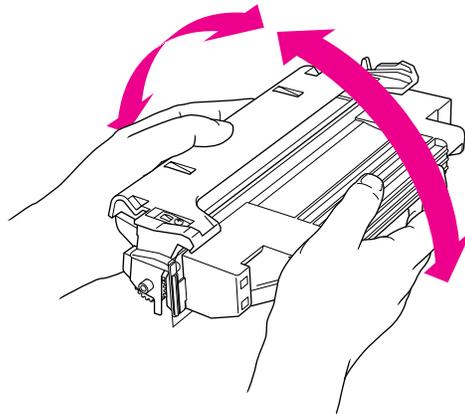
3 Take the new cartridge out of its packaging.

The arrow on top of the toner cartridge shows the proper direction to insert the cartridge into the printer.

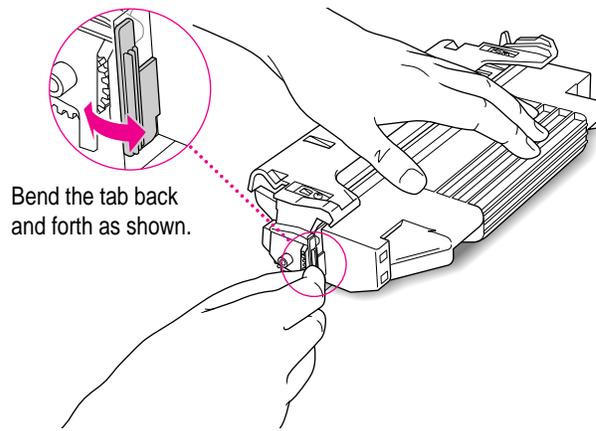


4 Distribute the toner powder.

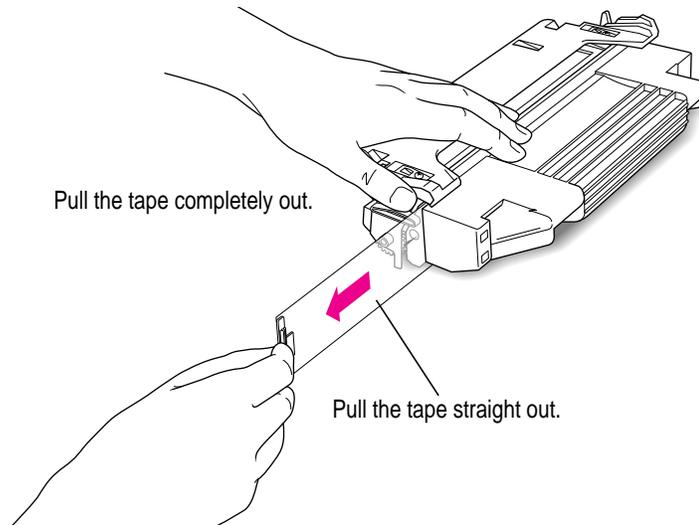
Gently rock the toner cartridge as shown.



- 5** Bend the flat tab on the side of the cartridge back and forth until it separates from the cartridge.

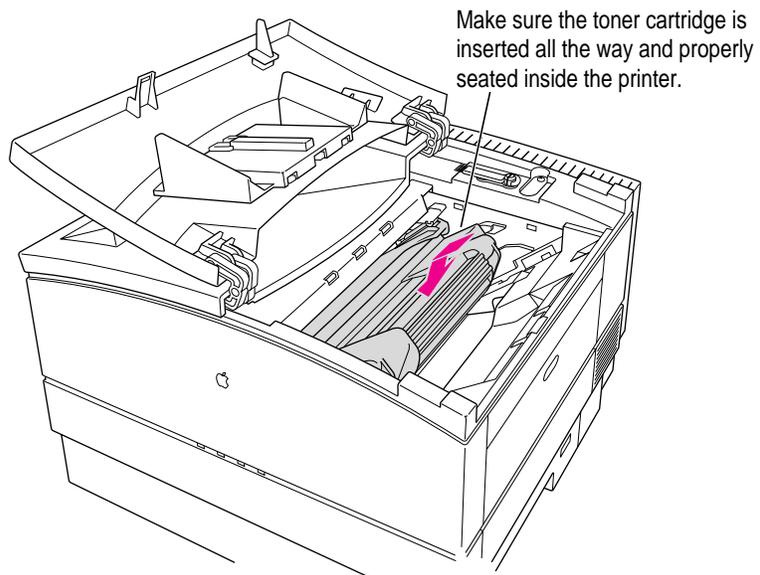
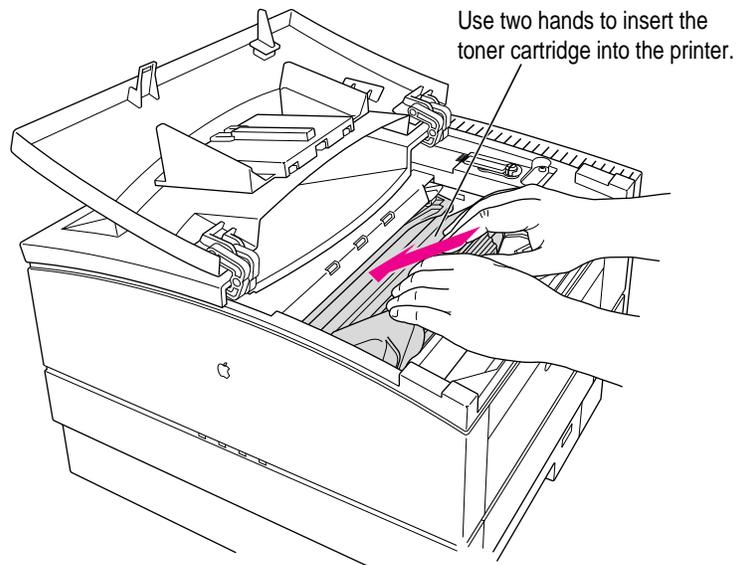


- 6** Firmly pull the tab directly away from the cartridge to remove the sealing tape.

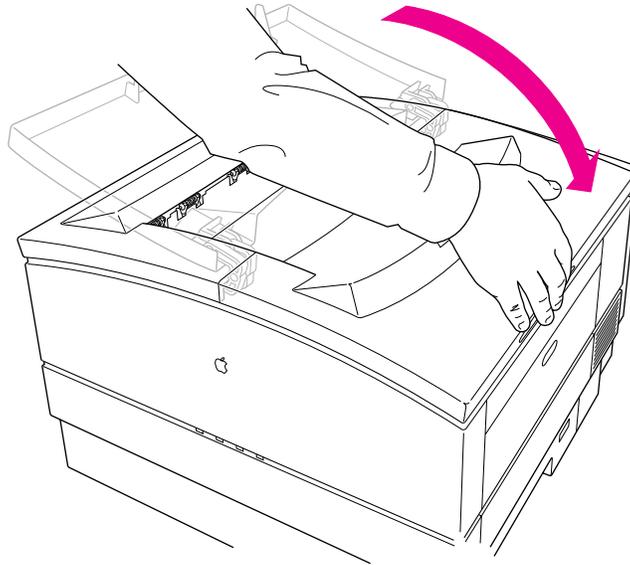


WARNING Be sure to pull the tab straight out of the cartridge. Don't pull too quickly or at an angle that might damage the toner seals within the cartridge.

7 Insert the cartridge.



- 8 Close the printer and resume printing.



Cleaning the exterior

Unplug the power cord and then wipe the exterior of the printer with a clean, soft, damp cloth. Use a mild soap or detergent if necessary, but *never* use an ammonia-based cleaner. Be careful not to get any liquid in the power cord port.

WARNING Never use ammonia-based cleaners on or around the LaserWriter 16/600 PS. They may react chemically with the toner and with the printer's plastic case.

Troubleshooting

Chapter 11 Fixing Paper and Image Problems

Chapter 12 Fixing Other Problems

Part III offers to solutions to problems you might encounter while using the LaserWriter 16/600 PS.



part
III

11

Fixing Paper and Image Problems



This chapter provides solutions to problems you may encounter with paper jams or print quality while using your LaserWriter 16/600 PS. The first section discusses how to read the printer's indicator lights to help you identify and solve problems, and how to clear paper jams. The rest of the chapter covers specific problems that can occur when you are printing a document.

Checking the indicator lights

The lights on the front panel of the LaserWriter 16/600 PS indicate the printer's operating status. This table explains what the lights mean.

Light	On	Off	Flashing
Ready/In Use 	Printer is ready to use.	Printer cannot print because of an error, or the cover is open.	Printer is warming up, printing a startup page, or processing data for the next print job.
Low Toner 	Toner is low or needs to be redistributed.	Toner level is OK.	
Paper Out 	Paper cassette is empty.	Paper supply is OK.	Printer is ready for sheet of manual-feed paper.
Paper Jam 	There is a paper jam.	Paper is OK.	

If the Paper Out and Paper Jam lights flash alternately, or if they both stay on, the printer requires service. If you have just installed a hard disk or additional memory (RAM) in the printer, there may be a problem with the installation.

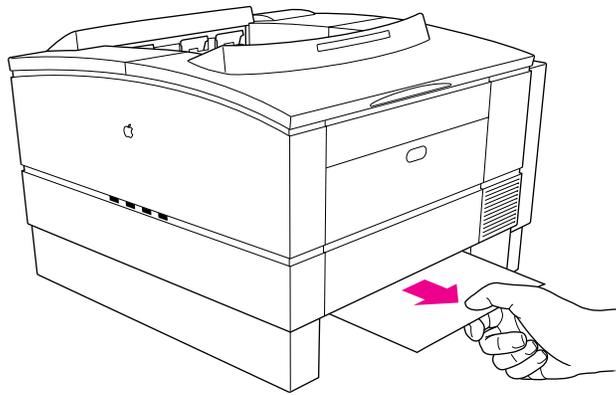
- If you have connected an external hard disk, make sure it's turned on.
- Check the technical specifications of the hard disk to make sure it supplies at least 5 volts of termination power.
- If you have just installed additional RAM, open the printer and make sure the SIMMs are fully seated in the correct sockets that match one of the supported configurations listed in Appendix C.

Checking for and clearing paper jams

Occasionally a piece of paper may get stuck inside the printer during the printing process. Follow these steps to find and clear a paper jam.

IMPORTANT If you experience paper jams after you first set up the printer, check all areas of the printer to make sure that the cardboard and orange plastic packing materials have been removed.

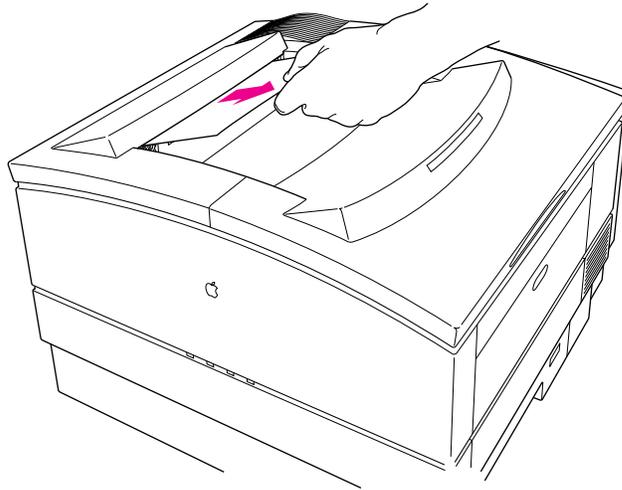
- 1** Remove the paper cassette to see whether the jam is in the paper cassette area. If so, gently release or pull out the jammed paper.



If you cannot *easily* remove the paper, skip to step 4.

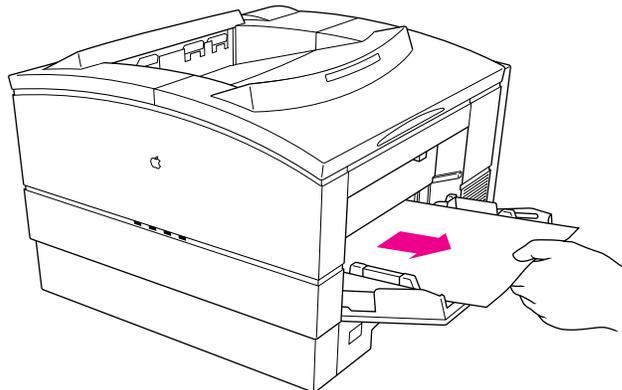
- 2** Check the paper exit area on top of the printer to see whether the paper is jammed there. If so, gently pull the paper out.

If you cannot *easily* remove the paper, skip to step 5.

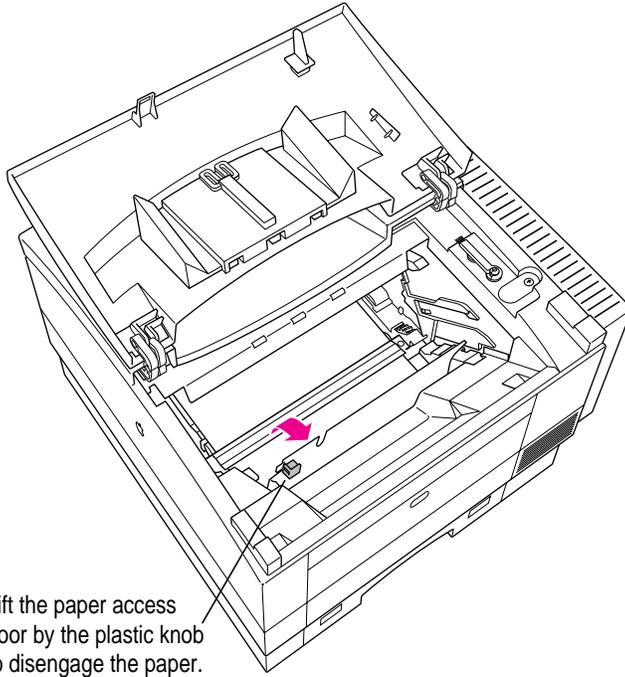


- 3** Check the multipurpose tray (if you are using it) to see whether paper has jammed there. If so, gently pull the paper out.

If you cannot *easily* remove the paper, skip to step 4.



- 4 Open the top cover of the printer and remove the toner cartridge. If the jam is around the print feed area, remove the paper as shown here:

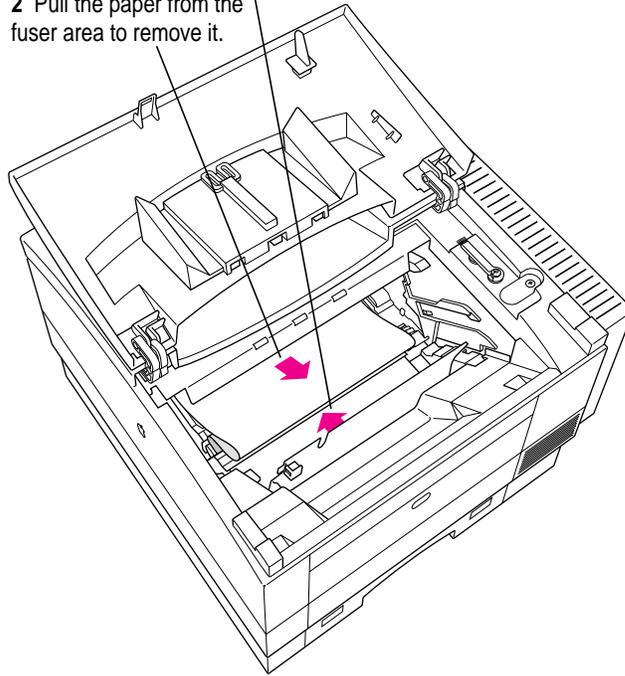


Lift the paper access door by the plastic knob to disengage the paper.

If you cannot remove the paper, pull the paper from within the printer, first pulling into the printer, then out toward you to free it.

1 Pull the paper from under the paper access door.

2 Pull the paper from the fuser area to remove it.



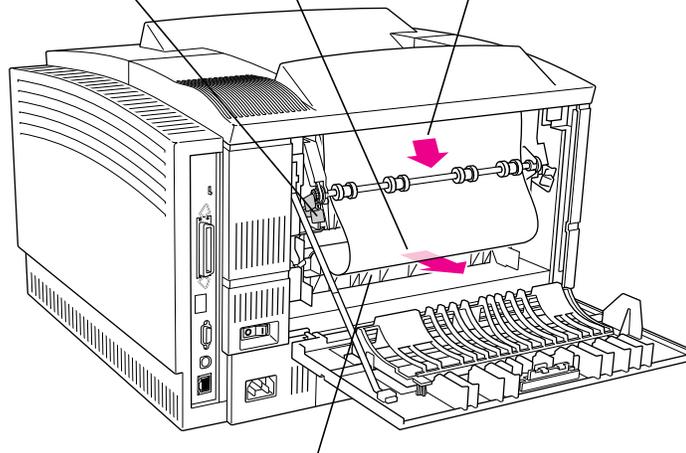
Be sure the paper jam door (on the left side of the printer) is closed when you remove paper from the printer access area. If the paper jam door is open, the paper may tear when being removed.

- 5** If the jam is in the fixing rollers, open the paper jam door (on the left side of the printer). If the paper is jammed in the fuser roller assembly, press the green latch to disengage the fuser rollers, raise the green levers to free the paper, if necessary, and then carefully pull the paper out.

1 Press the green latch.

2 Pull the trailing edge of the paper from the fuser assembly.

3 Remove the paper by pulling it out in this direction.



Don't touch this area. It gets very hot.

WARNING If the printer has been in use, the roller cover may be hot, and the fixing rollers will be very hot.

- 6** Once you have removed the jammed paper, lower the green levers, close the paper jam door, reinsert the toner cartridge, close the top cover, and slide the paper cassette back into the printer.

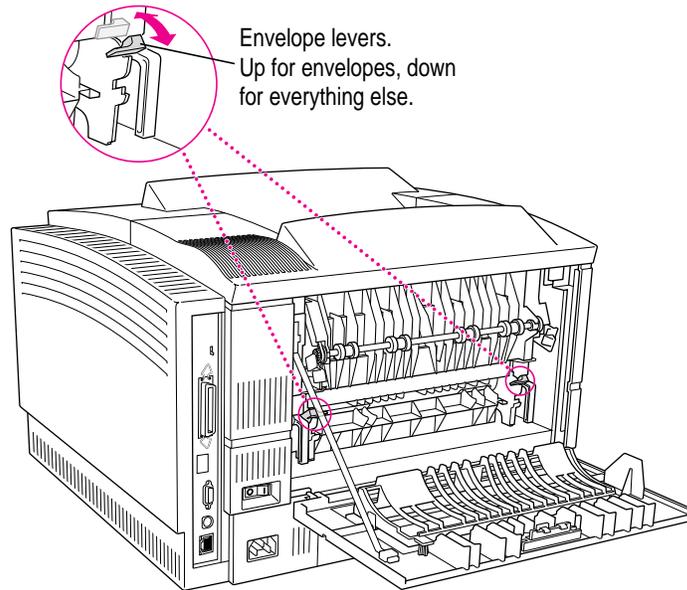
Avoiding paper and envelope jams and wrinkling

Depending on the quality of paper and envelopes that you use, some papers or envelopes may jam or wrinkle as they pass through the printer.

If you experience paper jams, loosen up the stack of paper by fanning it before you load it into the paper cassette. Be sure not to overload the cassette. With stiffer paper stock, try printing the paper from the multipurpose tray, which provides a straighter feed into the printer than from the cassettes.

If envelopes wrinkle or jam as they pass through the printer, you can open the paper jam door and raise the two small green envelope levers. Raising the levers provides more clearance for the thicker envelopes as they pass through the printer, making them less apt to wrinkle. Wrinkling often depends on the thickness and paper quality of the envelope, and some envelope stocks may be too light to pass through the printer undamaged.

IMPORTANT If you raise the envelope levers to print envelopes, remember to lower them again before you resume printing on standard paper.



Problems with printed documents

This section provides remedies for problems in the appearance of a printed document.

The quality of grayscale art could be better.

Turn on the PhotoGrade feature, as described in Chapter 6 for Macintosh users and Chapter 7 for Windows users. Also, try turning off the FinePrint feature.

Paper curls when you print on it.

Use only 16- to 24-pound laser-quality or photocopy bond paper for automatic feed and 16- to 32-pound paper for manual-feed printing. If you are using the correct weight and the paper still curls, try using a different brand of paper.

Toner does not stay fixed on the paper.

If the toner does not stick to the paper, open the paper jam door and make sure the two small green envelope levers are in the down position.

Also, make sure that the orange plastic parts have been removed from behind the paper jam door. See “Unpacking the Printer” in Chapter 1 for instructions about removing the plastic parts. If the toner still does not stick to the paper, try using different paper. Best results are obtained with laser-quality or photocopy bond paper.

The printer prints on only part of the paper, printing is off-center, or images are out of place.

Make sure that you have selected the appropriate paper source, paper size, and orientation in your printing software. (On the Macintosh, click the Page Image icon in the Page Setup dialog box; if you want to narrow the margins to print on more of the page, you can select Larger Print Area in the Options portion of the Page Setup dialog box.)

Also check that the margins set in your document are correct, that you are not using a type of paper that is causing a feeding problem, and that the paper cassette isn't too full.

Nothing is printed on the paper.

If you get a blank document, try the following step.

- Check the Low Toner light. If it's on, the toner needs to be redistributed, or the cartridge needs replacing.

The image prints in black and white although the original document is in color or grayscale.

If the printed image contains only black and white areas instead of grays, try the following step.

- Check to make sure that grayscale printing is turned on (on a Macintosh, select the Color/Grayscale option in the Print Options dialog box).

The image is too light.

If the printed images are too light, try the following steps.

- Check the Low Toner light. If it's on, you may need to replace the toner cartridge or redistribute the toner within the cartridge (see "Replacing the Toner Cartridge" in Chapter 10).
- If the Low Toner light is not on, change the print density to a darker level.

If you are using a Macintosh computer, you can change print density with the Apple Printer Utility. For more information, see "Setting the Print Density" in Chapter 2. If you are using an IBM PC or compatible computer, you can change print density with the LaserWriter Utility for Windows. For more information, see "Setting the Print Density" in Chapter 3.

The image is too dark.

If the image is too dark, try the following steps.

- Change the print density to a lighter level. (If you are using a Macintosh, see "Setting the Print Density" in Chapter 2 for details. If you are using an IBM PC or compatible computer, see "Setting the Print Density" in Chapter 3.)
- Replace the toner cartridge; it may be defective.

The page prints solid black.

If your document prints black, your toner cartridge is defective and must be replaced (see “Replacing the Toner Cartridge” in Chapter 10), or your printer may need servicing.

Unwanted lines or stripes appear.

If white or dark vertical or horizontal lines or stripes appear on the page, try the following remedies. (Each procedure is described in detail in “Replacing the Toner Cartridge” in Chapter 10.)

- Gently rock the cartridge to redistribute the toner.
- Replace the toner cartridge.

The image is wavy or distorted.

If a gray shaded area appears wavy or distorted, the toner cartridge may be low, or the toner may need to be redistributed (see “Replacing the Toner Cartridge” in Chapter 10).

Toner smudges appear on front or back of paper.

If stains appear on the paper, try the following steps.

- Toner smudges may occur after a paper jam. In most cases, the printer cleans itself after printing several letter-size pages.
- You may have previously printed using paper that was too small for the printed document, which may have caused some toner to be deposited inside the printer instead of on the paper. This can cause smudges on the paper that goes through later. In most cases, the printer cleans itself after printing several letter-size pages.

Faded areas or white voids appear on the page.

If portions of the page are faded or are missing, try the following steps:

- Use different paper or transparency material.
- Use paper that has been in a sealed wrapper; paper that has been out for a long time may have too much moisture in it.
- Redistribute the toner in the cartridge (see “Replacing the Toner Cartridge” in Chapter 10).
- Use the Apple Printer Utility or LaserWriter Utility for Windows to change the print density to a darker level. (If you use a Macintosh computer, see “Setting the Print Density” in Chapter 2. If you use an IBM PC or compatible computer, see “Setting the Print Density” in Chapter 3.)
- Replace the toner cartridge (see “Replacing the Toner Cartridge” in Chapter 10).

Blotchy areas or ghost images appear on the page.

If there are blotchy areas within a gray area, or if you see ghosting of images within printed areas (particularly on the top few inches of the page), try the following step.

- Print two or three more copies of your page; these problems often occur only on the first rotation of the photosensitive drum inside the printer.

The printer isn't printing from the correct paper tray.

- Check that the correct page size is selected in the Macintosh or Windows Page Setup dialog box.

12

Fixing Other Problems



This chapter provides solutions to problems you may have printing with the LaserWriter 16/600 PS from Macintosh, Windows, DOS, and UNIX computers.

Troubleshooting with the indicator lights

To diagnose and fix problems by checking the indicator lights on the front of the printer, see Chapter 11.

Macintosh troubleshooting

If you are using the LaserWriter 16/600 PS from a Macintosh computer, use this section for troubleshooting tips.

The Chooser does not appear in the Apple () menu.

If the Chooser isn't listed in the Apple menu, the System file on your startup disk may be outdated, or you may have removed the Chooser from the Apple Menu Items folder in the System Folder on your startup disk. You can obtain the current system software from an Apple-authorized dealer.

Make sure that you have only one System Folder on your startup disk.

No LaserWriter 8 icon appears in the Chooser.

Make sure that the LaserWriter 8 driver is properly installed. The printer driver may be on your startup disk but may have been moved to the wrong location. If necessary, drag the driver into the Extensions folder inside the System Folder.

Also make sure that you have only one System Folder on your startup disk. Refer to the information that came with your Macintosh.

The printer is not listed in the Chooser.

If you've selected the LaserWriter 8 icon but your LaserWriter 16/600 PS is not named in the list of printers, one of the following may be the cause.

- The printer has been turned off. Make sure it is plugged in and turned on, and wait for the startup page to print.
- The communications settings are not set correctly. See “Adjusting Communication Settings” in Chapter 1 and “Viewing or Changing Communication Settings” in Chapter 2.
- Someone may have renamed the printer.
- If you are using an AppleTalk network that contains zones, you haven't selected the correct zone for the printer. Also, if the printer configuration switch is in the down (■) position, the printer resets the zone each time the printer is turned off or restarted. Look for the printer in the default zone. See “Setting the Printer's Network Zones” in Chapter 2.
- There's a problem in the network cable system somewhere between your computer and the printer you want to use. Make sure that all the cables are properly connected. If you still can't resolve the problem, the printer's electronics or the network connector boxes may not be functioning properly. Call an Apple-authorized dealer.
- The printer has the same name as other printers on the network. If that's the case, the printer automatically appends a number to the end of its name when it's turned on. The number may change each time you turn on the printer. The printer administrator can change the name using the Apple Printer Utility, as described in Chapter 2, or the LaserWriter Utility for Windows, as described in Chapter 3.
- Check the Network control panel to make sure the correct network is selected.

An “out of memory” message appears on your screen when you try to print.

The printer may have insufficient memory to print if

- the document contains too many fonts that need to be downloaded from your computer to the printer
- the document contains complex images
- you use a lot of fonts in your document but have not selected Unlimited Downloadable Fonts in the Page Setup Options dialog box

If a page contains very complex images, try to remove some of the complex detail from that page (or spread the information over two pages) and try again to print it. Also, find PrintMonitor in the System Folder and use the Get Info command to increase its memory size.

If you encounter the “out of memory” message frequently, you can remedy this by increasing the amount of memory in the printer or installing a hard disk. See Chapter 5.

Options don’t appear in the Print dialog box.

Make sure the hardware options are properly installed in the printer, as described in Chapter 5.

Open the Chooser and click the LaserWriter 8 icon. Click the Setup button, then click Auto Setup in the dialog box that appears.

The printer prints a grid pattern.

Check the position of the communications configuration switch as described in “Adjusting Communication Settings” in Chapter 1. If you have a Macintosh connected directly to the printer with a Peripheral System/8 cable, the communication configuration switch must be in the down (■) position.

The printer forgets the AppleTalk zone or job-handling configuration settings after being turned off or restarted.

The printer configuration switch must be in the up (☐) position for the printer to remember these settings. See “Setting Up Job Handling” and “Setting the Printer’s Network Zones” in Chapter 2.

Nothing is printed; no paper comes out of the printer.

If you don't get any response from the printer when you try to print a document, try the following steps:

- If you are using background printing, check PrintMonitor for error messages. Choose PrintMonitor from the Application menu at the right of the menu bar.
- Try printing again, but select the Print Detailed Report option. (Choose the Print command, click the Options button, then choose the Print Detailed Report from the PostScript Errors pop-up menu.)
- Check the Chooser to be sure the printer is selected. Be sure to select the printer's name, as well as the LaserWriter 8 icon and, if necessary, the AppleTalk network zone.
- Check the Paper Out light. If it is on, add paper and replace the paper cassette. If it is blinking, make sure the paper cassette is securely in place.
- Check for a paper jam as described in Chapter 11.
- Check the network cables.
- Turn the printer off and back on. Check the startup page.
- Reinstall the printer software on your computer's startup disk.

A message on the screen says the printer can't print.

If you get such a message, try these steps:

- Make sure that the printer is turned on.
- Check the network cables.
- Make sure your startup disk has the LaserWriter 8 driver in the Extensions folder, which is inside the System Folder.
- Make sure the printer is selected in the Chooser. Be sure to select the printer's name as well as the LaserWriter 8 icon and, if your network has zones, the correct AppleTalk network zone.
- Make sure that the printer has paper correctly installed.

The Apple Printer Utility works only with the LaserWriter 16/600 PS.

For all other printers, use the LaserWriter Utility program for the Macintosh that came with the printers. The LaserWriter Utility program also comes on the LaserWriter 16/600 PS disks, though it's not automatically installed. To install it, choose Custom Install from the pop-up menu in the Installer program, as described in Chapter 2.

Sometimes printing the first page takes longer than I expect.

The LaserWriter 16/600 PS automatically goes into an energy-saving mode after it's been idle for a while. When you print while it's in this mode, the printer takes about a minute to warm up before it can print the first page.

The printer administrator can adjust this feature by using the Apple Printer Utility on a Macintosh computer (see Chapter 2) or the LaserWriter Utility for Windows on a Windows computer (see Chapter 3).

IBM PC or compatible troubleshooting

If you are using the LaserWriter 16/600 PS from an IBM PC or compatible computer, use this section for troubleshooting tips.

A message on the screen says the printer can't print.

If you get such a message, try the following steps.

- Make sure that the printer is turned on.
- Check the network or parallel cables.
- Make sure that the Adobe Printer Driver has been installed as described in Chapter 7.

Nothing is printed; no paper comes out of the printer.

If you don't get any response from the printer when you try to print a document, try the following steps:

- Check the List of Printers box to see that your printer is selected. See Chapter 7 for details about installing and selecting the printer driver.
- Try printing the document again, but choose Download PostScript Error Handling in the Printer Setup PostScript Options dialog box.
- Check the Paper Out light. If it is on, add paper and replace the paper cassette. If it is blinking, make sure the paper cassette is securely in place.
- Check for a paper jam as described in Chapter 11.
- Check the printer cables.
- Check the position of the port configuration switch as described in “Adjusting Communication Settings” in Chapter 1.
- Turn the printer off and back on. Check the startup page.
- Reinstall the printer driver. See Chapter 7 for details about installing the printer driver.

The screen goes dark after I run LWPMAN or LWFORM.

Don't run LWPMAN or LWFORM from Windows. Run it only from DOS.

Sometimes printing the first page takes longer than I expect.

The LaserWriter 16/600 PS automatically goes into an energy-saving mode after it's been idle for a while. When you print while it's in this mode, the printer takes about a minute to warm up before it can print the first page.

The printer administrator can adjust this feature by using the Apple Printer Utility on a Macintosh computer (see Chapter 2) or the LaserWriter Utility for Windows on a Windows computer (see Chapter 3).

Novell NetWare troubleshooting

The printer is properly connected and configured, but printing is garbled or displays unwanted characters.

If your printer is connected to the server through a parallel port connection, display the PostScript Options dialog box and make sure that Protocol Options is set to None. This dialog box is available through the Setup command in your application's File menu. See "PostScript Options Settings" in Chapter 7 for more information on protocol options.

My text documents print fine, but I have problems with spreadsheets and graphics.

Try removing the banner page, auto-end capping, tabs expansion, and form feeds. Use the DOS CAPTURE command to set the following printing options:

```
/nb /na /nff /nt /ti=30
```

LWPMAN errors

The following errors may appear while you are working with the LWPMAN utility used by printer administrators. LWPMAN is described in Chapter 3.

ATTACH_ERROR

An error occurred connecting to the printer's NetWare interface. The printer may be powered off, the network cable may be disconnected, or another LWPMAN user may be connected to the printer from another PC on the network.

Check if the printer is on and connected to the network. Also verify that no other copies of LWPMAN are communicating with the printer. Quit LWPMAN, then restart and try again.

BINDERY_ERROR

An error occurred reading the bindery. Another user may have locked the bindery. Quit LWPMAN, then restart and try again.

ERROR_DELETE_DEFAULT_SERVER

You cannot delete the default file server from the list.

ERROR_GET_SERVER_INFO

An error occurred getting the attached file server information from the printer's NetWare interface. Quit LWPMAN, then restart and try again.

ERROR_INVALID_NAME

The specified print server name is invalid. Verify that the name matches the print server name defined within PCONSOLE.

ERROR_MAX_SERVERS

The maximum number of file servers are already connected. The LaserWriter 16/600 PS can service only eight file servers.

ERROR_NO_PSERVER

There are no advertising print servers running on the network. An active print server must be available to configure the printer for RPRINTER mode. Load a print server NLM, VAP, or executable and run LWPMAN again.

ERROR_OPEN_FILE

An error occurred opening the fileserv file on the file server. Make sure that no other user on the network has the file open.

ERROR_OPEN_LIB

An error occurred opening the library file. One of the files LWPMAN uses is either corrupted or not in the DOS path. Make sure that all the LWPMAN files are in the DOS path, then run LWPMAN again.

ERROR_OPEN_MENU

An error occurred opening the menu file. The file is either corrupted or not in the DOS path. Make sure that the file is in the DOS path. If the file is in the path, delete the file LWPMAN.CWA, then reinstall LWPMAN and run the utility again.

ERROR_PSERVER_NOT_FOUND

The print server was not found on the current file server. Verify that the name matches the print server name defined within PCONSOLE.

ERROR_READ_FILE

An error occurred reading from the fileserv file on the file server.

ERROR_READ_FORM

An error occurred reading the form. The form file is either corrupted or not in the DOS path. Make sure that the file is in the DOS path. If the file is in the path, delete the file LWPMAN.CWA, then reinstall LWPMAN and run the utility again.

ERROR_SERVER_OUT_OF_MEMORY

The file server is out of memory. Free as much memory as possible on the server, then run LWPMAN again.

ERROR_WRITE_FILE

An error occurred writing to the fileserv file on the file server. Make sure that no other user on the network has the file open.

GET_ENVIRONMENT_ERROR

An error occurred reading environment information from the printer's NetWare interface. The printer may be turned off or the network cable disconnected. Check if the printer is on and communicating with the network, then run LWPMAN again.

GET_GEN_INFO_ERROR

An error occurred reading general configuration information from the printer's NetWare interface. The printer may be turned off or the network cable disconnected. Check if the printer is on and communicating with the network, then run LWPMAN again.

GET_NOVELL_INFO_ERROR

An error occurred reading NetWare information from the printer's NetWare interface. The printer may be turned off or the network cable disconnected. Check if the printer is on and communicating with the network, then run LWPMAN again.

GET_STAT_ERROR

An error occurred reading statistics from the printer's NetWare interface. The printer may be turned off or the network cable disconnected. Check if the printer is on and communicating with the network, then run LWPMAN again.

INIT_ERROR

An error occurred initializing the help system. The help file is either corrupted or not in the DOS path. Make sure that the file is in the DOS path. If the file is in the path, delete the file PMAN.HLP, then reinstall LWPMAN and run the utility again.

INVALID_ACCESS_ERROR

You must be system supervisor or have equivalent privileges to run LWPMAN. You are not logged into a file server, or you do not have supervisor privileges. Log into a file server as a user with supervisor privileges and run LWPMAN again.

LIBRARY_ERROR

An error occurred closing the library file. If, after running LWPMAN again, you get the ERROR_OPEN_LIB message, the library file is corrupted. Delete file LWPMAN.CWA and restore it from *Windows Printer Disk 2*.

NO_PNIC

There are currently no active LaserWriter 16/600 PS printers. Check to see that the printers are on and connected to the network, then run LWPMAN again.

OUT_OF_MEMORY

There is not enough system memory available to run LWPMAN. Free as much memory as possible and run LWPMAN again.

RESET_DEFAULT_ERROR

An error occurred resetting the printer's NetWare interface. The printer may be turned off or the network cable may be disconnected. Check if the printer is on and connected to the network, then run LWPMAN again.

SET_ENVIRONMENT_ERROR

An error occurred setting the environment information for the printer's NetWare interface. The printer may be turned off or the network cable may be disconnected. Check if the printer is on and connected to the network, then run LWPMAN again.

SET_NOV_ERROR

An error occurred setting the new configuration for the printer's NetWare interface. The printer may be turned off or the network cable disconnected. Check if the printer is on and connected to the network, then run LWPMAN again.

UNIX troubleshooting

If you are using the LaserWriter 16/600 PS from a UNIX workstation, use this section for troubleshooting tips.

When I print a text file, the lines stairstep off the page.

You need to use a print queue that adds a carriage return at the end of each line. To set up the print queue, the printer administrator follows the instructions in “Getting UNIX Users Started Using the Printer” in Chapter 4. To learn the names of your local print queues, see your printer administrator, or look in your `/etc/printcap` file.

The document generates PostScript errors.

Make sure the language interpreter in the printer’s TCP/IP interface is set correctly. Sending a text-only document or a PCL5 document when the language interpreter is set to PostScript will generate PostScript errors.

The document generates a PostScript listing.

Make sure the language interpreter in the printer’s TCP/IP interface is set correctly. Sending a PostScript document when the language interpreter is set to PCL5 will generate a PostScript listing.

Banner page generates PostScript errors.

If the administrator sets the TCP/IP interface to interpret everything as PostScript, he or she must not turn on the banner pages in the `printcap` entry.

Banner pages come out as a PostScript listing.

If the administrator sets the TCP/IP interface to interpret everything as PCL5, he or she must not turn on the banner pages using the TCP/IP Printer Configuration Utility.

The banner page prints OK but the job that follows comes out as a PostScript listing.

Turn off the banner page in the `/etc/printcap` file.

The banner page prints only the system name and the remote printer name.

The `lpd` printing protocol does not provide the user name or filename in a way that can be included in the banner page.

The printer administrator forgot the password for the TCP/IP Printer Configuration Utility.

See the service information that came with your printer to learn how to get in touch with Apple.

Sometimes printing the first page takes longer than I expect.

The LaserWriter 16/600 PS automatically goes into an energy-saving mode after it's been idle for a while. When you print while it's in this mode, the printer takes about a minute to warm up before it can print the first page.

The printer administrator can adjust this feature by using the Apple Printer Utility on a Macintosh computer (see Chapter 2) or the LaserWriter Utility for Windows on a Windows computer (see Chapter 3).

The RARP server is not responding.

If you chose to use a RARP server to assign the printer's IP address while setting up the printer, but the server is not responding, follow these steps in order:

- Make sure that the server running RARP is on the same subnet as the printer.
- Check the `/etc/ethers` file to verify that it contains the correct Ethernet address and hostname.
- Check the `/etc/hosts` file to verify that it contains a valid IP address and the same hostname as in the `/etc/ethers` file.
- Verify that the `rarpd` daemon is running on the server. On many UNIX systems, you can accomplish this by typing `ps -e` or `ps -ax` at the UNIX prompt on the server. If the daemon isn't running, type `rarpd -a`.
- Turn the printer off and then back on.

The BOOTP server is not responding.

If you chose to use a BOOTP server to assign the printer's IP address while setting up the printer, but the server is not responding, follow these steps in order:

- Make sure that the server running BOOTP is on the same subnet as the printer.
- Check the `/etc/bootptab` file to verify
 - that the `lp` entry is a valid IP address and that it matches the address in the `/etc/hosts` file
 - the `ha` entry is the correct Ethernet address (found on the printer's startup page) with no colons separating the bytes
 - the `ht` entry is either `ether` or `ethernet`
- Turn the printer on and off and immediately verify that the `bootpd` is running. On many UNIX systems, you can accomplish this by typing `ps -e` or `ps -ax` at the UNIX prompt on the server. If the daemon is not running, type `bootpd -t15` or consult the UNIX man page on `bootpd`.
- Turn the printer off and then back on.

I can't ping the printer by IP name or IP address.

Follow these steps in order:

- Turn the printer off and then back on. This sometimes fixes the problem itself, and it also causes the startup page to print. Use the startup page to verify the printer's IP address.
- Verify that the IP address on the configuration page is identical to the IP address in the `/etc/hosts` file.

I can ping the printer but I can't telnet to it.

Only one user at a time can telnet to the printer.

Appendixes

Appendix A Administrator Tools Quick Reference

Appendix B Setting Up the Printer as an ATPS
Remote Printer

Appendix C Technical Information



IV
part



Appendix A Administrator Tools Quick Reference



The LaserWriter 16/600 PS comes with many different utilities that a printer administrator might use to set up and manage the printer. These utilities are explained throughout the manual. This appendix lists the functions of each of these utilities, grouped first by utility and then by function.

What each utility does

The following sections list all the administrator utilities that come with LaserWriter 16/600 PS and their functions.

Apple Printer Utility for Macintosh computers

The Apple Printer Utility for Macintosh computers is described in Chapter 2. It works only with the LaserWriter 16/600 PS. When you use the utility to set a parameter, the parameter is stored on the printer itself and affects all printed documents, whether they originate on Macintosh, Windows, or UNIX computers.

You can use the utility to perform the following functions:

- download PostScript files
- print font samples
- download fonts to the hard disk and to the printer's memory (RAM)
- print the configuration page

- restart the printer
- name the printer
- show the product version numbers
- show how many pages the printer has printed
- initialize internal and external SCSI disks so they can store fonts
- turn the startup page on or off
- set the print density
- turn FinePrint on or off (The default can be overridden by the user.)
- turn PhotoGrade on or off (The default can be overridden by the user.)
- set the halftone screen frequency
- set the delay before the printer enters energy-saving mode
- turn automatic tray switching on or off
- set the default sheet size for the multipurpose tray
- set the EtherTalk zone
- set EtherTalk communication settings
- set the IP address for the printer if it's on a TCP/IP network

LaserWriter Utility for Macintosh computers

The LaserWriter Utility for Macintosh computers is described in Chapter 2. It works with all networked LaserWriter printers *except* the LaserWriter 16/600 PS. For installation instructions, see Chapter 2. For instructions on how to use the utility, see the information that came with the printer.

Utilities for Windows, DOS, and NetWare

These three utilities run on IBM PC or compatible computers:

- LaserWriter Utility for Windows
- LWPMAN, a DOS program
- LWFORM, a DOS program

In addition, you can use standard Novell network administration programs, such as PCONSOLE.

LaserWriter Utility for Windows

For the most part, LaserWriter Utility for Windows has the same functions as the Apple Printer Utility for Macintosh computers. However, it doesn't have any of the hard disk or font preparation functions, because these features are part of the Windows printer driver interface. When you use the LaserWriter Utility for Windows to set a parameter, the parameter is stored on the printer itself and affects all printed documents, whether they originate on Macintosh, Windows, or UNIX computers. The LaserWriter Utility for Windows is described in Chapter 3.

You can use the utility to perform the following functions:

- download PostScript files
- print the configuration page
- restart the printer
- name the printer
- show the product version numbers
- show how many pages the printer has printed
- turn the startup page on or off
- set the print density
- turn the FinePrint default on or off (The users can override the default.)
- turn the PhotoGrade default on or off (The users can override the default.)
- set the halftone screen frequency and angle
- set the delay before the printer enters energy-saving mode
- turn automatic tray switching on or off
- set the default sheet size for the multipurpose tray
- set the AppleTalk zone
- set LocalTalk and EtherTalk communication settings
- set the IP address for the printer if it's on a TCP/IP network
- configure the parallel port
- specify the font symbol set

- print PostScript or PCL font samples
- print a font catalog

LWPMAN

This DOS utility, which is described in Chapter 3, controls the following NetWare functions:

- view the configuration and status of the printer's NetWare interface
- configure the printer's NetWare interface for PSERVER or RPRINTER mode
- reset the printer's NetWare interface
- restore the default configuration of the printer's NetWare interface
- print the configuration page
- set the password for PSERVER mode
- set queue scan times for PSERVER mode
- set the descriptive print server name used by the printer in PSERVER mode

LWFORM

This DOS utility, which is described in Chapter 3, controls forms and notification functions:

- turn notification on or off to notify NetWare users of print server errors
- turn forms on or off to tell the printer to reject any NetWare job that doesn't have a specified form number
- specify the acceptable NetWare form number

TCP/IP Printer Configuration Utility for UNIX

To configure the printer in a UNIX environment, run the printer's TCP/IP Printer Configuration Utility by using the `telnet` program. The Configuration Utility, which is described in Chapter 4, can perform these functions:

- identify and permanently assign the printer's IP address (As explained in Chapter 4, you must use some other method to assign the initial IP address.)
- set the the subnet mask of the IP address
- specify the IP address of the default network utility
- show information about the TCP/IP interface
- print the configuration page
- turn TCP/IP timeout checking on or off
- change the password for this utility
- specify whether banner pages are printed for each TCP/IP print job
- reset the printer's TCP/IP interface
- restore the default parameters for the TCP/IP interface

Which functions are in which utilities

The remaining sections of this appendix list various administrative functions and where you can find them.

Here's a list of the utilities, each with its abbreviation in bold and a reference to the chapter where it is explained:

- **APU**, Apple Printer Utility for Macintosh computers, Chapter 2
- **LWU-W**, LaserWriter Utility for Windows, Chapter 3
- **LWPMAN**, Chapter 3
- **LWFORM**, Chapter 3
- **TCP/IP**, TCP/IP Printer Configuration Utility, Chapter 4

Printing or viewing information about the printer or the networks

- **APU, LWU-W, LWPMAN, and TCP/IP**: print the configuration page
- **APU and LWU-W**: show the product version numbers
- **APU and LWU-W**: show how many pages the printer has printed
- **APU and LWU-W**: turn the startup page on or off
- **TCP/IP**: show information about the TCP/IP interface
- **TCP/IP**: specify whether banner pages are printed for each TCP/IP print job

Adjusting print quality

- **APU and LWU-W**: set the print density
- **APU and LWU-W**: turn the FinePrint default on or off
- **APU and LWU-W**: turn the PhotoGrade default on or off
- **APU and LWU-W**: set the halftone screen frequency and angle

Managing fonts

- **APU and LWU-W:** display and print font samples
- **APU:** download fonts to the hard disk
- **APU:** initialize internal and external SCSI disks so they can store Macintosh fonts
- **LWU-W:** specify the font symbol set

Users can also use the Adobe Printer Driver for Windows computers to download fonts to the hard disk.

Administering LocalTalk/EtherTalk networks for Macintosh users

- **APU and LWU-W:** name the printer
- **APU:** set the EtherTalk zone
- **APU and LWU-W:** set EtherTalk communication settings

Administering NetWare networks for DOS and Windows users

- **APU and LWU-W:** turn on or off the Ethernet port's ability to interpret NetWare messages
- **LWPMAN:** view NetWare print server configuration and status
- **LWPMAN:** configure the printer's NetWare interface for PSERVER or RPRINTER mode
- **LWPMAN:** reset the printer's NetWare interface
- **LWPMAN:** restore the printer's NetWare interface default configuration
- **LWPMAN:** set the password for PSERVER mode
- **LWPMAN:** set queue scan times for PSERVER mode
- **LWPMAN:** set the descriptive print server name used by the printer in PSERVER mode
- **LWFORM:** turn Notify on or off to notify NetWare users of print server errors
- **LWFORM:** turn Forms on or off to tell the printer to reject any NetWare job that doesn't have a specified form number
- **LWFORM:** specify the acceptable NetWare form number

Administering TCP/IP networks for UNIX users

- **APU and LWU-W:** turn on or off the Ethernet port's ability to interpret TCP/IP messages
- **APU, LWU-W, and TCP/IP:** set the IP address for the printer if it's on a TCP/IP network (You can use the `telnet` utility any time except the very first time, as explained in Chapter 4.)
- **TCP/IP:** specify the subnet mask of the IP address
- **TCP/IP:** specify the IP address of the default network utility
- **TCP/IP:** show printer or TCP/IP network information
- **TCP/IP:** turn TCP/IP timeout checking on or off
- **TCP/IP:** change the password for the TCP/IP utility
- **TCP/IP:** specify whether banner pages are printed for each TCP/IP print job
- **TCP/IP:** reset the TCP/IP print server
- **TCP/IP:** restore default TCP/IP parameters

Troubleshooting

- **APU and LWU-W:** restart the printer
- **LWPMAN:** reset the printer's NetWare interface
- **TCP/IP:** reset the printer's TCP/IP interface

Managing page-description languages

- **APU and LWU-W:** download PostScript files
- **APU and LWU-W:** set the page-description interpreters to accept PostScript or PCL, or to switch between them automatically

Configuring the communication ports

- **APU and LWU-W:** turn on or off the Ethernet port's ability to interpret NetWare messages
- **APU and LWU-W:** turn on or off the Ethernet port's ability to interpret TCP/IP messages
- **APU and LWU-W:** set EtherTalk communication settings
- **APU and LWU-W:** configuring the parallel port

Configuring options

- **APU and LWU-W:** set the delay before the printer enters energy-saving mode
- **APU and LWU-W:** turn automatic tray switching on or off
- **APU and LWU-W:** set the default sheet size for the multipurpose tray

Macintosh users can also configure some options in the Chooser by clicking the Setup button.



Appendix B Setting Up the Printer as an ATPS Remote Printer



Setting up your LaserWriter 16/600 PS printer as a remote ATPS (AppleTalk Print Spooler) printer on a NetWare network requires minimal configuration; most of the network printing capability is built into every Macintosh computer. With the proper software and physical connections, a Macintosh on a NetWare network can print to a NetWare-managed printing queue that can be selected from the Macintosh Chooser.

IMPORTANT ATPS is a part of Novell's *NetWare for Macintosh* NetWare Loadable Module (NLM) which must be loaded and configured on your NetWare server. The configurations described in this appendix can be performed only after the Macintosh NLM has been installed.

Configuring ATPS for the first time on a NetWare 3.x server

If you are setting up the printer for access by Macintosh computers on a NetWare 3.x network and this is the first time you are configuring ATPS, follow these instructions.

You can configure ATPS from the server console, or by running RCONSOLE (remote console) from a client computer.

1 At the console prompt, type

```
load install
```

The Install utility starts and a list of Installation Options appears.

2 Select Product Options from the list and press Enter.

A list of product options appears. If the Macintosh NLM is installed and operating properly, a NW-MAC option will be available.

3 Select the NW-MAC option and press Enter.

A list of configuration files appears.

4 From the list, select the file SYS:\SYSTEM\ATPS.CFG and press Enter.

A prompt appears, asking if you want to create a new file.

5 Type y and press Enter.

An empty window appears, providing an area in which to enter configuration information.

- 6** Enter a line of configuration information for each LaserWriter 16/600 PS printer. (Enclose the printer name and zone in quotation marks.)

Example

```
"Sales Printer:Ethernet Zone"
```

This example identifies the printer "Sales Printer" located in the zone "Ethernet Zone."

You can include a `-h` option at the end of the line to instruct ATPS to make the printer unavailable for direct Macintosh printing; that is, the printer will be accessible only through ATPS queues.

Example

```
"Sales Printer:Ethernet Zone" -h
```

Note: Other ATPS options are available for configuring the printer. See Novell's *NetWare for Macintosh* documentation for more information on these options.

- 7** Press Esc to quit editing.

A prompt appears, asking if you want to save your changes.

- 8** Type `y` and press Enter.

The list of configuration files reappears.

- 9** Select the `SYS:\SYSTEM\AUTOEXEC.NCF` file and press Enter.

A window appears, displaying the file's contents.

- 10** Insert the following line after the `load afp` statement:

```
load atps
```

This command instructs the NetWare server to automatically load the ATPS service at startup time.

- 11** Press Esc to exit the editor, then type `y` and press Enter to confirm the changes.

- 12** Press Esc three times to exit the Install utility.

- 13** At the system console prompt, type `load atps` and press Enter.

The service is loaded and immediately becomes available to network users. A message appears confirming the load, and the console displays its prompt.

Modifying an existing ATPS configuration on a NetWare 3.x server

The procedure for modifying an existing ATPS configuration is similar to the procedure for creating a new configuration. The primary difference is that you are modifying an existing AUTOEXEC.NCF file instead of creating a new one.

1 At the console prompt, type

```
load install
```

The Install utility starts and a list of Installation Options appears.

2 Select Product Options from the list and press Enter.

A list of product options appears. If the Macintosh NLM is installed and operating properly, a NW-MAC option will be available.

3 Select the NW-MAC option and press Enter.

A list of configuration files appears.

4 From the list, select the file SYS:\SYSTEM\ATPS.CFG and press Enter.

A prompt appears, asking if you want to create a new file.

5 Type y and press Enter.

An empty window appears, providing an area for entering configuration information.

6 Enter a line of configuration information for each LaserWriter 16/600 PS printer. (Enclose the printer name and zone name in quotation marks.)

Example

```
"Sales Printer:Ethernet Zone"
```

This example identifies the printer "Sales Printer" located in the zone "Ethernet Zone."

You can include a `-h` option at the end of the line to instruct ATPS to make the printer unavailable for direct Macintosh printing; this makes the printer accessible only through ATPS queues.

Example

```
"Sales Printer:Ethernet Zone" -h
```

Note: Other ATPS options are available for configuring the printer. See the *NetWare for Macintosh* documentation for more information on these options.

7 Press Esc to quit editing.

A prompt appears, asking if you want to save your changes.

8 Type `y` and press Enter.

The list of configuration files reappears.

9 Press Esc until the Install utility exits.

10 At the system console prompt, type `unload atps` and press Enter.

This command unloads the previous version of ATPS configuration. Now you can reload ATPS using the modified configuration.

11 At the system console prompt, type `load atps` and press Enter.

The new configuration is immediately available.

Configuring ATPS for the first time on a NetWare 4 server

If you are setting up the printer for access by Macintosh computers on a NetWare 4 network and this is the first time you are configuring ATPS, follow these instructions.

You can configure ATPS from the server console, or by running RCONSOLE from a client PC.

1 At the console prompt, type

```
load install
```

The Install utility starts and a list of Installation Options appears.

2 Select the Maintenance/Selective Install option and press Enter.

An additional list of options appears.

3 Select Product Options from the list and press Enter.

A list of product options appears. If the Macintosh NLM is installed and operating, a NW-MAC option will be available.

4 Select the NW-MAC option and press Enter.

A list of configuration options appears.

5 Select Configure Print Services and press Enter.

A list of print service configuration options appears.

6 Select Quick Configuration and press Enter.

A list of lookup parameter options appears.

7 Select the Printer Model entry and press Enter.

A list of printer types appears.

8 Select the LaserWriter Pro 630 option and press Enter.

This selection provides a printer type similar to the LaserWriter 16/600 PS.

9 In the lookup parameter list, change the zone name to the zone in which the printer is currently located.

10 Select the Perform Lookup option and press Enter.



- 11** In the list of installed printers, locate and select the newly installed LaserWriter 16/600 PS printer from the list. (It should be identified as “LaserWriter 16/600 PS.”)
- 12** If necessary, edit the Spooler’s AppleTalk Name field and press Esc to complete the setup.

Note: You can also edit information about the print server or spooler. See the documentation provided with NetWare for more information.

- 13** Press Esc to exit the utility.

The NetWare for Macintosh Configuration screen appears.

- 14** Select Edit SYS:\SYSTEMAUTOEXEC.BAT from the list of options and press Enter.

A window appears, displaying the file’s contents.

- 15** Insert the following line after the `load afp` statement:

```
load atps
```

This command instructs the NetWare server to load the ATPS service automatically at startup time.

- 16** Press Esc until the Install utility quits.

- 17** At the system console prompt, type `load atps` and press Enter.

The service is loaded and immediately becomes available to network users. A message appears confirming the loading, and the console returns to the command line prompt.



Appendix C Technical Information

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Specifications

Marking engine

- Canon LBP-ZX laser-xerographic

Laser

- Type: Semiconductor laser GaAlAs
- Wavelength: 780 nm
- Output power: 5 mW

Controller

- AMD Am29030 25-MHz microprocessor
- 4 MB of ROM (including 35 Type 1 fonts)
- 8 MB of RAM (expandable to 32 MB)
- 80C186 I/O processor
- 2 KB parameter EEPROM
- SCSI interface for internal/external hard disk(s)
- LocalTalk interface
- Parallel interface (IEEE P1284 nibble-mode bidirectional)

- Ethernet interface with three protocols:
 - EtherTalk
 - Novell NetWare IPX (PSERVER or RPRINTER)
 - TCP/IP (BSD `lpd`)
- External Ethernet transceivers available for:
 - Thin Coax
 - Twisted Pair (10Base-T)
 - Thick Coax (IEEE 802.3 AUI)
- Two-position communication configuration switch
- All ports/protocols simultaneously active
- Fax card option slot
- 600 dpi resolution
- 600 dpi FinePrint (edge enhancement for text and line art)
- Enhanced 600 dpi grayscale imaging:
 - Standard—effective 106 lines/inch dithered halftone, 122 gray levels
 - PhotoGrade (with 12 MB of RAM)—true 106 lines/inch halftone, 91 gray levels
- PostScript Level 2 (2014)
- PCL5 (LaserJet IIID emulation)
- Automatic emulation switching



Printer fonts

Sixty-four fonts are provided with the LaserWriter 16/600 PS, including such fonts as ITC Avant Garde®, ITC Bookman®, Chicago, Courier, Delphian, Garamond Condensed, Geneva, Helvetica®, Helvetica Black, Helvetica Compressed, Helvetica Narrow, Lubalin Graph, Lucida Bright, Machine, Monaco, Nadianne, New Century Schoolbook, New York, Old English Text, Onyx, Oxford, Palatino®, Swing, Symbol, Times®, ITC Zapf Chancery®, ITC Zapf Dingbats®, and Zeal.

The following fonts are resident in the printer ROM:

- AvantGarde Book, AvantGarde BookOblique, AvantGarde Demi, AvantGarde DemiOblique
- Bookman Demi, Bookman DemiOblique, Bookman Light, Bookman LightItalic
- Courier, Courier Bold, Courier BoldOblique, Courier Oblique
- Helvetica, Helvetica Bold, Helvetica Bold Oblique, Helvetica Narrow, Helvetica Narrow Bold, Helvetica Narrow BoldOblique, Helvetica Narrow Oblique, Helvetica Oblique
- NewCentury Schoolbook Bold, NewCentury Schoolbook BoldItalic, NewCentury Schoolbook Italic, NewCentury Schoolbook Roman
- Palatino Bold, Palatino BoldItalic, Palatino Italic, Palatino Roman
- Symbol
- Times Bold, Times Bold Italic, Times Italic, Times Roman
- Zapf Chancery MediumItalic
- Zapf Dingbats

The following PCL fonts are resident in the printer ROM:

- Times Roman, Time Bold, Time Italic, Times Bold Italic
- Univers Medium, Univers Medium Bold, Univers Medium Italic, Univers Medium Bold Italic
- Courier 12 pitch, 10 point Medium; Courier 12 pitch, 10 point Bold; Courier 12 pitch, 10 point Italic; Courier 10 pitch, 12 point Medium; Courier 10 pitch, 12 point Bold; Courier 10 pitch, 12 point Italic
- Line Printer Font 16.67 pitch, 8.5 point, Medium

Speed

- 17 pages per minute maximum using letter-size paper or 16 pages per minute maximum using A4-size paper. Actual speed depends on the images printed.

Printer life expectancy

- Minimum life expectancy is 5 years or 450,000 pages, with no monthly page limit. Recommended service interval is 200,000 pages due to wear on fuser and rollers.

Toner cartridge life expectancy

- Life expectancy is 6,000 pages when printing text documents with average page coverage (5% black).

Printing materials

16- to 24-pound laser-quality bond (60 to 90 g/m²); up to 32-pound (120 g/m²) stock when fed manually through the multipurpose tray. Accepts most textured and colored stock. Accepts medium-weight photocopier transparencies. Envelopes can be printed from the multipurpose tray or from the optional envelope feeder. Labels can be printed with manual feed.

The paper used should not scorch, melt, transfer material, or release hazardous emissions when heated to 200° C (393° F) for 0.1 seconds.

Paper sizes and capacity

Supports U.S. letter and A4 in the standard paper cassette. The paper cassette holds 250 sheets of 20-pound (75 g/m²) paper. The multipurpose tray can hold up to 100 sheets of standard U.S. letter paper, and other paper sizes up to U.S. legal. Optional 500-sheet and 250-sheet universal cassettes are available that support letter, A4, B5, and U.S. legal paper sizes. An envelope feeder that can automatically feed up to 75 envelopes is also available.

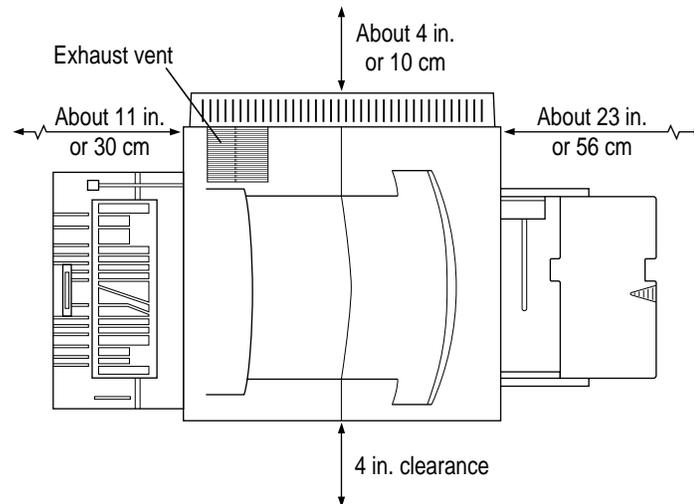
Envelope sizes and weights

Envelope	Weight	Size
COM 10	24 lb	4 1/8" x 9 1/2" (104.7 mm x 241.3 mm)
Monarch	24 lb	3 7/8" x 7 1/2" (98.4 mm x 190.5 mm)
DL	80 g/m ²	110 mm x 220 mm
C5	90 g/m ²	162 mm x 229 mm

Dimensions

- Height 12.13 in. (30.8 cm)
- Width 16.75 in. (42.5 cm)
- Depth 16.9 in. (42.9 cm)

Space requirements



Weight

- Approximately 40 lb (18.20 kg)

Environmental information

Operating

- Temperature 50° to 90° F (10° to 32° C)
- Humidity 20 to 80 percent RH non-condensing

Non-operating

- Temperature 32° to 95° F (0° to 35° C)
- Humidity 10 to 80 percent RH non-condensing

Storage (toner cartridge)

- Temperature -4° to 104° F (-20° to 40° C)
- Humidity 10 to 95 percent RH non-condensing

Storage (printer)

- Temperature -4° to 122° F (-20° to 50° C)
- Humidity 10 to 95 percent RH non-condensing

Voltage requirements

U.S./Japan

- 90 to 110.5 VAC, 48 to 52 Hz, 58 to 62 Hz
- 103.5 to 126.5 VAC, 58 to 62 Hz

Europe/Australia

- 198 to 264 VAC, 48 to 52 Hz



Power consumption

Energy-saving mode

- 26 W

Standby average

- 100/120 V, approximately 125 W
- 220/240 V, approximately 120 W

Operating average

- 110/120 V, approximately 390 W
- 220/240 V, approximately 370 W

Maximum power consumption

- 110/120 V, approximately 790 W, 6.8 A
- 220/240 V, approximately 770 W, 3.5 A

About PostScript Printer Description (PPD) files

Installing the Macintosh printer software also installs PPD files to support the following Apple LaserWriter printers:

- LaserWriter
- LaserWriter Plus
- Personal LaserWriter NT
- Personal LaserWriter NTR
- Personal LaserWriter 320
- LaserWriter II NT
- LaserWriter II NTX
- LaserWriter II NTXJ
- LaserWriter IIf
- LaserWriter IIg
- LaserWriter Select 360
- LaserWriter Select 360f
- LaserWriter Select 610
- LaserWriter Pro 400
- LaserWriter Pro 405
- LaserWriter Pro 600
- LaserWriter Pro 630
- LaserWriter Pro 810
- LaserWriter Pro 810f
- LaserWriter 16/600 PS
- LaserWriter 16/600 PS Fax

You can optionally install the Windows PPD files for these Apple LaserWriter printers:

- LaserWriter Select 360
- LaserWriter Pro 600
- LaserWriter Pro 630

You can use the standard Windows PPD file with a LaserWriter 16/600 PS that has the fax card option installed. No special PPD file is required.

RAM upgrade specifications

To increase the printer's RAM, purchase SIMMs with the following specifications:

SIMM dimensions

- Length: 107.95 mm +/- 0.20 mm (4.25 in. +/- .008)
- Height: 25.53 mm (1.005 in.) maximum

SIMM sizes and speeds

Size	Configuration	Speed	Connector type
4 MB SIMM	1 Mbit X 32 bit (one 4 MB bank)	80 ns or less	72-pin
8 MB SIMM	2 Mbit X 32 bit (two 4 MB banks)	80 ns or less	72-pin
16 MB SIMM*	4 Mbit X 32 bit (one 16 MB bank)	80 ns or less	72-pin

* Must have a 2 KB row (11 bit x 11 bit) refresh configuration. 16 MB SIMMs with a 4 KB row (10 bit X 12 bit) refresh configuration are not compatible with the printer.



Ozone emission

Ozone gas is emitted by almost all laser printers and photocopiers. The LaserWriter 16/600 PS printer technology allows it to emit practically no ozone gas (less than .01 parts of ozone per million parts of air). The current OSHA permissible exposure limit for ozone is 0.1 parts of ozone per million parts of air (ppm). The ozone emissions from the LaserWriter 16/600 PS printer comply with Underwriters Laboratory (UL) safety limits.

Depending on the levels of concentration, ozone can be a mild-to-severe irritant with known effects ranging from dry throat and nose, headache, and sore eyes to nausea, vomiting, and pulmonary congestion. For this reason various regulatory agencies have established limits regarding the amount of ozone to which employees may be exposed. The employer is responsible for providing a work environment that meets these standards.

You can usually identify ozone by its characteristic odor, even in concentrations well below the permissible exposure limit. However, as the concentration of ozone or the duration of exposure increases, your ability to smell it may decrease.

To minimize ozone exposure, install the LaserWriter 16/600 PS in a well-ventilated area and keep the equipment properly maintained. If there are other laser printers or photocopying machines in the same area, additional air circulation may be required. Do not place the LaserWriter 16/600 PS in a small, enclosed space that lacks adequate ventilation. Position the printer so that the fan exhaust does not blow directly into an individual's face. Finally, maintain the relative humidity between 30 and 70 percent. Extremely low humidity can slow the natural breakdown of ozone in the air.

Communication settings

The following table shows the default communication settings. For information about using the configuration switch to adjust communication settings, see “Adjusting Communication Settings,” in Chapter 1. To change or view the current communication settings, use the Apple Printer Utility on the Macintosh (see Chapter 2 for details) or the LaserWriter Utility for Windows on an IBM PC or compatible computer (see Chapter 3 for details).

Up (⏏) switch position (custom)

These factory default settings can be changed:

Port	Interface	Mode
LocalTalk	LocalTalk	PostScript
Ethernet	EtherTalk	PostScript
	Netware	PostScript
	TCP/IP	PostScript
Parallel	Parallel	PostScript (normal protocol)

Down (⏏) switch position (standard)

These settings cannot be changed:

Port	Interface	Mode
LocalTalk	LocalTalk	PostScript
Ethernet	EtherTalk	PostScript
	NetWare	AutoSelect
	TCP/IP	AutoSelect
Parallel	Parallel	AutoSelect (raw protocol)

Accessories

The following list includes both standard and optional parts.

Item	Part number
LaserWriter toner cartridge	M2473G/A
LaserWriter 16/600 PS 500-Sheet Feeder	M2650G/A
LaserWriter 500-Sheet Universal Cassette	M5862G/A
LaserWriter 250-Sheet Universal Cassette	M6525G/A
LaserWriter 16/600 PS Envelope Feeder	M2649G/A
LaserWriter 16/600 PS Fax Card	M3298LL/A
LaserWriter 16/600 PS Internal Hard Disk Drive	M3297G/A
Macintosh 4 MB Memory Expansion Kit (1-4 MB SIMM)	M3651LL/A
Apple HDI-30 SCSI Cable	M2538LL/A
Apple Ethernet Thin Coax Transceiver	M0329Z/B
Apple Ethernet Twisted Pair Transceiver	M0437Z/B
Apple Ethernet AUI Adapter	M0432LL/A
Apple SCSI Cable Extender	M0208LL/B
Apple SCSI Cable Terminator II (Black)	M5871G/A



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