

IBM Network Color Printer

User's Guide

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Note

Before using this information and the product it supports, be sure to read the general information under "Safety Notices" on page vii.

Second Edition (June 1996)

This edition applies to the *IBM Network Color Printer: User's Guide*, S544-5363-01.

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The IBM Printing Systems Company
Information Development
P.O. Box 1900
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Machine: IBM Network Color Printer
Warranty Period*: 12 months
* Contact your place of purchase for warranty service information

Production Status

Each Machine is manufactured from new parts, or new and serviceable used parts (which perform like new parts). In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's warranty terms apply.

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 - b. Secure all programs, data, and funds contained in a Machine,
 - c. Inform IBM or your re-seller of changes in a Machine's location, and
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3. If the machine is not shipped in an IBM box, be responsible for loss of, or damage to, a Machine in transit when you are responsible for the transportation charges.
4. Be responsible for any damage resulting from improper packing of a Machine sent to IBM for "Depot Mail-in Repair" or "Exchange."

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UNIX®	X/Open Company, Ltd.
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Federal Communication Notices Commission (FCC) Statement

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors (IBM partnumber 68X3949 or its equivalent for PC parallel) must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM authorized dealers. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

EU Conformity Statement: This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22/European standard EN 55022. The limits for Class B equipment were derived for typical environments to provide reasonable protection against interference with licensed communication devices.

German Conformity Statement: Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse B.

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Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouiller du Canada.

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Safety Notices

There are three levels of safety notices:

DANGER calls attention to a situation that is potentially or extremely hazardous to people.

CAUTION calls attention to a situation that is potentially hazardous to people.

Attention calls attention to the possibility of damage to a program, device, system, or data. Attention notices are located throughout this publication, but are not listed here.

Translations of the safety notices used in this library are found in *IBM Network Color Printer: Safety Information*. This manual is shipped with the printer and is provided with the maintenance documentation.

Safety Precautions

Electrical Safety

This printer is inspected and listed by recognized national testing laboratories, such as Underwriters Laboratories, Inc. (UL) in the U.S.A. and Canadian Standards Association (CSA) in Canada. Listing of a product by a national testing laboratory indicates that the product is designed and manufactured in accordance with national requirements intended to minimize safety hazards. IBM equipment meets a very high standard of safety in design and manufacture. Remember, however, that this product operates under conditions of high electrical potentials and heat generation, both of which are functionally necessary.

Because the paper and toner used in the printer can burn, you should take normal precautions to prevent fire. These precautions include common-sense measures, such as keeping potentially combustible materials (for example, curtains and chemicals) away from the printer, providing adequate ventilation and cooling, limiting unattended operation, and having trained personnel available and assigned to the printer.

Laser Safety

This printer complies with the performance standards set the by U.S. Food and Drug Administration for a Class 1 Laser Product. This means that the printer belongs to a class of laser products that does not produce hazardous

laser radiation in a customer access area. This classification was accomplished by providing the necessary protective housing and scanning safeguards to ensure that laser radiation is inaccessible or within Class 1 limits.

There are various tool-operated machine covers that should be moved, removed, or replaced only by trained service personnel. There are no operator controls or adjustments associated with the laser.

No operator maintenance is required to keep the product in compliance as a Class 1 Laser Product. No adjustments that affect laser operation or power are accessible to the operator.

Note: See *IBM Network Color Printer: Safety Information* for national language translations regarding laser safety.

Disposal of Materials

This printer may contain materials, either as components or supplies that are regulated by government agencies for disposal. Dispose of all such items in accordance with your governmental agencies regulations.

Preface

This publication describes how to install printer drivers and end-user software and how to print using the IBM Network Color Printer.

Audience

This publication is intended for an end user who prints to the IBM Network Color Printer.

Organization and Contents of This Guide

This publication describes how to install the end-user software that comes with the IBM Network Color Printer and how to set up and print on the printer from Macintosh and PC-compatible computers.

For information on installing the printer on TCP/IP, IPX (Novell®), or Windows NT networks, see the *IBM Network Color Printer: Administrator's Guide*. For general information on using your computer, your application software, or your network, see the manuals that accompany those products.

Chapter 1, "Introducing Your IBM Network Color Printer" introduces the IBM Network Color Printer, the different configuration versions supported, and the performance and functionality of each printer configuration version.

Chapter 2, "Configuring Your Macintosh to Use the IBM Network Color Printer" guides you through the steps for configuring a Macintosh computer to use the IBM Network Color Printer. This chapter includes information on installing printer drivers, printer description files, and utilities. It also explains how to set up to print from the Macintosh.

Chapter 3, “Getting the Best Results from Your Macintosh Applications” provides tips on printing to the IBM Network Color Printer using various Macintosh applications. Specific applications are discussed, such as Adobe Photoshop or Macromedia FreeHand.

Chapter 4, “Configuring Windows 3.1x to Use the Network Color Printer” guides you through the steps for configuring a computer running Windows 3.1x to use the IBM Network Color Printer. The chapter includes information on installing printer drivers, printer description files, and utilities. It also explains how to set up to print from the Windows 3.1x PC.

Chapter 5, “Configuring Windows NT to Use the IBM Network Color Printer” guides you through the steps for configuring a computer running Windows NT to use the IBM Network Color Printer. The chapter includes information on installing printer drivers, printer description files, and utilities. It also explains how to set up to print from the Windows NT PC.

Chapter 6, “Configuring Windows 95 to Use the Network Color Printer” guides you through the steps for configuring a computer running Windows 95 to use the IBM Network Color Printer. The chapter includes information on installing printer drivers, printer description files, and utilities. It also explains how to set up to print from the Windows 95 PC.

Chapter 7, “Getting the Best Results from Your Windows Applications” provides tips on printing to the IBM Network Color Printer using various Windows applications. Specific applications are discussed, such as CorelDRAW and Microsoft PowerPoint.

Chapter 8, “Using the Utilities” guides you through using the IBM Network Color Printer Spooler and Downloader utilities. Information on managing print jobs, downloading files and fonts, and utilities functionality is included.

Appendix A, “Using the Fiery Calibrator” tells you how to install and use the Fiery Calibrator to enhance the color consistency of your IBM Network Color Printer across time.

This publication also contains a glossary, including abbreviations, and an index.

Related Publications

The following publications are included with this printer:

- *IBM Network Color Printer: Installation and Relocation Guide*, G544-5362
- *IBM Network Color Printer: Operator's Guide*, S544-5361
- *IBM Network Color Printer: User's Guide*, S544-5363
- *IBM Network Color Printer: Administrator's Guide*, S544-5364
- *IBM Network Color Printer: Safety Information*, G544-5352

Note: The above publications are available in Adobe Acrobat Reader format on the CD-ROM shipped with this printer. You can view these publications or print them using Adobe Acrobat Reader.

If you wish to purchase additional copies of the publications, please contact your point of purchase or your IBM Marketing Representative.

Chapter 1. Introducing Your IBM Network Color Printer

Congratulations on purchasing your new IBM Network Color Printer. The Network Color Printer is a color laser printer with a number of advanced features. It can produce single-sided monochrome prints at rate of 12 impressions per minute (IPM) and full-color prints at a rate of 3 IPM. The printer has a cyan-magenta-yellow-black (CMYK), full-color laser engine that prints 16 gray levels per color. It prints PostScript jobs in Windows, Macintosh, and UNIX environments.

The IBM Network Color Printer comes in three memory configurations:

- The 16-megabyte (MB) configuration provides advanced network connectivity and high quality color laser printing. This is the default configuration.
- The 32-MB configuration provides on-printer queuing and spooling, expanded network connectivity, and faster printing.
- The 48-MB configuration provides all of the functionality described above, as well as increased printing speed and higher print quality on especially complex color print jobs.

Each of the three printer configurations provides a high level of print quality. However, these configuration options allow you to balance cost, performance, and printer features in a way that is right for your organization.

The 16-MB Printer Configuration

The 16-MB configuration provides high quality color printing at a very competitive price and is a good choice for home offices and other small-scale business applications.

Performance

The 16-MB configuration is best suited for print jobs where the color areas are predominantly presentation graphics and color text. These types of jobs will print at up to three pages per minute (3ppm) with the highest quality. As applications include more images, they may print at less than 3ppm. They will still print with very high quality.

Features

The 16-MB configuration offers several features for high-quality printing.

Network Connectivity: The 16-MB configuration provides network connectivity. It can receive jobs at the same time from TCP/IP users, Novell NetWare servers, Windows NT servers and workstations, and Macintosh and other AppleTalk users.

Rendering Styles: The 16-MB configuration enables you to choose between four rendering styles. They are:

- Photographic style - used for bitmap images
- Presentation style - used for presentations graphics
- Monitor style - used to emulate monitor screen appearance
- Solid Color style - used for spot-color graphics, such as logos.

The 32- and 48-MB Printer Configurations

The 32- and 48-MB configurations provide high-speed, high-quality color printing. They provide sophisticated print server functionality, including on-printer queuing, spooling, and job storage. They also provide easy-to-use client software for managing stored jobs. Both configurations are capable of handling a heavy load of graphics-intensive jobs.

Queuing, Spooling, Job Storage, and Security

In the 32- and 48-MB configurations, the Network Color Printer behaves like a print server in that it provides server-like job storage and management functionality. It provides this functionality through the Print queue, Printed queue, Hold queue, and Direct queue. Each queue can be enabled and configured according to your system needs.

The Print Queue

The Print queue is a job storage, queuing, and spooling area. When you submit a job to the print queue, the printer receives the job and stores it on the printer's hard disk. This frees your workstation, PC, or Macintosh to do other things rather than remaining busy with the job.

Jobs in the Print queue print in the order in which the printer receives them. When jobs are in the print queue, you can use the Spooler utility to change their attributes, such as Copies and Rendering Style, and to move them to the Hold queue or to discard them. Instructions on using the Spooler utility are in "Using the Spooler Utility" on page 8–8. After printing, jobs in the Print queue move automatically to the Printed queue if it is enabled at the printer.

The Printed Queue

When a job from the Print queue finishes printing, the job moves into the Printed queue for temporary storage. (If the Printed queue is not enabled at the printer, jobs that have been printed are discarded from the printer hard disk.) After a job is in the Printed queue, you can use the Spooler utility to change its attributes, such as Copies and Rendering Style, or to move it to the Print queue or the Hold queue or to discard it. Instructions on using the Spooler utility are in "Using the Spooler Utility" on page 8–8.

The size of the Printed queue is determined by a setting configured at the printer that limits the number of jobs held from 1 to 99. (The default is 10). Configuring the Printed queue sets the maximum number of jobs that the Printed queue can keep at any one time. When the Printed queue is full, the oldest job is discarded.

The Hold Queue

The Hold queue is a job storage area. When you submit or move a job to the Hold queue, the printer receives the job immediately and stores the job on the printer's hard disk. Jobs in the Hold queue do not print or clear from the printer until someone uses the Spooler utility to move them to the Print queue or to discard them from the printer hard disk.

The Direct Queue

The Direct queue provides a direct connection to the Network Color Printer, bypassing the printer hard disk. When you submit a job to the Direct queue, the printer accepts the job when it is ready to print the job. The Direct queue does not store jobs on the printer hard disk and so does not provide job spooling. This provides a measure of security for sensitive documents, such as personnel or payroll documents.

Jobs submitted to the Direct queue stay on the submitting server, workstation, PC, or Macintosh and keep it busy spooling the job until the printer is between Print queue jobs. Then the printer pauses the Print queue to process one Direct job.

Note: Printing to the Direct queue can take a long time if the job the printer is currently processing takes a long time or if there are many jobs going to the Direct queue.

Performance

This section discusses the performance of the 32- and 48-MB printer configurations with different kinds of print jobs.

- The 32-MB printer configuration is best suited for print jobs with medium-to-large size color image areas. Medium image areas cover less than one-fourth of a page; large image areas cover one-fourth to one-half of a page. With the 32-MB printer configuration, most print jobs with medium-sized image areas will print at 3ppm. Some complex print jobs with large image areas may print at less than 3ppm, but all will print with the highest quality.
- The 48-MB printer configuration is best for print jobs with large sized to full-page sized image areas. With the 48-MB configuration, most print jobs will print at 3ppm, and all will print with the highest quality.

The IBM Network Color Printer Utilities

Three utilities are provided with the IBM Network Color Printer. This section provides an overview of each one.

IBM Color Downloader

The IBM Color Downloader utility provides the ability to print PostScript and Encapsulated PostScript files directly to your Network Color Printer without using the application with which the files were created. The Downloader utility also allows you to download PostScript fonts to the Network Color Printer hard disk and to delete PostScript fonts from the printer hard disk. Only fonts that are not part of the permanently-installed set can be deleted.

The Downloader utility is supported for the 32- and 48-MB printer configurations. It runs on the Windows NT, Windows 95, and Macintosh operating systems. It is shipped with the printer on diskettes and on the *Customer CD-ROM*.

IBM Color Spooler

The IBM Color Spooler utility is designed for managing print jobs on the printer hard disk. It enables you to look at the order of print jobs in the Print queue, change job-option settings, delete jobs, and move jobs between the printer queues (except the Direct queue). Using the Spooler utility you can also access the Job Log. This is a record of the jobs that have been printed. Using the Spooler utility you can view it, print it, and save it to a file.

The Spooler utility is supported for the 32- and 48-MB Network Color Printer configurations. It runs on the Windows NT, Windows 95, and Macintosh operating systems. It is shipped with the printer on diskettes and on the *Customer CD-ROM*.

Fiery Calibrator

The Fiery Calibrator utility allows you to calibrate your IBM Network Color Printer. This enables you to keep your printer's colors at a consistent performance level across time.

The Calibrator utility is supported for all three of the Network Color Printer configurations. It runs on the Macintosh operating system only. It is shipped with the printer on diskettes and on the *Customer CD-ROM*.

Chapter 2. Configuring Your Macintosh to Use the IBM Network Color Printer

The general steps for installing the user software and setting up printing are:

- Install the PostScript Level 2 Printer Driver.
- Install the User Software and Color Reference Pages.
- Install the documentation files.

Accessing the *Customer CD-ROM* from Your Macintosh

The following sections discuss accessing the *Customer CD-ROM* over the network and from a CD-ROM drive on your Macintosh. If you are installing from diskette, skip to “Installing the PostScript Level 2 Printer Driver on Your Macintosh” on page 2–3.

Accessing the *Customer CD-ROM* from a Drive on Your Macintosh

1. If you are using an external CD-ROM drive, connect it to your Macintosh.
2. Insert the *Customer CD-ROM*.
3. The *Customer CD-ROM* icon appears on your desktop. It is open, and the window displays the language folders.
4. Double-click the folder that corresponds to your language.
5. Double-click on the MAC folder to open it. The Software Installer and the DRIVERS and UTILS folders are displayed.

Now you have access to the *Customer CD-ROM*. See “Installing the PostScript Level 2 Printer Driver on Your Macintosh” on page 2–3 for instructions on installing the printer driver.

Accessing the *Customer CD-ROM* across the Network

This section describes how to access the *Customer CD-ROM* if another Macintosh or a server on the network is sharing it.

Before you begin:

1. Make sure the Macintosh or server is sharing the CD-ROM.
2. Find out the name by which it is being shared on the network.
3. Make sure that you have a login and password to access the shared *Customer CD-ROM* if necessary.

(For instructions on configuring a Macintosh or server to share the *Customer CD-ROM*, see the *IBM Network Color Printer: Administrator's Guide*.)

To access the *Customer CD-ROM* over the network:

1. On your Macintosh, select Chooser from the Apple menu.



2. In the Chooser window, click the AppleShare icon.

If your network has zones, select the zone in which the AppleShare server resides. This displays a list of AppleShare servers in that zone.

3. From the list of AppleShare servers, double-click on the one that is sharing the *Customer CD-ROM*.

The Connect window appears.



Select Guest or Registered User.

- If you do not need a login and password, select Guest, click on the OK button and go on to step 4.
 - If you need a login and password, select Registered User and click on the OK button. Enter the login and password, click on the OK button, and go on to step 4.
4. The Select window appears.



Select the *Customer CD-ROM* by single-clicking on it. Do not check the box at the right.

Click on the OK button. This causes the *Customer CD-ROM* icon to be displayed on your desktop.

You now have access to the *Customer CD-ROM*. Continue with "Installing the PostScript Level 2 Printer Driver on Your Macintosh" on page 2–3.

Installing the PostScript Level 2 Printer Driver on Your Macintosh

This section explains how to install the PostScript Level 2 Printer Driver and IBM Network Color Printer printer page description (PPD) file. Installing this driver and PPD enables you to take advantage of PostScript level 2 features such as CMYK color and printer-specific features such as Rendering Style.

The PostScript Level 2 Printer Driver is available on the *Customer CD-ROM* or on diskette.

- If you are installing from diskette, go to “Installing the Printer Driver from Diskette.”
- If you are installing from the *Customer CD-ROM* make sure that you have access to it. Refer to “Accessing the Customer CD-ROM from Your Macintosh” on page 2–1 for instructions. Then see “Installing the Printer Driver from CD-ROM” on page 2–4.

Installing the Printer Driver from Diskette

Use this section to install the PostScript Level 2 Printer Driver from the Macintosh Driver diskette.

To install the PostScript Level 2 Printer Driver from diskette:

1. Insert the Macintosh Printer Driver diskette.
2. Click on the diskette icon to open it.
3. Double-click the icon for the Adobe PSPrinter Installer to run it. Follow the instructions on the screen.
4. When the installer has finished:
 - If you use QuarkXpress see “Installing the QuarkXPress Printer Description File” on page 2–5.
 - Otherwise, see “Installing the User Software on Your Macintosh” on page 2–6.

Installing the Printer Driver from CD-ROM

Use this section to install the PostScript Level 2 Printer Driver from the *Customer CD-ROM*.

Note: Make sure you have already accessed the *Customer CD-ROM* over the network or by inserting it into your CD-ROM drive. Instructions for accessing it over the network are in “Accessing the Customer CD-ROM across the Network” on page 2–1. The *Customer CD-ROM* icon should be on your desktop.

Since the Adobe PSPrinter installer does not work from within a subdirectory, you can install the driver manually from the CD-ROM or copy files from the CD-ROM to a diskette and install automatically from the diskette.

- To copy the driver files to diskette, see “To copy the printer driver files to diskette” on page 2–5.
- To install the printer driver and printer description files manually from the CD-ROM, see the section that follows, “To install the PostScript Level 2 Printer Driver from CD-ROM.”

To install the PostScript Level 2 Printer Driver from CD-ROM:

1. Double-click on the *Customer CD-ROM* to open it.
2. Click on the folder for the language you wish to select.
The language folder displays a DOC folder and a folder for each operating system.
3. Double-click on the MAC folder to open it. The DRIVERS folder and the UTILS folder are displayed.
4. Double-click on the DRIVERS folder to open it. This displays the:
 - PSPrinter** icon
 - IBM Network Color Printer** file
 - QuarkXPress (PDF)** folder
 - PSPrinter Diskette** icon
5. In your System folder, double-click on the Extensions folder to open it.
6. Click and drag the **PSPrinter** icon from the DRIVERS folder into the Extensions folder.
7. In the open Extensions folder, find the Printer Descriptions folder.
8. Click and drag the **IBM Network Color Printer** file from the DRIVERS folder into the Printer Descriptions folder.
9. Close the folders you have opened and:
 - If you use QuarkXpress see the following section, “Installing the QuarkXPress Printer Description File.”
 - Otherwise, see “Installing the User Software on Your Macintosh” on page 2–6.

To copy the printer driver files to diskette:

1. Double-click on the *Customer CD-ROM* to open it.
2. Double-click on the folder for the language you wish to select.
The language folder displays a DOC folder and a folder for each operating system.
3. Double-click on the MAC folder to open it. The DRIVERS folder and the UTILS folder are displayed.
4. Double-click on the DRIVERS folder to open it. This displays the:
 - PSPrinter** icon
 - IBM Network Color Printer** file
 - QuarkXPress (PDF)** folder
 - PSPrinter Diskette** image(You may need to scroll or enlarge the window to see all the files and folders.)
Note: You can use a diskette-duplicator application to create diskettes from the PSpriinter Diskette image. To do so, follow the instructions that came with the application. This section gives instructions for copying the files manually.
5. Double-click to open the **PSPrinter Diskette** icon.
6. Insert a blank diskette into your diskette drive.
7. Shift-click to select all the contents of the PSpriinter Diskette. Drag them into the empty diskette. A status bar displays as the files are copied into the diskette.
8. To install from the diskette you just created, see “Installing the Printer Driver from Diskette” on page 2–3.

Installing the QuarkXPress Printer Description File

Use this section if you have QuarkXPress on your system. Quark requires an additional printer description file.

1. Open the QuarkXPress (PDF) folder. This displays the file:
IBM Network Color Printer.PDF.PDF
2. Install the file in one of these locations:
 - QuarkXPress 3.2** Put the file in the folder where QuarkXPress is located.
 - QuarkXPress 3.3** Put the file in the PDF folder inside the folder where QuarkXPress is located.

Installing the User Software on Your Macintosh

This section contains instructions for installing the user software from the *Customer CD-ROM* and from diskettes onto your Macintosh computer.

To install the software from diskettes, see “Installing the User Software from Diskette” on page 2–8.

To install the software from the *Customer CD-ROM*, proceed to the following section, “Installing the User Software from the Customer CD-ROM.”

Installing the User Software from the Customer CD-ROM

The following user software is included on the *Customer CD-ROM*:

IBM Color Downloader Utility	This utility enables you to print PostScript and Encapsulated PostScript files directly to the printer without using the application in which the files were created. Printing with the Downloader is faster than printing from within applications. The Downloader also enables you to manage the fonts installed on the printer.
IBM Color Spooler Utility	This utility enables you to view the order and priority of print jobs, to customize printer settings for jobs, and to delete jobs and move jobs between queues. You can also use it to see what jobs the printer has completed.
Fiery Calibrator Utility	This utility enables you to keep your printer’s colors at a consistent performance level across time. For instructions, see “Using the Fiery Calibrator” on page A–1.
Screen Fonts	This is a file of screen fonts for the 39 PostScript fonts installed on the printer. Install the screen fonts only if they are not already installed on your Macintosh.
Color Reference Files	The Color Reference pages are PostScript files that you can print using the Downloader utility, thus enabling you to view the range of CMYK and Pantone colors available on your printer.

To install software from the CD-ROM:

1. Double-click on the *Customer CD-ROM* icon to open it.
2. Double-click on the folder that corresponds to the language you wish to select.
3. Double-click on the MAC folder to open it. This displays the FONTS, UTILS, and DRIVERS folders. If necessary, install the screen fonts from the FONTS folder.
4. Double-click on the UTILS folder to open it. This displays the Spooler and Downloader icons, and the Color Reference folder.

5. Click on the items you want to install, and drag them to the location on your hard drive in which you want to keep them.
 - You might want to keep the utilities in a folder with your other utilities or create a new folder for them.
 - Put the Color Reference folder anywhere you like. It contains these color reference pages:
 - CMYK_REF.PS
 - PANTONEC.PS
 - PANTONEU.PS

After you are done installing the utilities, you can use the Downloader to print the color reference pages. Use the color reference pages to see how specific CMYK and PANTONE colors print on your IBM Network Color Printer. For instructions on using the Downloader and Spooler utilities, see “Using the Utilities” on page 8–1.

Installing Screen Fonts on Your System

To use screen fonts, you must install them on your system. If they are already installed on your system, you do not need to install them again.

Note: If Adobe Type Manager is installed on your Macintosh, you do not need to install these screen fonts.

If you use a font management utility such as Suitcase II or Font Juggler, follow the instructions included with the utility. If you do not use a font management utility, install the screen fonts as described in your Macintosh documentation (by dragging the files to your System Folder).

For every PostScript font you want to use in a document, you must install at least one point size of the screen font on your Macintosh. The more sizes and styles you install, the greater the variety of type your Macintosh can display clearly. Each point size and style occupies between 3K and 12K of disk space. It is usually a good idea to install at least the 10- and 12-point sizes of each font in the regular, bold, italic, and bold italic versions.

Installing the User Software from Diskette

The user software available on diskettes is:

IBM Color Downloader Utility	This utility enables you to print PostScript and Encapsulated PostScript files directly to the printer without using the application in which the files were created. Printing with the Downloader is faster than printing from within applications. The Downloader also enables you to manage the printer fonts installed on the printer.
IBM Color Spooler Utility	This utility enables you to view the order and priority of print jobs, customize printer settings for jobs, delete jobs, and move jobs between queues. You can also use it to see what jobs the printer has completed.
Fiery Calibrator	This utility enables you to keep your printer's colors at a consistent performance level across time. For instructions, see "Using the Fiery Calibrator" on page A-1.

To install software from the Network Color Printer diskettes:

1. Insert the Spooler Utility diskette in your diskette drive.
2. Double-click on the diskette icon to open the diskette. The icon for the Spooler utility is displayed.
3. Double-click on the hard disk icon to open your hard disk.
4. If you wish to, create a new folder on your hard disk in which to keep the IBM Network Color Printer utilities.
5. Click and drag the Spooler icon from the open diskette to your open hard disk.
6. By clicking and dragging it, move the new Spooler icon on your hard disk to the location at which you want to keep the network printer utilities.
7. Eject the Spooler Diskette by clicking and dragging it into the Trash icon.
8. Insert the Downloader Utility diskette into your diskette drive.
9. Double-click on the diskette icon to open the diskette. The icon for the Downloader utility is displayed.
10. Double-click on the hard disk icon to open your hard disk.
11. Click and drag the Downloader icon from the open diskette to your open hard disk.
12. By clicking and dragging it, move the new Downloader icon on your hard disk to the location at which you keep the network printer utilities.
13. Eject the Downloader diskette by clicking and dragging it into the Trash icon.

For instructions on using the Downloader and Spooler utilities, see "Using the Utilities" on page 8-1.

Installing the Documentation and Adobe Acrobat Reader

The documentation files and Adobe Acrobat Reader are available on the *Customer CD-ROM*. Installing the documentation files and Adobe Acrobat Reader allows you to view and print the documentation files at any time.

To install the documentation and Acrobat Reader:

1. In the open *Customer CD-ROM*, double-click to open the folder that corresponds with your language. This displays the DOC folder and the folders that correspond with the different operating systems.
2. Double-click on the DOCS folder to open it. This displays the icons of the books and the ACROBAT folder. Open the MAC folder to see the Adobe Acrobat Reader 2.0 Installer.
3. Double-click on the Acrobat Reader Installer icon to install Reader.
4. At this point, you are guided by instructions displayed on the screen of your computer. Follow these instructions.
5. Click and drag the documentation files from the open DOC folder to the location on your hard disk in which you want to store the books.

After you have installed Acrobat Reader and the documentation files, you can view and print any of the books by double-clicking the Acrobat Reader icon, and then opening the book from within Reader.

Setting up for Printing to the IBM Network Color Printer

After you install the printer driver files and printer description files, you need to set them up to take full advantage of the printer features. Use the Chooser desktop utility to associate the printer with the correct printer description file.

The set-up process is different if you will submit jobs directly to the printer than if you will submit jobs to a network server queue that is connected to the printer. If you will submit jobs to a network server queue that is connected to the printer, see "To set up for printing to a server that is connected to the printer" on page 2-11. If you will submit jobs directly to the printer, continue with the following section.

To set up for printing to the printer:

1. Select the Chooser desktop utility from the Apple menu.

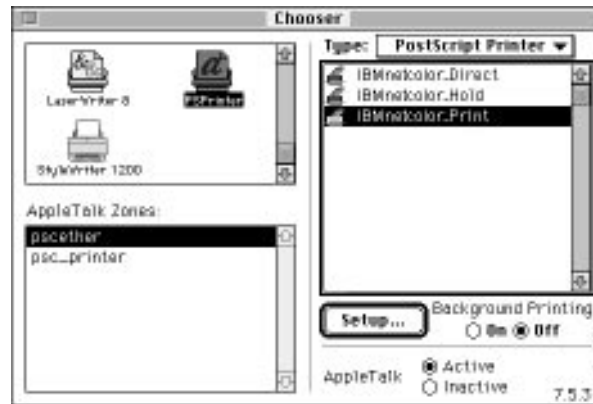


2. Locate the PSPrinter icon. You may have to scroll down to see it. When you have located it, click on it.

3. If your network has zones, click the zone in which the printer resides. This displays a list of printer devices in that zone. In this list, the printer appears once for each printer queue that is enabled. For example, assume:

- Your printer is named “IBMnetcolor”
- The Print queue, Hold queue, and Direct queue on your printer are all enabled.

Your printer appears in the list like this:



4. Click on one of the printer queues and click on the Setup button.

The PostScript Level 2 Printer Driver automatically selects the IBM Network Color Printer printer description file, and sets up the printer queue. The printer queue now has a color icon next to it.

5. Repeat step 4 for each of the printer queues you will use.
6. Decide which queue to use first and select that queue. Base your decision on the following information about the three queues:

Print queue:

When you submit a job to the Print queue, the printer receives the job, storing it on the printer hard disk. This frees your Macintosh to do other things, rather than waiting for the printer to become available and the job to print.

- Jobs in the Print queue print in the order in which the printer receives them. However if a job has not yet begun printing, you can use the Spooler utility to move it from the Print queue to the Hold queue or to the trash. After printing, jobs in the Print queue move automatically to a job storage area on the printer hard disk, the Printed queue. (This happens only if the Printed queue is enabled.)
- You cannot put jobs directly into the Printed queue, which is why this queue does not appear in the Chooser. When a job is in the Printed queue, you can use the Spooler utility to change its attributes, move it into the Print queue or Hold queue, or discard it. See “Using the Spooler Utility” on page 8–8 for instructions on using the Spooler utility. When the Printed queue contains its maximum allowable number of jobs, it discards its oldest job. This number is configurable by the printer administrator.

Hold queue:

When you submit a job to the Hold queue, the printer receives the job, storing it on the printer hard disk.

A job in the Hold queue remains there until someone uses the Spooler utility to move it to the Print queue or to discard it.

Direct queue:

When you submit a job to the Direct queue, the printer does not begin to receive the job until it is ready to print the job. The Direct queue does not store jobs on the printer hard disk. This may be useful to you if you are printing a sensitive document, such as a personnel document.

Jobs you submit to the Direct queue stay on your Macintosh and keep your Macintosh busy until the printer is between jobs from the Print queue. Then the printer pauses the Print queue to process one Direct job. Note that printing to the Direct queue can take a long time if the job the printer is currently processing takes a long time or if there are other jobs before yours going to the Direct queue.

Jobs that print through the Direct queue do not go into the Printed queue after printing.

7. Close the Chooser.
8. Go to "Printing from Your Macintosh" on page 2-12".

The printer queue that you chose in the preceding steps is selected as your printer. It will stay selected until the next time you use the Chooser to select a different printer queue or a different printer. Go on to "Printing from Your Macintosh" on page 2-12.

To set up for printing to a server that is connected to the printer:

1. Select the Chooser desktop utility from the Apple menu.



2. Locate the PSPrinter icon. You may have to scroll down to see it. When you see it, click on it.
3. If your network has zones, click on the zone in which the server resides. A list of devices in that zone is displayed.
4. The server queue that is connected to the printer appears in this list. Your administrator can tell you the name that represents the server queue.
5. Click on the server queue to select it and click on the Setup button.
6. A progress box displays as your Macintosh tries to set up the queue automatically. Then the Select a PostScript Printer Description File dialog box is displayed.

7. Click on IBM Network Color Printer and click on the Select button. The Setup dialog box appears; it tells you which printer description file you just selected. Make sure it is the IBM Network Color Printer.
8. Click on the OK button. The Chooser shows the queue with a color icon next to it. Jobs that you submit to the server queue will be correctly formatted for the IBM Network Color Printer. Close the Chooser.

The printer queue that you chose in the preceding steps is selected as your printer. It will stay selected until the next time you use the Chooser to select a different printer queue or a different printer. Go on to "Printing from Your Macintosh" on page 2-12.

Printing from Your Macintosh

After the PostScript Level 2 Printer Driver is installed and you are set up for printing, use the printer as you would any other printer. First, use the Chooser desktop accessory to select a printer queue as your current printer. Then print the file from within your application.

Selecting the Network Color Printer

If you have not already done so, use the Chooser desk accessory to select one of the printer queues. If you have already done this, see "Submitting a Print Job from within an Application" on page 2-13.

The printer queue that you choose in these steps is selected as your printer. It will stay selected until the next time you use the Chooser to select a different printer queue or a different printer.

To select the printer as the current printer:

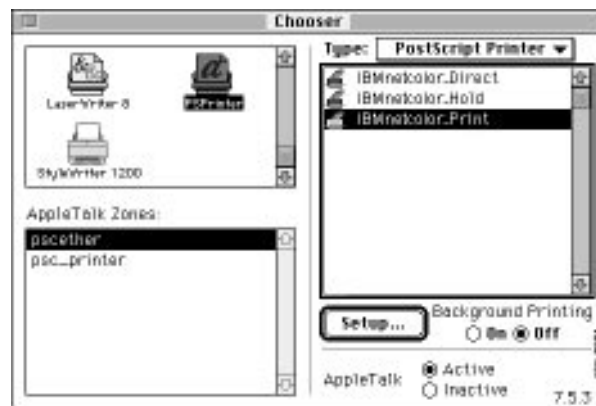
1. Select the Chooser desktop utility from the Apple menu.



2. Click on the PSpriinter icon. You may have to scroll down to see it.
3. If your network has zones, click the zone in which the network color printer resides. This displays a list of printer devices in that zone. In this list, the printer appears once for each printer queue that is enabled. For example, assume:

- your printer is named “IBMnetcolor”
- on your printer, the Print queue, Hold queue, and Direct queue are all enabled.

Your printer appears in the list as:



Note: If your administrator disables one of these three printer queues, the disabled queue does not appear in this list.

4. Choose from the three printer queues, the Print, Direct, and Hold queue. The Print queue is recommended. See “Queuing, Spooling, Job Storage, and Security” on page 1–2 for a complete description of the printer queues.
5. For the Print and Hold queues, set Background Printing to Off. For the Direct queue and for 16 MB printers, set this option according to your preference.

Submitting a Print Job from within an Application

Once you have selected one of the printer queues in the Chooser, you can print to the printer.

This section gives general instructions on printing from any Macintosh application. For information about achieving the best printing results from specific applications, see “Getting the Best Results from Your Macintosh Applications” on page 3–1.

Note: If you use QuarkXPress, install the PDF file before printing from it. See “Installing the QuarkXPress Printer Description File” on page 2–5.

To print from a Macintosh application:

1. From within your application, open the file that you want to print.
2. From the File menu, choose Page Setup.

The Page Setup dialog box is displayed. Select the printing options you want and click on the OK button.

3. From the File menu, choose Print. The PSPrinter dialog box is displayed.



4. In the Paper Source box, choose from which trays the printer should feed paper. For example:

- To have the job print from either Tray 1 or Tray 2, whichever has the correct paper loaded, choose All: Auto Select.

Note: This is often the best selection, as it maximizes the chances that there will be paper to print your job.

- To print all pages in the job onto transparencies, choose All: Auxiliary Tray, and make sure that transparencies are in the fold-out Auxiliary Tray. See the *IBM Network Color Printer: Operator's Guide* for instructions on loading transparencies.
- To print all the pages in the job onto paper from Tray 1, choose All: Tray 1.
- To print the first page of your job on media from one tray, and the remaining on media from a different tray, choose

First from: *trayA*
Remaining from: *trayB*

where *trayA* is the tray containing media on which you want the first page printed and *trayB* is the tray containing media on which you want the remaining pages printed.

5. In the Destination box, make sure that Printer is selected.

6. Click on the Options button to set additional information for the print job.



The options in this dialog box are specific to the Network Color Printer. Note that you must scroll to see all the options.

If you select the Printer's Default setting for any of these options, your job will print using the default values with which the printer is configured.

The options you can specify are:

Print:

Black and White	Choose this if your job has only black text and graphics.
Color/Grayscale	Choose this if your job has black or color text and grayscale graphics.
Calibrated Color	Choose this if your job has color graphics. Choosing this option makes rendering style options available.

Color Mode:

CMYK	Choose this option to print in color.
Grayscale	Choose this option to print all the colors in your job as shades of gray.

Paper Type:

Plain Paper	Choose this option if you will be printing on paper.
Transparency	Choose this option if you will be printing on transparencies from the Auxiliary Tray. This option is active only if you selected Auxiliary Tray as one of your paper sources.

Rendering Style:

Photographic	Choose this rendering style to get the best results for photographic or bitmap images.
Presentation	Choose this rendering style to get the best results for business presentations and other documents with pure, saturated colors. Choose this option for printing to transparencies.
Monitor	Choose this rendering style to simulate the appearance of the image on a monitor. Overall color saturation is reduced so that bright, high-contrast images on the monitor will have a similar appearance on the paper.
Solid Color	Choose this rendering style to get the best results for documents with spot colors, such as those found in company logos.

Note: If you print a document that is already in CMYK the printer ignores your rendering-style choice. This is because your rendering style choice determines how the printer converts RGB color to CMYK color. If you send CMYK data, your Macintosh has already done the conversion before the printer gets the file. For this reason, either work in RGB mode or switch to RGB mode before printing.

Finish:

Normal	Choose this option to get a printout that has a medium gloss.
Matte	Choose this option to get a printout that has less gloss. This does not work well for heavier paper. Note: Your print will take longer, as the printer must wait to cool down before it can print your job.
Glossy	Choose this option to get a printout that has more gloss. Also use this option for heavier paper. Note: Your print will take longer, as the printer must wait to heat up before it can print your job.

Brightness:

85%-115%

In most cases, choose 100%. If you want a lighter or darker printout, experiment with different settings until you find the one you like. 85% is lighter, 115% is darker.

If you want, click on the Save button to make these your default Print Options choices for this printer queue.

7. Click on the OK button to close the Print Options window.
8. Click on the Print button to send the job to the IBM Network Color Printer queue.

Batch Printing, Printing Already-created PostScript Files

Use this section if you repeatedly print the same finished documents.

Batch printing on the IBM Network Color Printer is available with the Downloader utility. Make sure that the Downloader utility is installed on your Macintosh. For instructions on installing the Downloader utility, see “Installing the User Software on Your Macintosh” on page 2–6.

The general steps for batch printing are:

1. From each one of your documents, create a PostScript file. See “Creating PostScript Files from Your Documents.”
2. Use the Downloader utility to download the PostScript files to the printer. You can download as many files as you want in each batch. Make sure that the Downloader utility is installed on your Macintosh.

For instructions on downloading the PostScript files to the printer, see “Using the Downloader Utility” on page 8–1.

Creating PostScript Files from Your Documents

Use this section to create PostScript files that are suitable for printing using the IBM Color Downloader utility. For fast repeat and batch printing, keep finished documents in PostScript form.

Before you begin, make sure that you have done these things:

- Installed the Downloader utility, the PostScript Level 2 Printer Driver, and any necessary printer description files and screen fonts. See “Installing the User Software on Your Macintosh” on page 2–6 for instructions.
- Used the Chooser desktop accessory to set up the enabled printer queues. See “Setting up for Printing to the IBM Network Color Printer” on page 2–9.
- Used the Chooser desktop utility to choose one of the printer queues as your printer. See “Selecting the Network Color Printer” on page 2–12.

Even though you are not sending the job to the printer now, choosing the Network Color Printer makes its special print options available. When you create the PostScript file, your choices of these options become part of the file. When you later download the file to the printer, your choices for these options determine how the printer processes the job.

The general steps for creating a PostScript file from your document are similar to those for printing your document directly to the printer.

To print to a PostScript file:

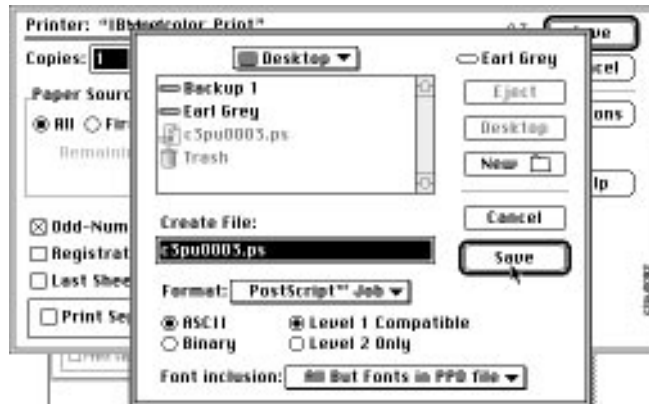
1. From within your application, open the document from which you want to create a PostScript file.
2. Choose Page Setup from the File menu of your application. The Page Setup dialog box is displayed.
3. Select the page setup options you want and click on the OK button to close the Page Setup dialog box.

4. Choose Print from the application's File menu. The PSpriinter dialog box is displayed.



Note: Make sure that Destination: File is selected.

5. Click on the Options button. For these options, use the settings specified in steps 4 through 7 of "To print from a Macintosh application:" on page 2–14.
6. Click on the Save button. The Create File dialog box is displayed.



7. Choose the location to which you would like the PostScript file saved. Do this by clicking on the pop-up box at the top and selecting the location in which you want to be. To go into a volume or folder listed below the pop-up box, double-click on the volume or folder.

If you wish, you can create a new folder in which to save the PostScript file. To do so, go to the location at which you want to create the new folder and click on the New button. The Name of new folder dialog box is displayed. Enter the name of the folder you wish to create and click on the Create button. This places you inside the newly-created folder.

8. Choose ASCII.
9. Choose PostScript level 2 only.

10. For the Font Inclusion option, in most cases choose All But Fonts in PPD file. However, if you are using fonts that the printer did not come with but that have already been downloaded to the printer with the Downloader utility, choose None.
11. Click on the Save button to save the job as a PostScript file.

Once you have a PostScript file, use the Downloader utility to download the file. See “Using the Downloader Utility” on page 8–1.

Working with Your Jobs in the Network Color Printer Queues

When your jobs are in the printer queues, you can view them, change some of the print settings, and print additional copies. Use the Spooler utility to do these tasks.

First make sure that the utilities are installed on your Macintosh. For instructions on installing the utilities, see “Installing the User Software on Your Macintosh” on page 2–6.

Once the utilities are installed, for instructions on using the Spooler utility, see “Using the Spooler Utility” on page 8–8.

Chapter 3. Getting the Best Results from Your Macintosh Applications

This chapter provides application notes that explain which options to choose when printing from a particular Macintosh application. They also list accompanying software or printer files that you may need.

This chapter contains notes for the following applications:

- “Adobe Illustrator 5.0 and 5.5” (discussed on page 3–1)
- “Adobe PageMaker 5.0” (discussed on page 3–4)
- “Adobe Persuasion 3.0” (discussed on page 3–8)
- “Adobe Photoshop 2.5 and 3.0” (discussed on page 3–10)
- “Macromedia FreeHand 5” (discussed on page 3–11)
- “Microsoft PowerPoint 4.0” (discussed on page 3–14)
- “Other QuickDraw Applications” (discussed on page 3–18)

These application notes give condensed instructions only for printing directly to a Network Color Printer. For instructions on using the Spooler and Downloader utilities, see “Using the Utilities” on page 8–1.

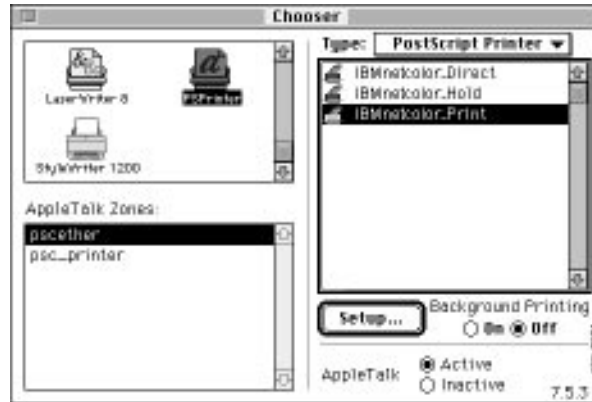
Adobe Illustrator 5.0 and 5.5

Use the Adobe PostScript printer driver with Illustrator.

Before you begin:

1. Select the PSPrinter icon from the Chooser and then select the printer queue you want to se.
2. Look to see if there is a color icon next to the queue.
 - If there is a color icon next to the queue name, go to “Choosing Fill and Line Colors” on page 3–2.
 - If there is no color icon next to the name of the printer, click on the Setup button. The driver automatically selects the IBM Network Color Printer printer page description (PPD) file. When this is done, a color

icon displays next to the printer name. This setup enables the driver to present you with correct print options when you submit a job.



The PostScript Level 2 Printer Driver is included on the *Customer CD-ROM*. For instructions on installing and setting up this driver, see “Installing the PostScript Level 2 Printer Driver on Your Macintosh” on page 2–3.

Choosing Fill and Line Colors

You can create fill and line colors using the process color model (entering a percentage for cyan, magenta, yellow, and black) or choose a named color using one of the four color matching systems supplied. For consistent color, use the CMYK and PANTONE Color Reference pages supplied on the *Customer CD-ROM*.

Calibrating Your Monitor

To calibrate your monitor to more closely resemble Network Color Printer output, follow the instructions in the Adobe Illustrator User’s Guide. You will need to create a progressive color bar like the one found in the guide and print it on the printer.

Working With Imported Files

IBM recommends using EPS files for all raster artwork that will be placed in Illustrator documents. For best results, use RGB images saved from Adobe Photoshop. Photoshop includes PostScript information in RGB EPS files that activates the printer Rendering Styles (color rendering dictionaries). When you use this type of image file, the image prints from Illustrator as it does from Photoshop.

Note: Using a different file format compromises the printed output of RGB bitmaps since no color rendering dictionary (CRD) is activated.

If you use a pixel-editing application other than Photoshop, we recommend separating the image to CMYK before importing it. CMYK raster images from high-end scanners are typically separated for offset printing and may need some color correction to print properly on your Network Color Printer.

Selecting Options When Printing

Illustrator files can be printed directly to the Network Color Printer without using Adobe Separator. No Print Options settings are required for Adobe Illustrator documents, unless:

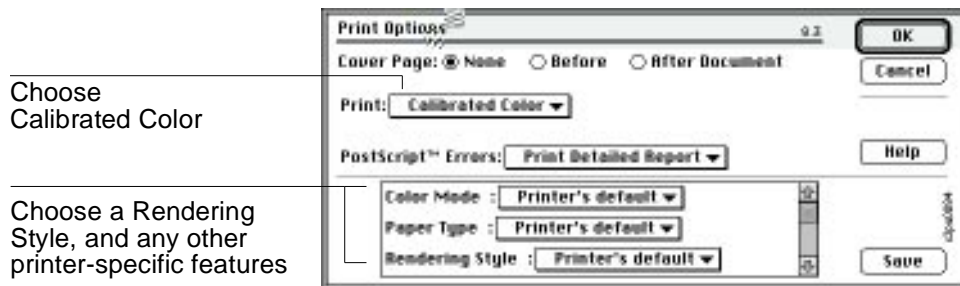
- the document contains EPS images saved out of Photoshop from RGB source images
- you want to choose printer-specific options such as Paper Type

Refer to the following illustrations for examples:



Click to display the Print Options

In the Print Options dialog box, choose Calibrated color. For Rendering Style, choose the setting that is appropriate for the graphics in the document.



Choose Calibrated Color

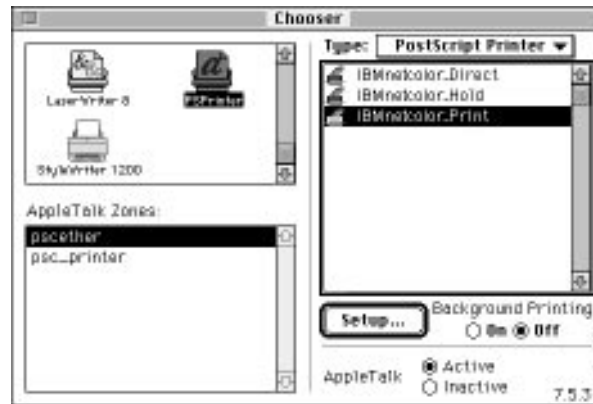
Choose a Rendering Style, and any other printer-specific features

Adobe PageMaker 5.0

IBM recommends using the Adobe PostScript printer driver with PageMaker, although LaserWriter 8.0 and 7.1 are also supported.

Before you start:

1. From the Chooser, select the PSPrinter icon.
2. Select the printer queue you want to use. If the driver is set up to work with your printer, an icon appears next to the queue name.



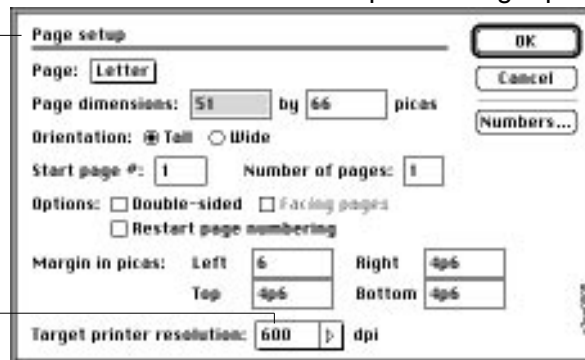
The Adobe PSPrinter driver is included on the *Customer CD-ROM*. For instructions on installing and setting up this driver, see “Installing the PostScript Level 2 Printer Driver on Your Macintosh” on page 2–3.

Page Setup

Choose options in the Page Setup dialog box when you begin creating the PageMaker document. Enter 600 dpi for “Target printer resolution.”

Choose Page Setup
from the File menu

Enter 600 here



Choosing Fill and Line Colors

You can create fill and line colors using the process (CMYK), RGB, or HSB color model or choose a named color using one of the four color matching systems supplied. Note that displayed versions of colors you choose will not match printer output exactly.

For accurate and consistent color specification, use the CMYK and PANTONE Color Reference pages supplied on the *Customer CD-ROM*.

Working with Imported Files

IBM recommends using EPS files for all artwork that will be placed in PageMaker documents unless you are using the option-print feature. For best results, use RGB images saved from Adobe Photoshop. Photoshop includes PostScript information in RGB EPS files that activates the printer Rendering Styles (color rendering dictionaries). When you use this type of image file, the image prints from Illustrator as it does from Photoshop.

Note: Using a different file format compromises the printed output of RGB bitmaps since no color rendering dictionary (CRD) is activated.

If you use a pixel-editing application other than Photoshop, we recommend separating the image to CMYK before importing it. CMYK raster images from high-end scanners are typically separated for offset printing and may need some color correction to print properly on the IBM Network Color Printer.

Note: EPS files do not print correctly when you use the option-print feature described in the following section. If you plan to use the option-print features, use CMYK TIFF files instead of EPS files.

Selecting Options When Printing

There two different ways to print in PageMaker. You can print by choosing Print from the File menu (standard with other applications). Or you can use the option-print feature to get access to printer-specific features, such as Paper Type, that are normally available with PostScript level-2 printer drivers.

Note: When you use option-print, EPS files print at the low resolution used for their screen previews. Therefore, using option-print is only recommended when you need to choose a printer-specific feature.

The following illustrations show how to choose options when printing. Any options that are not discussed may be set to your preference.

Choose IBM Network Color Printer

Print document

Print to: IBMNetwork_Print

Type: IBM Network Color Printer

Copies: 1

Page: All Ranges 1

Print: Both Even Odd

Print blank pages Page independence

Book: Print all publications in book Use paper settings of each publication

Orientation:

Buttons: Print, Cancel, Document, Paper, Options, Color, Reset

Click these buttons to access more print options

Choose a paper size

Choose a paper tray

Paper

Size: Letter 51 x 66 picas

Source: AutoSelect

Print area: 48p3 x 64p3 picas

Center page in print area

Tile: Manual Auto: overlap 3p10.8 picas

Scale: 100 % Reduce to fit

Thumbnails: 16 per page

Duplex: None Short edge Long edge

Buttons: Print, Cancel, Document, Paper, Options, Color, Reset

Click Optimized

Click Faster (binary)

Options

Graphics: Normal Optimized Low TIFF resolution Omit TIFF files

Markings: Printer's marks Page information

Send data: Faster (binary) Normal (text)

PostScript: Include PostScript error handler Write PostScript to file: Save as...

Normal EPS For separations

Include downloadable fonts Extra image bleed Launch Aldus PrePrint

Fonts: Use symbol font for special characters

Buttons: Print, Cancel, Document, Paper, Options, Color, Reset

Click Composite

Click Color

Color

Composite Mirror Negative

Color Print colors in black Preserve EPS colors

Separations: Print this ink

Print Ink: Process Magenta, Process Yellow, Process Black, Calibration

Buttons: Print all inks, Print no inks, All to process

Optimized screen: Default

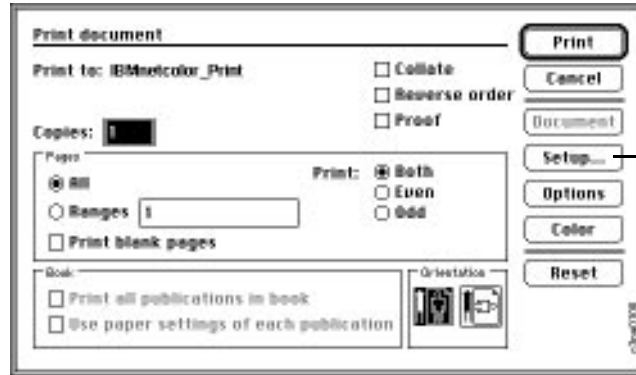
Angle: 0°

Scaling: 66.0 lpi

Buttons: Print, Cancel, Document, Paper, Options, Color, Reset

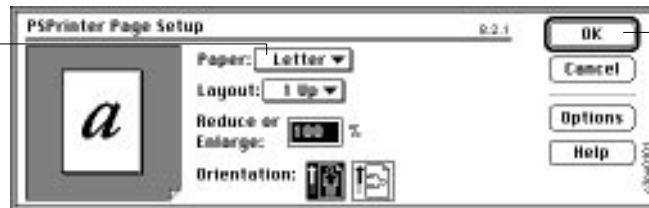
Using Option-Print

To use the option-print feature, hold down the option key while selecting Print from the File menu. In the Print document dialog box that is displayed, the Paper button is replaced by the Setup button. Use the Setup button to access printer features.



Click Setup to access printer features (a Page Setup dialog box is displayed initially)

Choose a paper size



Click on OK (a Printer dialog box is displayed)

Choose a paper tray

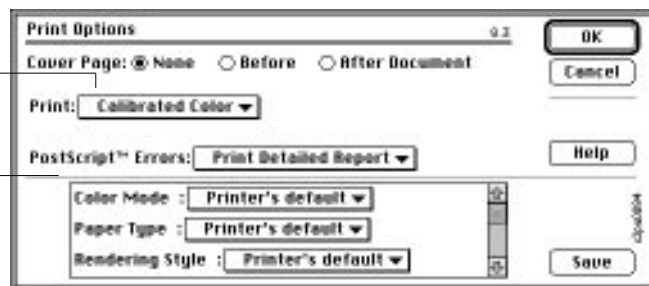


Click to return to the Print dialog box

Click to display the Print Options dialog box

Choose Calibrated Color

Choose printer features

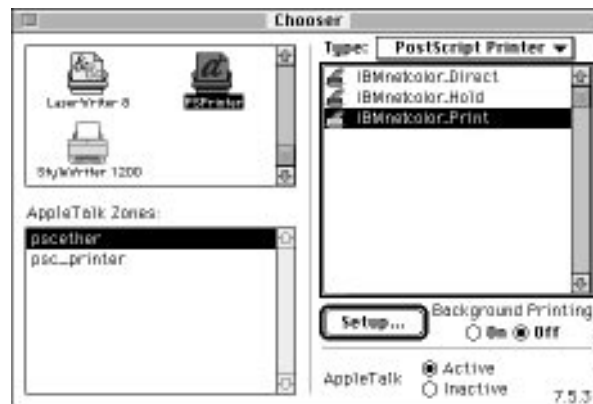


Adobe Persuasion 3.0

Presentations created in Persuasion can be printed to the printer on plain paper or on transparencies. For the best results IBM recommends using the printer's built-in CRDs, as explained in the following sections. Note that you will need to use a PostScript level-2 printer driver such as the Adobe PostScript printer driver supplied with the printer.

Before you start:

1. From the Chooser, select the PSpriinter icon.
2. Select the printer queue you want to use. If the driver is set up to work with your printer, an icon appears next to the printer-queue name.



The Adobe PSpriinter driver is included on the *Customer CD-ROM*. For instructions on installing and setting up this driver, see "Installing the PostScript Level 2 Printer Driver on Your Macintosh" on page 2–3.

Working with Imported Files

You can import graphics in EPS, PICT, Windows Metafile, and Photo CD formats into Persuasion. EPS files are recommended for printing to the IBM Network Color Printer. However, if you plan to show the presentation on a monitor as well as in hardcopy form, you may want to use a PICT file, which displays with better quality. Note that RGB EPS and PICT files may print differently.

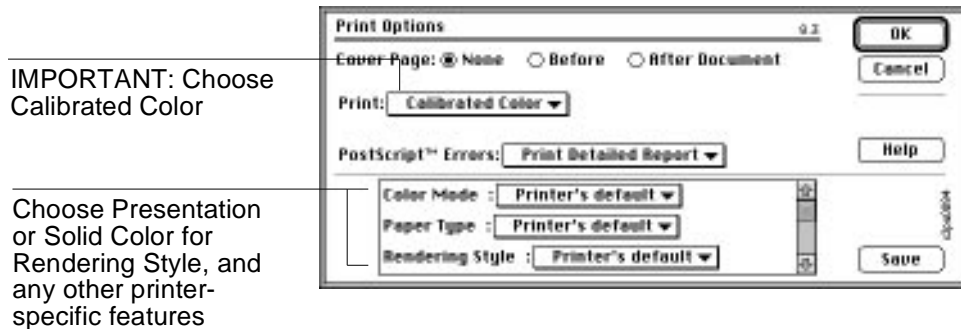
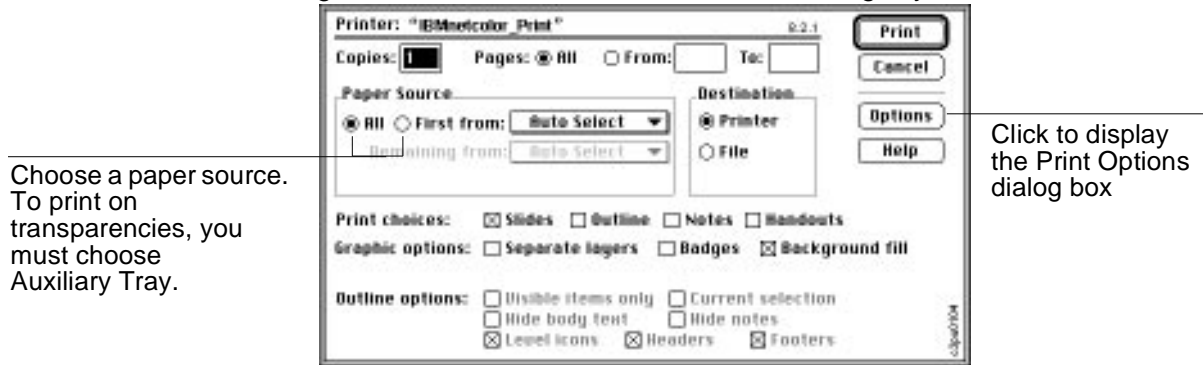
All RGB EPS files imported into Persuasion are affected by your choice of Rendering Style in the Print Options dialog box. Typically these are raster images, such as scans, that work best with the Photographic Rendering Style. This Rendering Style may not be appropriate for the presentation's other picture elements, which will probably work best with the Presentation Rendering Style. In this case, you have a choice. You can:

- experiment with the different Rendering Styles to see which best suits the overall document.
- before importing the RGB image, use a pixel-editing application such as Adobe Photoshop to separate it and save it as a CMYK EPS file. CMYK files are not affected by the Rendering Styles. In this way the imported images bypass the CRD altogether, and can choose a

CRD that is best for the other images in the document.

Selecting Options When Printing

Refer to this section to select options in the Print and Print Options dialog boxes. To use the Rendering Style when printing from Persuasion, you must choose Calibrated Color in the Print Options dialog box. IBM recommends choosing Presentation or Solid Color for Rendering Style.



Note: To print your presentation on transparencies, choose a Paper Type of Transparencies.

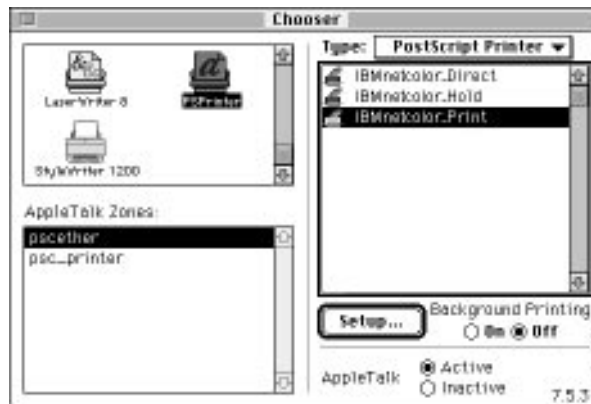
Adobe Photoshop 2.5 and 3.0

This section explains printing from Photoshop using the built-in CRDs.

IBM recommends using the Adobe PostScript printer driver with Photoshop, although LaserWriter 8.0 and 7.1 are also compatible. Because Photoshop is a PostScript level-2 application, RGB image data is processed using the CRDs regardless of the printer driver used.

Before you start:

1. If you use Photoshop 2.5, make sure the plug-in called “Don't Tag RGB PostScript” is *not* placed in the Photoshop Plug-ins folder.
2. From the Chooser, select the PSPrinter icon and then select the name of your IBM Network Color Printer. If the driver is set up to work with your printer, an icon appears next to the printer name.



The Adobe PSPrinter driver is included on the *Customer CD-ROM*. For instructions on installing and setting up this driver, see “Installing the PostScript Level 2 Printer Driver on Your Macintosh” on page 2–3.

Selecting Options When Printing

Refer to this section to select options in the Print and Print Options dialog boxes. Note that you must select the Print in RGB option in the Print dialog box to use the printer CRDs. The CRDs are called Rendering Style in the Print Options dialog box. Since Photographic is the printer's default CRD, you only need to select it in the Print Options dialog box if you previously chose a rendering style other than Photographic for your saved set of print options.

IMPORTANT: Click Print in RGB to use the CRDs



Click to display the Print Options

Click Binary

Use these choices:

IMPORTANT: Choose Calibrated Color

Choose Photographic for Rendering Style, and any other printer-specific features



Exporting Image Files to Other Applications

For importing into other applications, such as QuarkXPress, IBM recommends using EPS format files. Photoshop puts PostScript information in RGB EPS files that activates the printer CRDs.

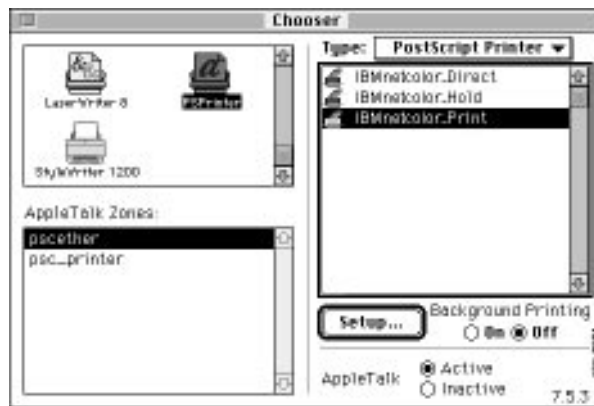
Rotating, cropping, and resizing the image in Photoshop before importing it into the other application speeds printing.

Macromedia FreeHand 5

IBM recommends using the Adobe PostScript Level 2 printer driver with FreeHand, although LaserWriter 8.0 and 7.1 are also compatible.

Before you start:

1. From the Chooser, select the PSpriinter icon.
2. Select the printer queue you want to use. If the driver is set up to work with your printer, an icon appears next to the printer-queue name.



The Adobe PSpriinter driver is included on the *Customer CD-ROM*. For instructions on installing and setting up this driver, see “Installing the PostScript Level 2 Printer Driver on Your Macintosh” on page 2–3.

Choosing Fill and Line Colors

You can create fill and line colors using the CMYK, RGB or HSL color models, or use one of the colors supplied with the application.

To accurately specify colors, use the CMYK or Pantone colors in the color reference pages. For instructions on installing the color reference pages, see “Installing the User Software on Your Macintosh” on page 2–6.

Working with Imported Files

IBM recommends using EPS files for all raster artwork that will be placed in FreeHand documents.

If the image is RGB, it should be saved from Adobe Photoshop since Photoshop includes PostScript information in RGB EPS files that activates the CRDs. Using this type of image file, the image prints from Illustrator as it does from Photoshop.

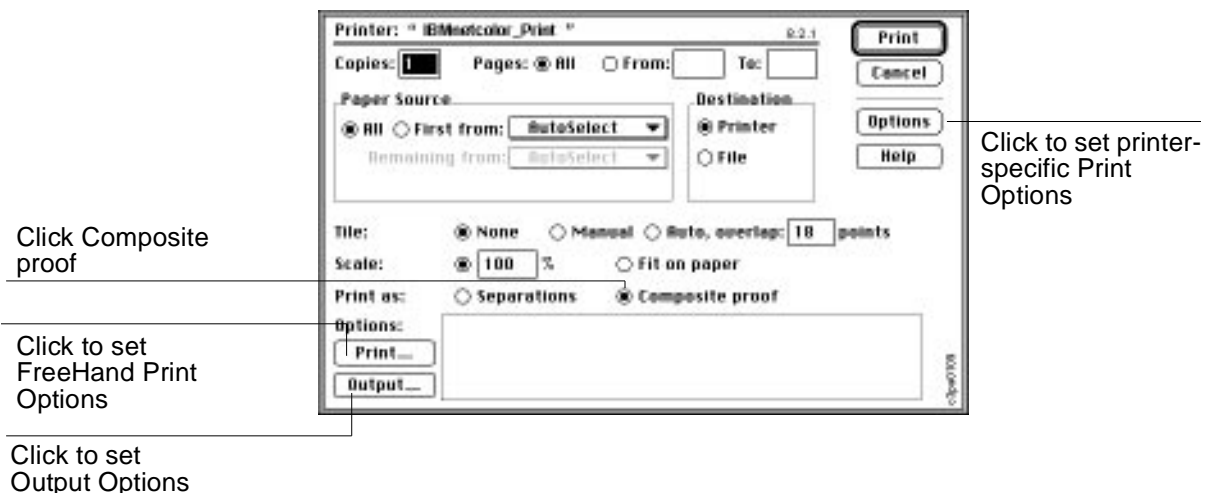
Note: Using a different file format compromises the printed output of RGB bitmaps, since no CRD is activated.

If you use a pixel-editing application other than Photoshop, IBM recommends separating the image to CMYK before importing it. CMYK raster images from high-end scanners are typically separated for offset printing and may need some color correction to print properly on your printer.

Note: EPS separations should be saved without the DCS option selected. DCS files placed in FreeHand documents print at the low resolution used for the screen viewing.

Selecting Options When Printing

Refer to the following illustrations to choose options when printing.



Click Use PPD Information

Choose 100 lpi / 400

Choose Unadjusted

Your printer model appears here, provided it is your selected printer in the Chooser

Don't check Split complex paths

Click Binary data

Leave these fields blank

It is only necessary to set printer-specific Print Options (by clicking Options in the Print dialog box) if the FreeHand document you are printing includes a placed photographic image saved from Photoshop as an RGB EPS file.

For detailed instructions on setting Print Options, see “Submitting a Print Job from within an Application” on page 2–13.

Choose Calibrated Color

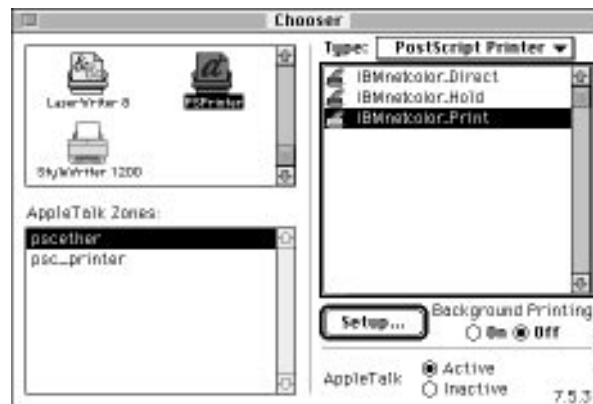
Choose Photographic for Rendering Style, and any other printer-specific features

Microsoft PowerPoint 4.0

Presentations created in PowerPoint can be printed to the IBM Network Color Printer on plain paper or on transparencies. For the best results, IBM recommends using the built-in CRDs, as explained in the following application notes. You will need to use a PostScript level-2 printer driver such as the printer driver supplied with the printer.

Before you start:

1. From the Chooser, select the PSPrinter icon.
2. Select the printer queue you want to use. If the driver is set up to work with your printer, an icon appears next to the printer-queue name.



The Adobe PSPrinter driver is included on the *Customer CD-ROM*. For instructions on installing and setting up this driver, see "Installing the PostScript Level 2 Printer Driver on Your Macintosh" on page 2–3.

Working with Imported Files

Attention: TIFF and PICT files imported into Power Point may cause printing problems. Their use is strongly discouraged.

IBM recommends using EPS format files for all raster images you want to import into PowerPoint. They print at their full resolution (rather than the low resolution used for the screen preview).

All RGB EPS files imported into PowerPoint are affected by your choice of Rendering Style in the Print Options dialog box. The Rendering Styles activate corresponding CRDs in the printer. Typically, EPS files are raster images, such as scans, that work best with the Photographic Rendering Style. Photographic may not be appropriate for the presentation's other picture elements, which will probably work best with the Presentation or Solid Color. If this is the case with your document, you have a choice. You can either:

- Experiment with the different Rendering Styles to see which best suits the overall document.
- Before importing the RGB image, use a pixel-editing application such as Adobe Photoshop to separate it and save it as a CMYK EPS file.

CMYK files are not affected by the printer CRDs. The imported CMYK image is not affected by the CRD, and you can choose a Rendering Style that is best for the other images in the document.

Selecting Options When Printing

Refer to this section to select options in the Print and Print Options dialog boxes. For detailed instructions on setting print options, see “Submitting a Print Job from within an Application” on page 2–13.

Choose a Paper Source.
To print on transparencies,
choose Auxiliary Tray.



Click to display
the Print Options
dialog box

To activate CRDs when printing, you must choose Calibrated Color in the Print Options dialog box. The printer's default CRD is Photographic, so for Rendering Style you will probably want to choose the Presentation or Solid Color.

Choose Calibrated Color

Choose Presentation or Solid
Color for Rendering Style.
Choose a Paper Type, and any
other printer-specific features



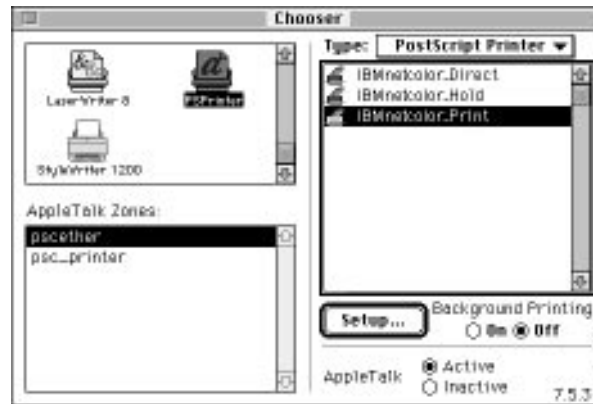
Note: To print your presentation on transparencies, make sure that you choose a Paper Type of Transparencies and that transparencies are loaded into the Auxiliary Tray. For instructions, see the *IBM Network Color Printer: Operator's Guide*.

QuarkXPress 3.2 and 3.3

This section gives instructions for using QuarkXPress 3.2 and 3.3.

Before you start:

1. From the Chooser, select the PSpriinter icon.
2. Select the printer queue you want to use. If the driver is set up to work with your printer, an icon appears next to the printer-queue name.



The Adobe PSpriinter driver is included on the *Customer CD-ROM*. For instructions on installing and setting up this driver, see "Installing the PostScript Level 2 Printer Driver on Your Macintosh" on page 2–3.

3. Make sure that you have installed the file:

IBM Net Color Printer.PDF.PDF

in the correct location:

- | | |
|------------------------|--|
| QuarkXPress 3.2 | Put the file in the folder where QuarkXPress is located. |
| QuarkXPress 3.3 | Put the file in the PDF folder inside the folder where QuarkXPress is located. |

Optimizing QuarkXpress for the IBM Network Color Printer

To get the best results when printing from QuarkXPress, be sure to select the IBM Network Printer PDF file from the QuarkXPress Page Setup dialog box.

To set up for the IBM Network Color Printer:

1. Choose Page Setup from the File menu. The PSpriinter Page Setup dialog box is displayed.



2. For Printer Type, choose IBM Net Color.PDF.

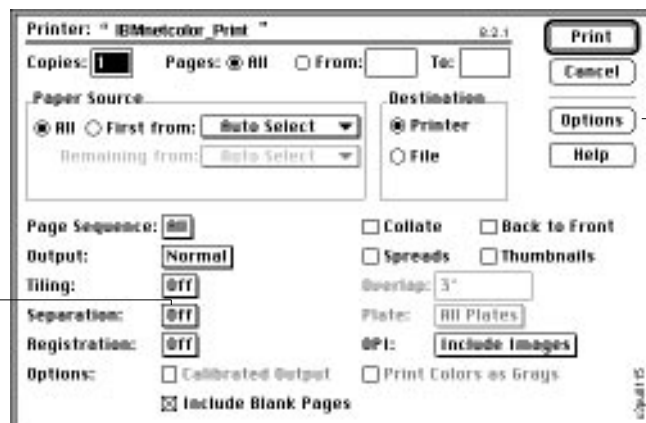
Note: Do *not* choose IBM Network Color Printer. Choosing the PDF file gives better results.

3. For EFiColor Profile, choose *None*. For the other items, choose settings that are appropriate for the print job.

Setting Options When Printing

When you select Print, the Print dialog box displays. For a detailed explanation of the selections, see “Submitting a Print Job from within an Application” on page 2–13.

Make sure Separation is Off.



Click to display the Print Options dialog box

To make selections in the Print Options dialog box, click on the Options button in the Print dialog box. The Print Options dialog box is displayed.

IMPORTANT: choose Calibrated Color



The options you choose here depend on what types of document you are creating. For a detailed explanation of the options, see “Submitting a Print Job from within an Application” on page 2–13.

Other QuickDraw Applications

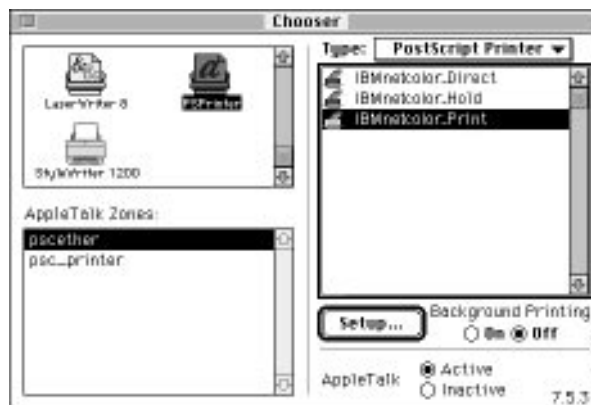
This application note gives guidelines for printing from QuickDraw applications that are not covered on an individual basis in this chapter. (Almost all word processors, spreadsheets, and presentation packages are QuickDraw applications; they rely on QuickDraw rather than the PostScript language to send words and pictures to printers. Examples include Microsoft Word, Excel, and PowerPoint, and Aldus Persuasion.)

Since most QuickDraw applications function similarly for printing, the instructions found here are applicable to many printing scenarios. Note that you will need to use a PostScript level-2 printer driver such as the Adobe PostScript printer driver supplied with the printer.

Be sure to read the your application’s user guide and the ReadMe file, if one is included, for additional information about printing.

Before you start:

1. From the Chooser, select the PSpriinter icon.
2. Select the printer queue you want to use. If the driver is set up to work with your printer, an icon appears next to the printer-queue name.



The Adobe PSPrinter driver is included on the *Customer CD-ROM*. For instructions on installing and setting up this driver, see “Installing the PostScript Level 2 Printer Driver on Your Macintosh” on page 2–3.

Working with Imported Files

Although your application may allow you to import a variety of file formats, we recommend using EPS format files for all raster images you want to import. Some applications have printing problems with file formats such as TIFF and PICT.

If the image is RGB, it should be saved from Adobe Photoshop, because Photoshop includes PostScript information in RGB EPS files that activates the printer CRDs. If you use this type of image file, the image will print from your application as it does from Photoshop.

Note: All RGB EPS files imported into your document are affected by your choice of Rendering Style in the Print Options dialog box.

Because the rendering style that is best suited to other picture elements in your document or presentation may not be appropriate for imported raster images, you may want to have these images bypass the CRD altogether. To do this, before importing the image, use a pixel-editing application such as Adobe Photoshop to separate the image and save it as a CMYK EPS file.

IBM recommends separating the image to CMYK before importing it if you use a pixel-editing application other than Photoshop. CMYK bitmaps from high-end scanners are typically separated for offset printing and may need some color correction to print properly on your printer.

Selecting Options When Printing

Refer to this section to select options in the Print and Print Options dialog boxes. To use a CRD when printing from your application, it is necessary to choose “Calibrated Color” in the Print Options dialog box.



Click to display the Print Options dialog box

IMPORTANT: Choose Calibrated Color



Choose a Rendering Style, and any other printer-specific features

Chapter 4. Configuring Windows 3.1x to Use the Network Color Printer

This chapter describes how to install the user software and set up printing on your Windows 3.1x PC. The general steps are:

- Install and configure the PostScript Level 2 Printer Driver.
- Set your default printer.
- Set print options.
- Install CMYK and Pantone Color Reference pages.
- If printable versions of the documentation are desired, install the documentation files and Adobe Acrobat Reader.

The software for the IBM Network Color Printer is provided on the *Customer CD-ROM* that shipped with the printer. Except for the color reference pages and the documentation, all of this is also available on the diskettes that shipped with the printer.

Installing the PostScript Level 2 Printer Driver

To set up the Network Color Printer as a PostScript printer, you need to install the PostScript Level 2 Printer Driver included on the *Customer CD-ROM* or diskettes. This allows you to take advantage of PostScript Level 2 features such as CMYK color.

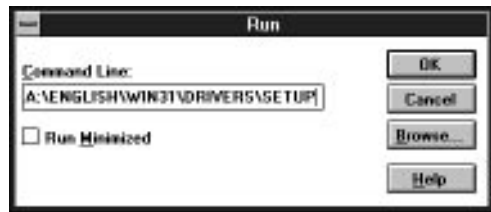
Note: If the PostScript Level 2 Printer Driver is already installed on your PC, do not install it again. Go to “Setting Up the Printer Driver for the IBM Network Color Printer” on page 4–5.

To install the PostScript Level 2 Printer Driver:

1. From the Program Manager window, click on the File menu.



2. Click on the Run... menu item. The Run window is displayed.



3. Your next step depends on whether you are installing from CD-ROM or diskette:

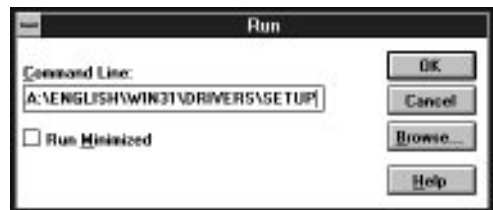
- If you are installing from the Windows Drivers diskette, insert the diskette. In the Command Line text field, enter the drive in which the diskette is inserted, (for example, A :) followed by \SETUP.

Go to step 4.

- If you are installing from the CD-ROM, in the Command Line text field enter the drive in which the *Customer CD-ROM* is located (for example, D:). Follow this with the directory path.

To enter the directory path, type the name of the language in which you wish to work (refer to the *Customer CD-ROM* booklet for a list of the language directories), then the operating system subdirectory, drivers subdirectory and then SETUP.

The example below shows a path in which the code is being installed from the A drive and the English directory is being accessed.



Or, if you had the CD-ROM in the D drive and wanted to use Spanish, the directory path would be:

D:\ESPAÑOL\DRIVERS\SETUP

4. When you have entered the directory and SETUP command, click on the OK button.
5. The Initializing Setup status window appears first, then the Adobe

PostScript Printer Driver Setup window appears.



6. Follow the instructions in the window, then click on the Continue button.
A status menu is displayed while your PC gets ready; then the PC copies the PostScript Level 2 Printer Driver. When the file copy has completed, the Restart window is displayed.



7. The next step is different depending on whether you installed from CD-ROM or diskette:
 - If you installed from CD-ROM, click on the Restart button. Windows restarts.
 - If you installed from diskette, remove the diskette from the diskette drive. Then click on the Restart button. Windows restarts. Insert the diskette into the drive.

You have successfully installed the PostScript Level 2 Printer Driver. Next, install the IBM Network Color Printer printer description file. See the following section, “Installing the Printer Description File.”

Installing the Printer Description File

1. From the Main window, double-click on the Control Panel icon.



The Control Panel window is displayed.



2. Double-click on the Adobe PostScript Printers icon.

The Install PostScript Printer from PPD window appears, which asks you to locate and select a PostScript printer description file.



3. Click on the arrow at the right of the Drives box to display the available drives. What you do next depends on whether you are installing from CD-ROM or diskette:
 - If you are installing from diskette, click and select the drive in which the diskette resides. Go to step 4.
 - If you are installing from CD-ROM, click on the CD-ROM drive in which the *Customer CD-ROM* resides. In the Directories box, open the directory for your language and then the DRIVERS directory. Go to step 4.
4. Click on the Install button. After a moment, an information window tells you that installation was successful.



You have successfully installed the IBM Network Color Printer PPD. Now go on to set up the printer driver for printing to the IBM Network Color Printer. See "Setting Up the Printer Driver for the IBM Network Color Printer."

Setting Up the Printer Driver for the IBM Network Color Printer

Use this section to set up the PostScript Level 2 Printer Driver now that you have installed it. This section contains information connecting to the printer in various ways and on setting your default print options. Topics discussed in this section are:

- Connecting to a network server queue, in "Connecting to a Network Server" on page 4–5
- Connecting to the printer using AppleTalk, in "Using AppleTalk to Connect to the Printer" on page 4–6
- Connecting to the printer using TCP/IP, in "Using TCP/IP to Connect to the Printer" on page 4–7
- Connecting to the printer using Parallel, in "Connecting to a Parallel-attached Network Color Printer" on page 4–8
- Setting print options, in "Setting the Default Print Options" on page 4–10
- Setting the IBM Network Color Printer as your default printer, in "Setting Your Default Printer" on page 4–13

Connecting to a Network Server

Your network may have a server that provides network print services to the Network Color Printer. Such a server might be running Windows NT, Novell NetWare, AIX, or another operating system. If a network server is providing print services to the Network Color Printer, see your network administrator for instructions on connecting to the server.

Using AppleTalk to Connect to the Printer

If you are using COPSTalk or Farralon PhoneNET to provide an AppleTalk connection to the printer, see the documentation that came with the product for instructions on setting the port.

When you are using a product that provides an AppleTalk connection to the Network Color Printer, the printer appears as multiple devices on your network. This is because there are three printer queues built into the Network Color Printer: the Direct queue, the Print queue, and Hold queue. Each of these that is enabled appears as a separate printer device on the AppleTalk network. For example, assume:

- your Network Color Printer is named “IBMnetcolor”
- on your printer, the Print queue, Hold queue, and Direct queue are all enabled.

In this case, the Network Color Printer appears on the AppleTalk network as three printers:

IBMnetcolor_Direct
IBMnetcolor_Hold
IBMnetcolor_Print

Select the printer queue you want to use. (IBM recommends the Print queue for most uses.) Once connected, see “Setting the Default Print Options” on page 4–10.

Using TCP/IP to Connect to the Printer

There are two ways you might print to the IBM Network Color Printer using TCP/IP:

- The printer may act as a stand-alone TCP/IP server with three connected printers (Print, Hold, and Direct). This is the simplest TCP/IP configuration.
- Your administrator may configure a TCP/IP server on your network to provide queuing and other print services to the Network Color Printer. When you submit a job to the queue on this server, the server redirects it to the printer. (This allows an administrator more control over the print jobs.)

To configure your PC for TCP/IP printing, you need the printer's TCP/IP address. Ask your administrator for the correct TCP/IP address. The permanent TCP/IP queue names are as follows:

ibmcolor_print
ibmcolor_direct
ibmcolor_hold

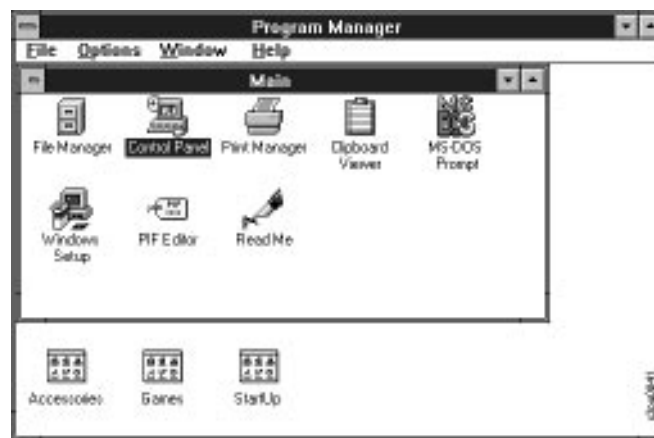
Important: The TCP/IP queue names are not configurable and do not change when you change the printer name (Unlike the AppleTalk queue names.)

Notes:

1. IBM recommends that you use `ibmcolor_print`, as this will place your jobs in the Print queue on the printer. This reduces the amount of time your PC spends spooling the job. If for security reasons your jobs should not be stored even temporarily on the printer's hard disk, choose `ibmcolor_direct`. The Hold queue is not recommended as jobs in the Hold queue do not print until moved to the Print queue with the Spooler utility.
2. These instructions also apply if you are connecting to a print queue on a server. However, in this case your administrator must give you both the server TCP/IP address and the queue (printer) name.

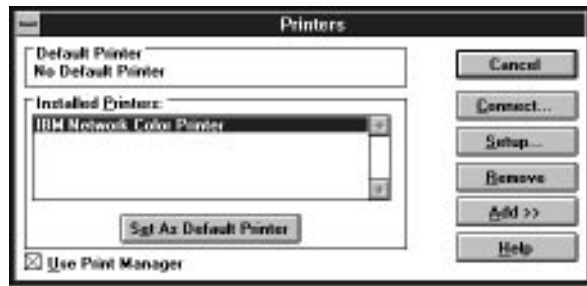
To select a printer port:

1. From the Main window, double-click on the Control Panel icon.



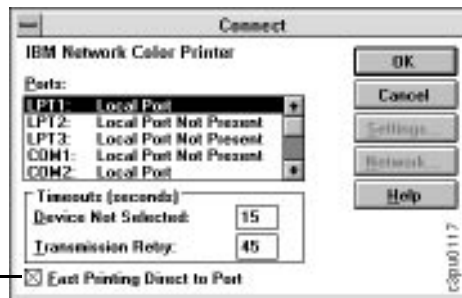
2. The Control panel window is displayed. In the Control Panel window,

double-click on the Printers icon. The Printers window is displayed.



3. In the Printers window, select the IBM Network Color Printer in the Installed Printers list box. Click on the Connect button.

The Connect window is displayed.



Select Fast Printing if you are using the Print queue.

If you are using the Direct queue, do *not* select Fast Printing.

4. Click on the arrow at the right of the Ports text box. Scroll down through the list and select LPR Port. Click on the OK button.

A window appears asking you to enter the printer TCP/IP address and name.

5. Enter the TCP/IP address and the name of the queue you want to use and click on the OK button.
6. The Printers window appears again, with the selected port next to the highlighted printer name in the Installed Printers list box.

The printer driver is installed and connected. See “Setting the Default Print Options” on page 4–10 to set the default print options for this printer.

Connecting to a Parallel-attached Network Color Printer

Use this section if the Network Color Printer is parallel-attached to your PC.

When you install a printer, Windows assigns it to a default printer port. Depending on which parallel port you have used to attach the printer to your PC, this may or may not be correct. Go through the following steps to make sure that you are using the correct port.

To select a printer port:

1. From the Main window, double-click on the Control Panel icon. The Control panel window is displayed.

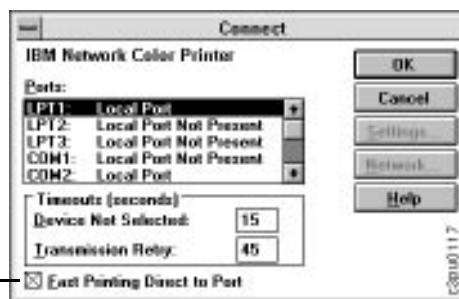


2. In the Control Panel window, double-click on the Printers icon. The Printers window is displayed.



3. In the Printers window, select the IBM Network Color Printer in the Installed Printers list box. Click on the Connect button.

The Connect window is displayed.



Select Fast Printing

4. Select the LPT port that identifies the parallel port to which you attached the Network Color Printer.
5. Click on the OK button. The Printers window appears again, with the selected port next to the highlighted printer name in the Installed Printers list box. The printer driver is installed and connected.

See the next section “Setting the Default Print Options.”

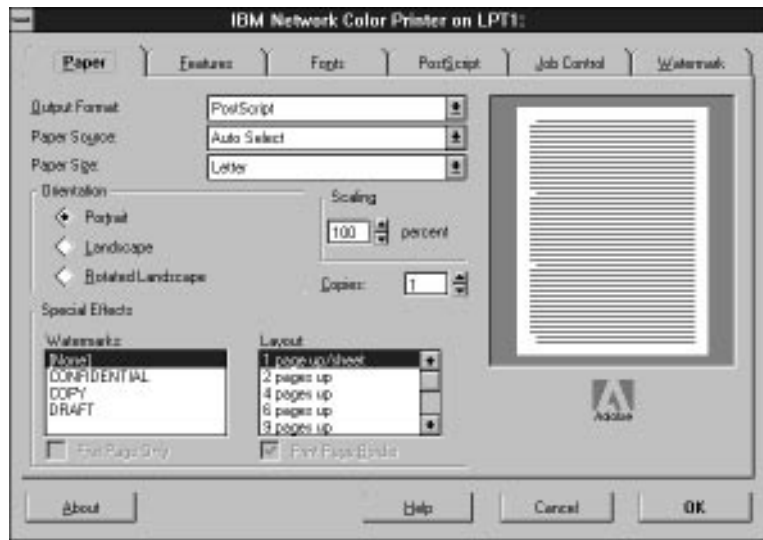
Setting the Default Print Options

Use this sections to set the default print options that your jobs will use when going to the IBM Network Color Printer.

To set the default print options:

1. Click on the Setup button. The IBM Network Color Printer window is displayed, with the Paper setup page at the front.
2. Select values for the settings on the setup page.

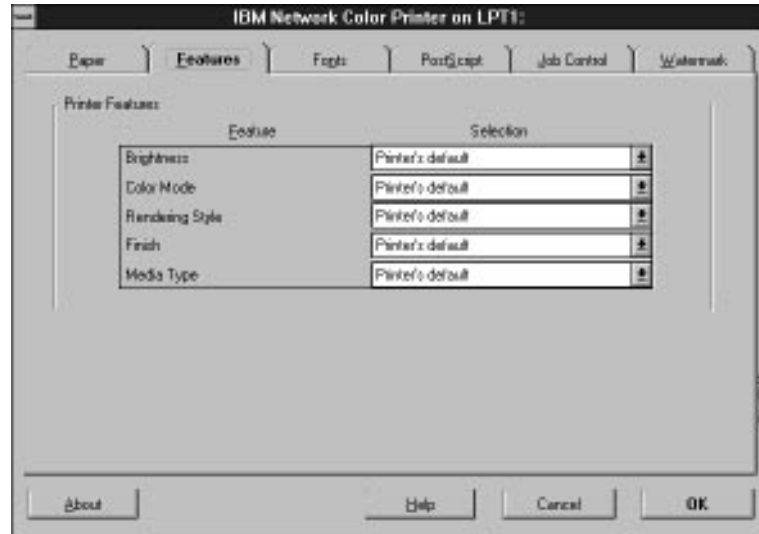
Note: The settings you choose here will be your default job settings. However, many applications allow you to override these settings when you print.



Select these values for the settings:

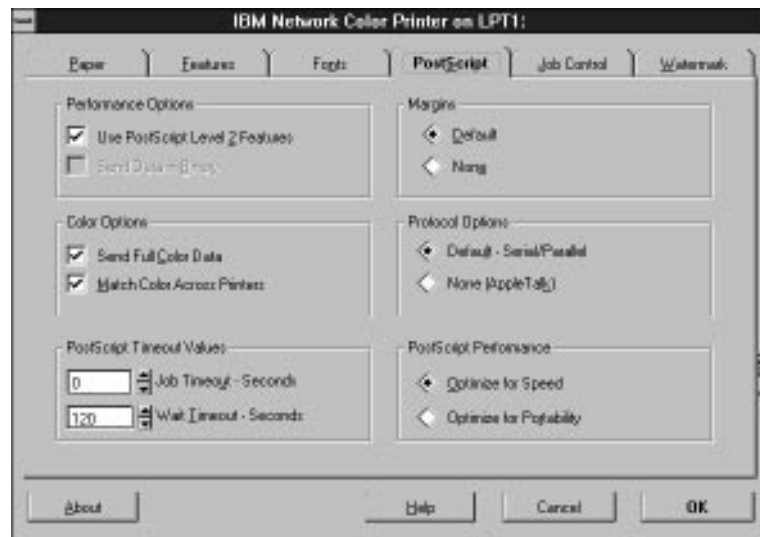
- For Output Format, choose PostScript.
- For Paper Source, choose Auto Select to automatically switch between Tray 1 and Tray 2.
- For the other options, choose the settings that are right for the majority of your jobs.

3. Click on the Features tab to set printing options. The Features page is displayed.



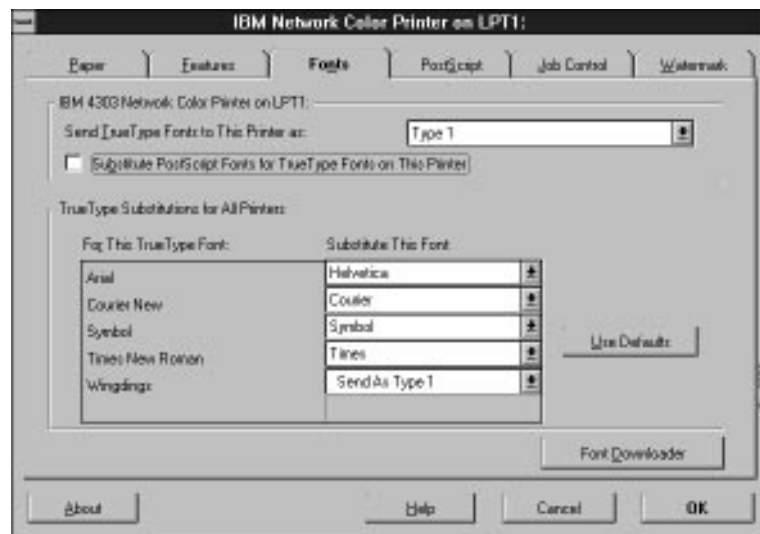
4. For the Features options, use these settings:
 - Leave the Brightness option set to Printer's Default.
 - Set the Color Mode option to CMYK.
 - For the Rendering Style option, choose between these settings:
 - Photographic** - choose this setting if you mostly print bitmap images, such as screen captures, scanned photographs, and images created with paint applications.
 - Presentation** - choose this setting if you mostly print presentations and other documents containing highly saturated color fills.
 - Monitor** - choose this setting to get a print that approximates the way the document appears on a monitor screen.
 - Solid Color** - choose this setting if you mostly print images with spot colors, such as company logos.
 - For the Finish option, choose Standard. If you are using heavier paper and you notice that the toner is not fusing well, choose the Glossy setting.
 - Note:** Choosing Glossy affects printer speed. The fuser must heat up for each Glossy job and then cool back down for each Standard job.
 - For the Paper Type option, choose the media you print with most frequently. The choices are Plain Paper and Transparency.

5. Click on the PostScript tab. The PostScript page appears.



- Under Performance Options, select Use PostScript Level 2 Features.
- Under Color Options, select Send Full Color Data and Match Color Across Printers.
- Under PostScript Performance, select Optimize for Speed.
- Leave the other options at the default settings.

6. Click on the Fonts tab. The Fonts page appears.



7. On the Fonts page make your selection based on the following information:
 - If your jobs typically use PostScript fonts and it is important to you that when you do use True Type fonts they print *exactly*, select Send TrueType Fonts as Type 1. Do not select Substitute PostScript Fonts.
Note: When a TrueType font is downloaded, the amount of time it takes to print increases.
 - If your jobs use many True Type fonts, select Substitute PostScript Fonts for TrueType Fonts. Instead of printing the TrueType fonts in your documents, the printer uses similar Post Script fonts stored on the printer hard disk. This greatly decreases the amount of time it takes to transfer your jobs to the printer.
8. Click on the OK button to exit the setup pages.

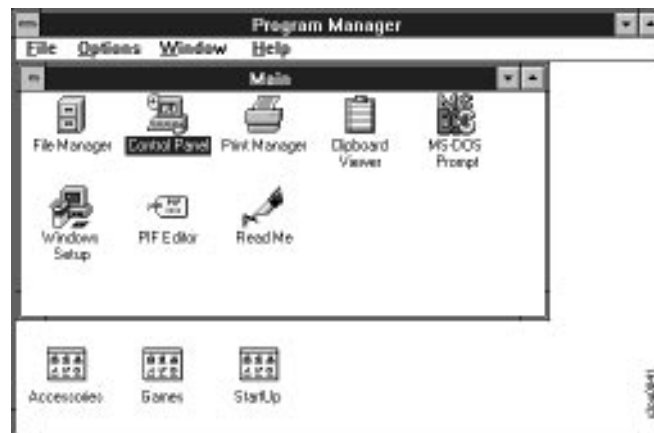
To make the IBM Network Color Printer your default printer, see the next section “Setting Your Default Printer.”

Setting Your Default Printer

You can specify the Network Color Printer as the default printer. It is important to set a default printer, because from many Windows applications the default printer is the only one you can use.

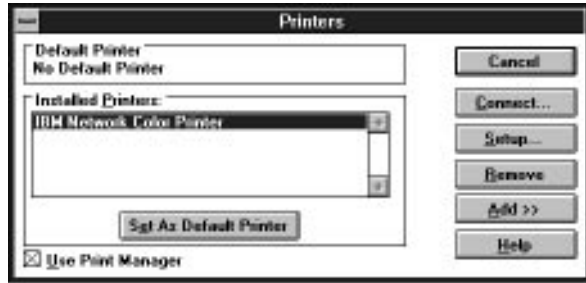
To set the default printer:

1. From the Main window, double-click on the Control Panel icon. The Control Panel window is displayed.



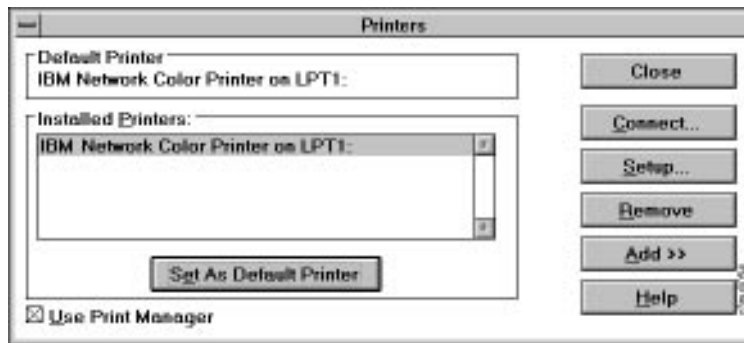
2. In the Control Panel window, double-click on the Printers icon.

The Printers window appears.



3. In the Printers window, select the IBM Network Color Printer in the Installed Printers list box.
4. Click on the Set As Default Printer button.

The IBM Network Color Printer appears in the Default Printer area of the Printers window.



Installing Additional Printer Description Files

The *Customer CD-ROM* contains printer description files for popular Windows applications. QuarkXPress and PageMaker do not support automatic installation of printer description files from the Printers Control Panel. To make the printer available in the Print and Page Setup dialog boxes of these applications, copy printer description files to the appropriate location as shown in the table in this section.

To install additional printer description files:

1. In the Windows File Manager, double-click on the icon for the CD-ROM drive to display the contents of the *Customer CD-ROM*.
2. Open the directory:
language\WINDOWS\DRIVERS
where *language* is the language you use.
3. If you use PageMaker, double-click on the PSLEV2 directory; if you are using QuarkXPress, double-click on the APPS directory.
4. Copy the printer description files to the appropriate locations.

If you use:	Copy this file:	To this location:
PageMaker 5.x (PageMaker 6.x Does not need any special treatment.)	IBM 43031.PPD	\ALDUS\USENGLISH\PPD4
QuarkXPress 3.1	IBM 4303.PDF	The QuarkXPress home directory, usually \XPRESS
QuarkXPress 3.3 or later	IBM 4303.PDF	The PDF folder, usually \XPRESS\PDF

Installing and Printing the Color Reference Pages

Use this section to install and print the color reference pages that came with your printer. The following table shows the items that are included on the *Customer CD-ROM*.

Color Reference Files	The Color Reference files are PostScript files that you can print using the lpr or COPY command. Printing these files enables you to view the range of colors available on your printer. <ul style="list-style-type: none">• From the CMYK pages you can choose CMYK color percentages and use them to define colors in the files that you create.• From the PANTONE pages you can choose named PANTONE colors and specify them in your documents. The colors will print in your documents the same as they print on the color reference pages.
IBM Color Downloader Utility	This utility is not supported for Windows 3.1x.
IBM Color Spooler Utility	This utility is not supported for Windows 3.1x.
Fiery Calibrator Utility	This utility is not supported for Windows 3.1x (Macintosh only.)

Note: Exit all your Windows programs before you begin the installation process.

To install the color reference pages:

1. In the Main window, open the File Manager.
2. Optional: create a directory in which to keep the files. By default the installer creates a directory called IBMcolor, or you can use an already-existing directory. If you would like to create a directory:
 - a. Click on the button for the hard disk on your PC in which you want to store the files.
 - b. From the File menu, choose the Create Directory command.
 - c. Enter a name for the directory.
 - d. Click on the OK button.
3. Click on the button for the CD-ROM drive. The contents of the *Customer CD-ROM* are displayed.
4. Open the folder that corresponds with your language. The UTILS and DRIVERS directories are displayed.

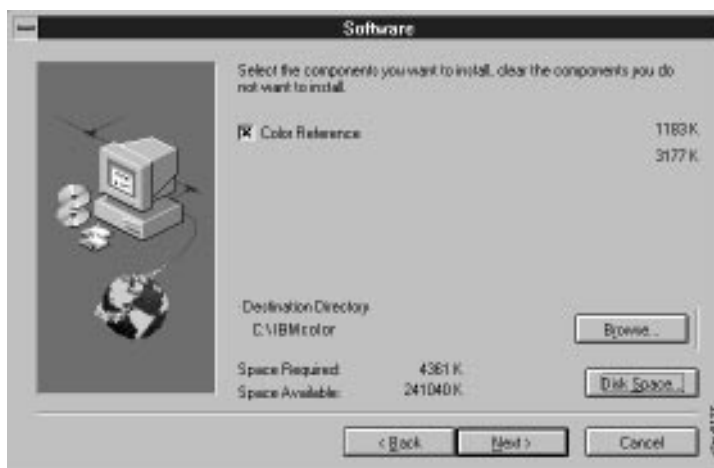
- Open the UTILS directory to display its contents.



- Double-click on the SETUP.EXE file to run it. A status bar displays as the SETUP program begins. Then the SETUP program Welcome window is displayed.



- Click on the Next button. The next window is displayed.



- If you do not want the installer to create and use a directory called IBMcolor, click on the Browse button and browse to the location of the directory you created in step 2. Select Color Reference to install the color reference pages, and click on

the Next button to go on to the Start Copying Files window.



9. Review the choices you made.

Do one of the following:

- If everything looks correct, click on the Next button and go on to the next step. A status bar is displayed.
- If you want to make changes, click on the Back button to return to previous screens.

You have finished installing the Color Reference files. You will find the files in the IBMcolor directory or in the directory that you specified. The files are as follows:

- CMYK_REF.PS shows color patches and tells you the percentages of cyan, magenta, yellow and black toner used to generate each patch.
- PANTONEC.PS has named PANTONE Coated color patches. It shows how these colors print on the IBM Network Color Printer.
- PANTONEU.PS has named PANTONE Uncoated color patches. It shows how these colors print on the IBM Network Color Printer.

To print the Color Reference Pages:

You can print the PostScript files using the **lpr** or **copy** commands.

- If your PC is parallel-attached to the printer, use the **copy** command. For example, use the command:

```
copy Filename Port
```

where *Filename* is the name of the PostScript Color Reference file and *Port* is the port on your PC to which the printer is connected.

- If your PC and the printer are TCP/IP-connected, use the **lpr** command. For example, use the command:

```
lpr -Sserveraddress -Pibmcolor_print Filename
```

where *serveraddress* is the TCP/IP address of the printer, and *Filename* is the name of the PostScript Color Reference file. Notice that this example specifies *ibmcolor_print*, the TCP/IP name of the Print queue.

Installing the Documentation Files and Acrobat Reader

This section explains how to copy the Network Color Printer documentation files and install Adobe Acrobat Reader from the *Customer CD-ROM* to your hard disk.

You can install the files and reader using either of two methods: using File Manager menus or using the Windows icons. This section describes the method that uses the File Manager menus. Refer to your Windows documentation for instructions on installation using Windows icons.

Note: The Network Color Printer documentation is provided in softcopy on the *Customer CD-ROM* only; softcopy versions of the documentation are not included on the diskettes.

To install Acrobat Reader:

1. From the Program Manager window, click on the File menu.
2. Click on the Run... menu item. The Run window is displayed. This window contains an empty Command Line box.
3. Click on the Browse button. The Browse window is displayed.
4. In the Drives box of the Browse window, select your CD-ROM drive. The contents of the CD-ROM are displayed in the Directories box.
5. Select the directory for the language in which you wish to work. The contents of the language directory are displayed in the box.
6. Select DOCS\ACROBAT\WINDOWS\DISK1. The contents of this directory are displayed in the box.
7. Select the file SETUP.EXE, and click on the OK button. You are returned to the Run window. In this window, the directory path showing all of the selections you just made is displayed.
8. Click on the OK button. The Acrobat Reader Installer window appears. This window contains license agreement text for Acrobat Reader.
9. Click on the Accept button to agree to the terms and continue installation of the reader. Once you have accepted the license agreement, the Acrobat Reader Installer window shows information about available space on your hard disk and asks you to specify the target directory for Acrobat Reader files. If you do not specify otherwise, the default value is C:\ACROREAD.
10. Specify the target directory for the reader files, then click on the INSTALL button. A second Acrobat Installer window appears which asks you to personalize your copy of the reader by providing user information.
11. Enter your user information into the text boxes provided, and click on the OK button. The Acrobat Reader code is installed on your hard disk. A progress bar is displayed during installation.

You have completed installation of Adobe Acrobat Reader.

To install the documentation:

1. Open the Windows File Manager.
2. Click on the button for the CD-ROM drive to display the contents of the *Customer CD-ROM*.
3. Open the directory for the language in which you wish to work. The contents of the language directory are displayed.
4. Open the DOCS directory. The contents of this directory are displayed, including the documentation files.
5. From the Window menu, choose New Window. Click on the button for the drive on which you installed Adobe Acrobat Reader.
6. You now have two windows open in the File Manager: one shows the contents of the DOCS directory on the CD-ROM and the other shows the contents of the drive on which Acrobat Reader is installed.
7. Decide where on the hard disk you want to keep the documentation files. Click on the documentation files that you want to install. Shift-click to select multiple files. Click and drag the selected documentation files from the CD-ROM window to your chosen location on the hard disk.
8. A message displays asking if you want to copy the selected files to the new location. Click on the Yes To All button. A status message displays as the files are copied.

You have installed the documentation files. See "Accessing the Documentation Files using Acrobat Reader" for instructions on using Acrobat Reader to view the documentation files.

Accessing the Documentation Files using Acrobat Reader

This section explains how to open your softcopy documentation files using Acrobat Reader. For information on how to navigate within the files, refer to the help file provided with the reader.

To view the documentation using Acrobat Reader:

1. From the Program Manager window, double-click on the Adobe Acrobat group icon. The Adobe Acrobat (Common) window is displayed.
2. Double-click on the Acrobat Reader icon. The File Open window is displayed.
3. Browse to select the book you wish to open, then click on OK. The softcopy book is opened and displayed on your screen.
4. To view a hyperlinked list of headings, choose Bookmarks and Page from the View menu.
5. To go to the page that a heading is on, click on the heading in the list of bookmarks.
6. To go to the page that a cross reference refers to, click on the cross reference.
7. To print the book, choose Print from the File menu.

Chapter 5. Configuring Windows NT to Use the IBM Network Color Printer

This chapter describes how to install the user software and set up printing on your Windows NT workstation. The general steps are:

- Install and configure the printer driver and printer description files.
- Set your default printer.
- Set default print options.
- Install the utilities and color reference pages.
- Configure your PC to run the utilities.
- Install the documentation files and Adobe Acrobat Reader.

The software for the IBM Network Color Printer is provided on the *Customer CD-ROM* that shipped with the printer. Except for the color reference pages and the documentation, all of this is also available on the diskettes that shipped with the printer.

Installing the Printer Driver

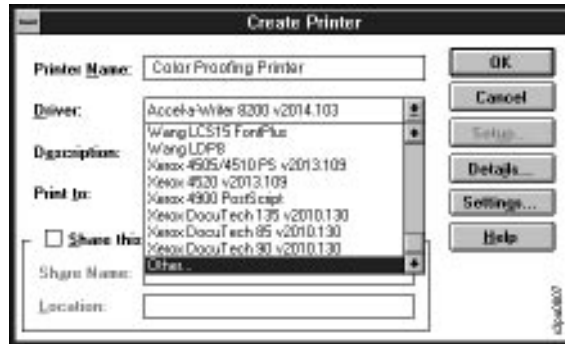
To set up the Network Color Printer as a PostScript printer, you need to install the PostScript Level 2 Printer Driver included on the *Customer CD-ROM*. This allows you to take advantage of PostScript Level 2 features such as CMYK color.

To install the Printer Driver:

1. In Program Manager, click on the Main group icon. The Main window is displayed.
2. In the Main window, double-click on the Print Manager icon. The Print Manager window is displayed.



- Click on the Printer pull-down menu, then click on the Create Printer... menu item. The Create Printer window is displayed.



- Enter a name for the printer in the Printer Name text box. Click on the arrow at the right of the Driver box. A scrollable list of drivers appears.
- Scroll to the end of the list and select Other... by clicking on it. Then click on the OK button. The Install Driver window is displayed.



- Insert either the *Customer CD-ROM* or the driver diskette into a drive, or type in the network drive or local drive in which the CD or diskette resides.
- Enter the full directory path to the directory that contains the driver:
 - If you are installing from diskette, insert the IBM Network Color Printer Windows Drivers diskette and enter the name of the drive containing the diskette. For example, if the diskette is in your A drive, enter A:\
 - If you are installing from the *Customer CD-ROM*, enter the CD-ROM drive, your language, your operating system, DRIVERS and your PC type.

For example, if the *Customer CD-ROM* is in drive D, you use English and have an Intel 386 processor, this is the directory path:

D:\ENGLISH\WINNT\DRIVERS\I386

If the CD is in drive M, you use Spanish and have a Power PC, this is the directory path:

M:\ESPAÑOL\WINNT\DRIVERS\PPC

- After you have specified the directory path, click on the OK button. The Create Printer window is displayed again. In the Driver box, the IBM Network Color Printer printer driver is selected.



You have installed the IBM Network Color Printer printer driver. For instructions on setting up the driver, continue to the next section.

Setting Up the Printer Driver

Use this section to set up the IBM Network Color Printer printer driver now that you have installed it. This section contains information on connecting to the printer, setting the printer as your default, and choosing print options.

- To connect if the printer is parallel-attached, see the next section, “Connecting to a Parallel-attached IBM Network Color Printer.”
- To connect if the printer is on the network, see “Connecting to the Printer if It is Network-attached” on page 5–6.
- When you are connected to the printer, see “Connecting to the Printer if It is Network-attached” on page 5–6.

Connecting to a Parallel-attached IBM Network Color Printer

Use this section if the printer is parallel-attached to your NT workstation. If the printer is network-attached, skip this section and go on to “Connecting to the Printer if It is Network-attached” on page 5–6.

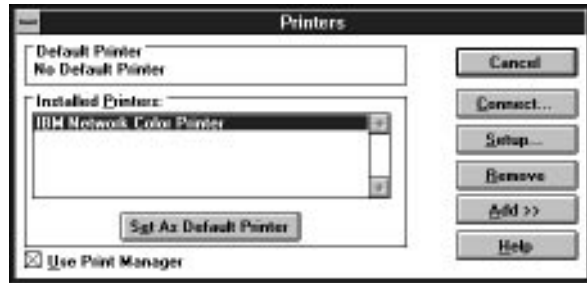
When you install a printer, Windows assigns it to a default printer port. Depending on which parallel port you have used to attach the printer to your PC, this may or may not be correct. Go through the following steps to make sure that this is the correct port for your parallel-attached printer.

To select a printer port:

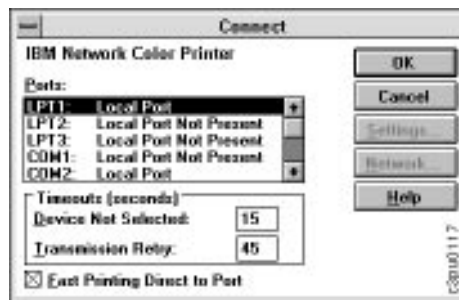
1. From the Main window, double-click on the Control Panel icon. The Control Panel window is displayed.



- In the Control Panel window, double-click on the Printers icon. The Printers window is displayed.



- In the Printers window, select the Network Color Printer in the Installed Printers list box. Click on the Connect button. The Connect window is displayed.



- Select the LPT port that identifies the parallel port to which you attached the IBM Network Color Printer.
- Click on the OK button. The Printers window appears again, with the selected port next to the highlighted printer name in the Installed Printers list box.

The printer driver is installed and connected. See the next section “Choosing Print Options” on page 5–9.

Connecting to the Printer if It is Network-attached

If the printer is network-attached, you can connect to it directly using either the TCP/IP or AppleTalk communication protocol. However, your network administrator may have created a queue for the printer on a network server. Before you continue with this section, ask your network administrator how he or she would prefer you to connect to the printer—directly or using a network server queue. If your administrator wants you to connect to a network server queue, get instructions from him or her.

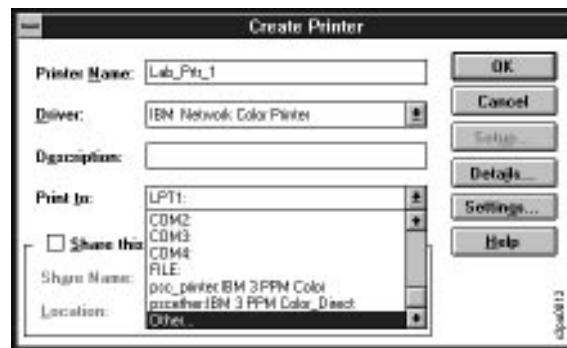
The following procedures contain information on attaching directly to the printer either using TCP/IP or using AppleTalk. These protocols come with the Windows NT operating system and must be installed before you can use them. See the documentation that came with your operating system for instructions.

To connect to the printer using AppleTalk, see the following section. To connect to the printer using TCP/IP, see “To connect to the printer using TCP/IP” on page 5–7.

To connect to the printer using AppleTalk:

If the Create Printer window that you used to install the IBM Network Color Printer driver is still displayed on your screen, skip the first two steps and go to step 3.

1. In the Main window, double-click on the Print Manager icon. The Print Manager window opens and displays the icon for the IBM Network Color printer.
2. Click on the printer to select it, and click on the Properties button.
3. In the Print to text box, click on the arrow at the right of the box. A scrollable list of ports is displayed.



4. Scroll to the end of the list and click once to select Other.... The Print Destinations window is displayed.



5. Click on the OK button to select the default, AppleTalk Printing Devices.

The Available AppleTalk Printing Devices window is displayed.



- If your network has zones, the window contains a list of the zones. Double-click to open the zone in which the printer is attached. A list of the AppleTalk devices in that zone is displayed.
 - If your network does not have zones, the window contains a list of the AppleTalk devices on your network.
6. Click on the printer, then click on the OK button. The Capture dialog box is displayed. The Capture dialog box asks if you want to capture the device.
 7. Click on the NO button.

Note: Do not capture the printer. If you do, the printer will be hidden from the other network users.

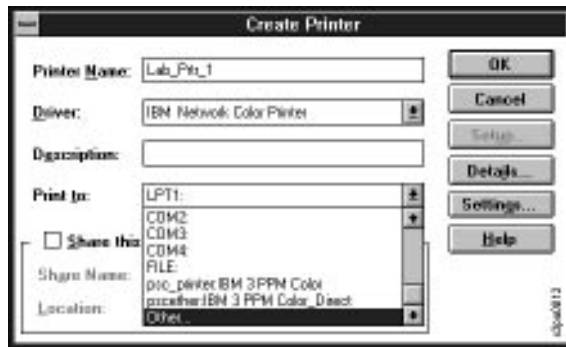
You have completed the steps for connecting to the Network Color Printer using AppleTalk.

To connect to the printer using TCP/IP:

If the Create Printer window that you used to install the IBM Network Color Printer driver is still displayed on your screen, skip the first two steps and go to step 3.

1. In the Main window, double-click on the Print Manager icon. The Print Manager window opens, and displays the icon for the IBM Network Color printer.
2. Click on the printer to select it, and click on the Properties button.
3. In the Print to text box, click on the arrow at the right of the box.

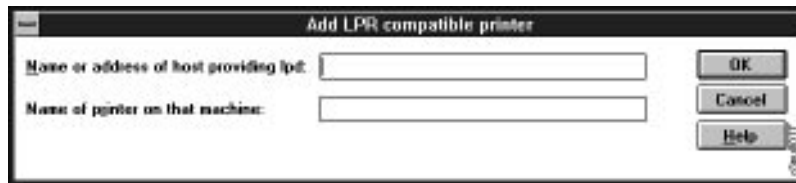
A scrollable list of ports is displayed.



Scroll to the end of the list and click once to select Other.... The Print Destinations window is displayed.



4. Click once to select LPR Port, then click on the OK button. The Add LPR compatible printer window is displayed.



5. In the first text field, enter the name or the TCP/IP address that your network administrator provided. In the second field, enter one of the TCP/IP queues. They are:

- ibmcolor_print
- ibmcolor_direct
- ibmcolor_hold

Important: These are the permanent TCP/IP queue names. They are not configurable and unlike the AppleTalk queue names they do not change when the printer name is changed.

Notes:

1. IBM recommends that you use ibmcolor_print as this will place your jobs in the Print queue on the printer. This reduces the amount of time your PC spends spooling the job. If for security reasons your jobs should not be stored even temporarily on the printer hard disk, choose ibmcolor_direct. The Hold queue is not recommended, as jobs in the Hold queue do not print until moved to the Print queue with the Spooler utility.
2. These instructions also apply if you are connecting to a printer driver installed on a server. However, in this case, your administrator must give you both the both the server address and the queue name.

Setting Your Default Printer

Use this section to set the IBM Network Color Printer as your default.

To set the default printer:

1. In the Program Manager, click on the Main group icon. The Main program group window is displayed.
2. In the Main program group window, double-click on the Print Manager icon. The Print Manager window is displayed.



3. In the Default text box at the top of the window, click on the down arrow to display the choices. Select IBM Network Color Printer to make it your default.

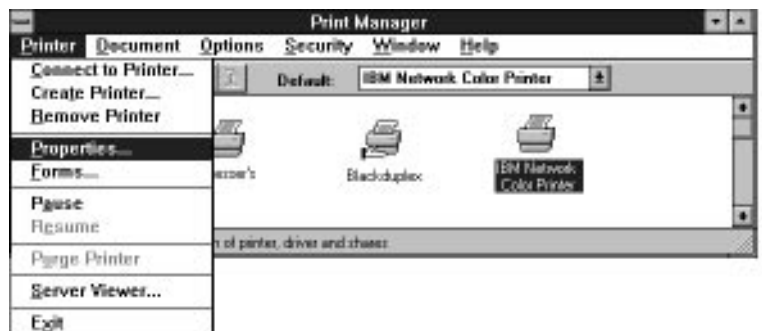
You are finished setting the default printer.

Choosing Print Options

Use this section to set the default options your jobs will use when sent to the IBM Network Color Printer.

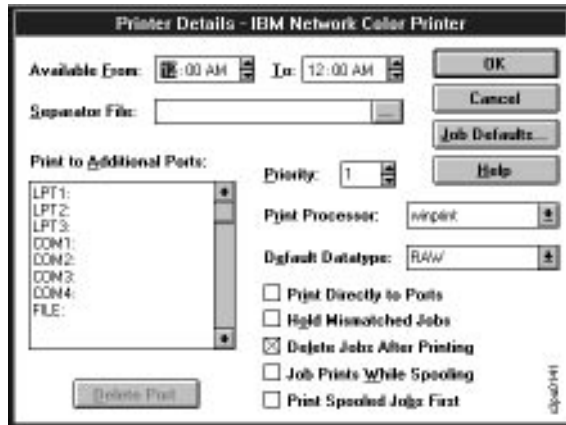
To set the default print options:

1. In Program Manger, double-click on the Main group icon. The Main program group window is displayed.
2. In the Main program group, double-click on the Print Manager icon. The Print Manager window appears.



3. Click on the IBM Network Color Printer to select it.
4. From the Printer menu, choose Properties. The Printer Properties window is displayed.

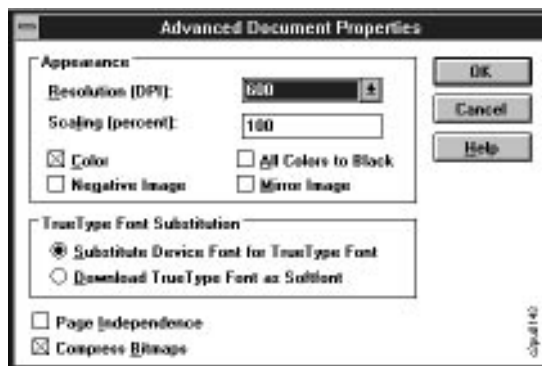
- Click on the Details button. The Printer Details window for the IBM Network Color Printer is displayed.



- Click on the Job Defaults button. The Document Properties window is displayed.



- Select the paper size on which you typically print. Be sure that this is a paper that is kept loaded in the printer. If you submit a job that requests a paper size that is not loaded, the printer attention light will flash and the printer will request that the paper needed for your job be loaded.
- Select the orientation that your jobs typically use.
- Click on the Options button to set additional print options. The Advanced Document Properties window is displayed.



10. Under True Type Font Substitution, make your selection based on the following information:
 - If your jobs typically use PostScript fonts and it is important to you that when you do use True Type fonts they print *exactly*, select Download TrueType fonts as Softfont.
Note: When a True Type font is downloaded, the amount of time it takes to print increases.
 - If your jobs use many True Type fonts, select Substitute Device Font for True Type Font. Instead of printing the True Type fonts in your documents, the printer uses similar Post Script fonts stored on the printer's hard disk. This greatly decreases the amount of time it takes to transfer your jobs to the printer.
11. Leave the other settings at the default values and click on the OK button.
12. To finish and save changes, click on the OK button in each window.

You have completed the procedure for choosing print options.

Installing the User Software on Windows NT

Use this section to install the user software and color reference pages that came with your printer. This section covers three procedures:

- Using the installer to install the utilities.
- Editing the NET_WSCK.INI file. (This procedure is not necessary if your administrator provides you with an already-customized file.)
- Editing the...\\ETC\\HOSTS file to add the TCP/IP address of the printer.

Before you begin, do these things:

- Get the printer's TCP/IP address from your administrator.
- If your administrator is providing it to you, get the customized NET_WSCK.INI file.

The following table shows the software that is included on the *Customer CD-ROM*. All of this software except for the CMYK and PANTONE Color Reference pages is also on diskette.

IBM Color Downloader Utility	This utility enables you to print PostScript and Encapsulated PostScript files directly to the printer without using the application in which the files were created. The Downloader also enables you to manage the printer fonts installed on the printer.
IBM Color Spooler Utility	This utility enables you to view the order of print jobs, customize printer settings for jobs, delete jobs, and move jobs between queues. You can also use it to see what jobs the printer has completed.
Fiery Calibrator Utility	Not supported for Windows; Macintosh only.
Color Reference pages	These are PostScript files that you can print using the Downloader utility or the lpr or COPY commands. Printing these files enables you to view the range of colors available on your printer. From the CMYK pages you can choose CMYK color percentages and use them to define colors in the files that you create. From the PANTONE pages you can choose named PANTONE colors and specify them in your documents. The colors will print in your documents the same as they print in the Color Reference pages.

Use different procedures for installing software depending on whether you are installing from CD-ROM or diskette:

- If you are installing from diskette, see "Installing the User Software from Diskette" on page 5–17.
- If you are installing from the *Customer CD-ROM*, see the following section, "Installing the User Software from the Customer CD-ROM".

Installing the User Software from the *Customer CD-ROM*

Use this section to install the user software on your Windows NT PC from the *Customer CD-ROM*.

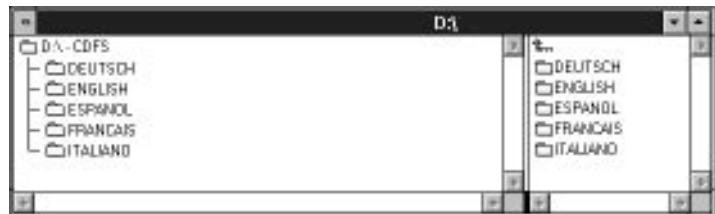
Before you begin...

- Exit all your Windows programs.
- Make sure that TCP/IP is installed and working.

Follow the procedure below to install the software.

To install the utilities and color reference page from CD-ROM:

1. In the Program Manager, double-click on the Main group icon. The Main window is displayed.
2. In the Main window, open the File Manager. The File Manager appears.
3. Click on the button for the hard disk on which you want to store the files.
4. Create a directory in which to keep the files. This step is optional. You can also allow the installer to create a directory for you called IBMcolor or use a different, already-existing directory. If you would like to create a directory:
 - a. From the File menu choose the Create Directory command.
 - b. Enter a name for the directory.
 - c. Click on the OK button.
5. Click on the button for the CD-ROM drive. The contents of the *Customer CD-ROM* are displayed.



6. Open the directory that corresponds with your language. Open the directory that corresponds with your operating system. Open the UTILS directory to display its contents.



7. Double-click on the SETUP.EXE file to run it. A status bar displays as the SETUP program begins. Then the SETUP program Welcome window is displayed.



8. Click on the Next button. The next window is displayed.



9. If the default directory shown is not the directory in which you want the files to be stored, click on the Browse button and browse to the correct directory location.

Select Utilities and Color Reference to install the IBM Color Downloader utility, the IBM Color Spooler utility, and the color reference pages.

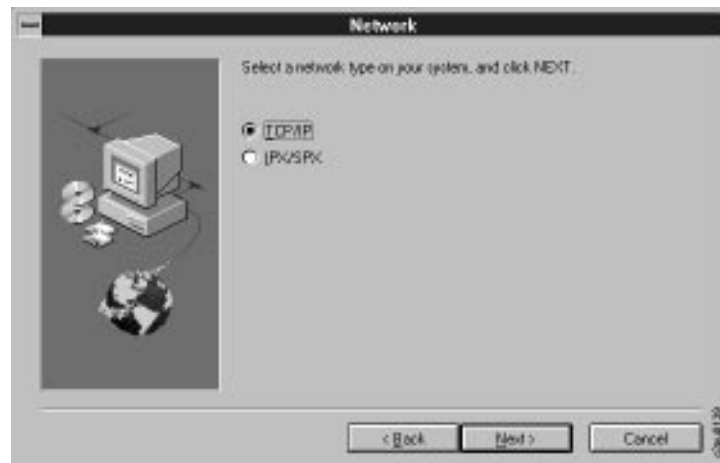
Click on the Next button to go on to the next window.



10. Do one of these things:

- Accept the default program-group name of IBM Network Color Printer.
- Enter a different name.
- Select one of your existing program groups. This will place the utilities icons in that group.

Click on the Next button. The next installer screen is displayed.

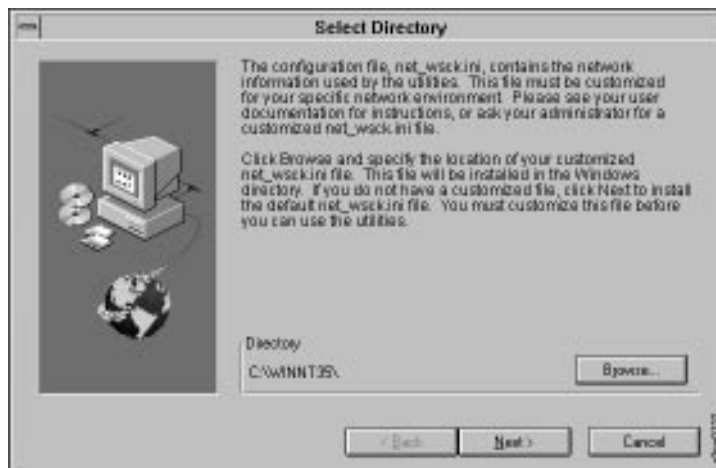


11. Select TCP/IP. Click on the Next button.

The next installer screen is displayed.

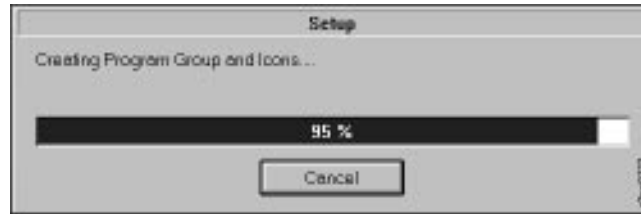


12. Review the choices you made. Do one of the following things:
 - If everything looks correct, click on the Next button and go on to the next step. A status bar is displayed.
 - If you want to make changes, click on the Back button and return to previous screens.
13. After the status bar finishes, the next screen is displayed. This screen discusses the NET_WSCK.INI file.



14. Do one of these things:
 - Click on the Browse button and browse to the location of the customized NET_WSCK.INI file your administrator gave you.
 - Click on the Next button to install the default file. In this case, you *must* customize this file before you can use the utilities. Instructions for customizing the file follow this section, in "To customize the NET_WSCK.INI file" on page 5–21.

15. After you have either located and selected a customized file or decided to use the default file, click on the Next button. A status bar is displayed as the SETUP program creates the Program Group and the utilities icons.



You have completed this segment of the installation process. What you do next depends on whether you installed a customized file or the default file in step 14:

- If you installed a *customized* NET_WSCK.INI file provided by your administrator, your next step is to edit the `... \ETC\HOSTS` file and add the printer's TCP/IP address. After you have done this, you will be finished with the installation process. To edit the `... \ETC\HOSTS` file, see "Editing the `... \ETC\HOSTS` File" on page 5–23.
- If you installed the *default* NET_WSCK.INI file, you must customize the file before you can use the utilities. See "Customizing the NET_WSCK.INI file for Your Windows NT PC" on page 5–21. After doing this, you will edit the `... \ETC\HOSTS` file and add the printer's TCP/IP address.

Installing the User Software from Diskette

Use this section to install the user software on your Windows NT PC from diskette. The Color Reference pages are on the *Customer CD-ROM* only.

Before you begin...

- Exit all your Windows programs.
- Make sure that TCP/IP is installed and working.

To install the utilities from diskette:

1. In Program Manager, double-click on the Main group icon to open it. The Main window is displayed.
1. In the Main window, open the File Manager. The File Manager appears.
2. Click on the button for the hard disk on which you want to store the files.
3. Create a directory in which to keep the files. This step is optional. You can also allow the installer to create a directory for you called IBMcolor, or use a different, already-existing directory. If you would like to create a directory:
 - a. From the File menu choose the Create Directory command.
 - b. Enter a name for the directory.
 - c. Click on the OK button.

4. Insert the IBM Color Downloader diskette into your diskette drive and click on the button for that drive. The contents of the diskette are displayed.



5. Double-click on the SETUP.EXE file to run it. A status bar displays as the SETUP program begins. Then the SETUP program welcome window is displayed.

Note: Later in the installation process, the installer will ask you for the Spooler diskette. When this occurs, eject the Downloader diskette and insert the Spooler Diskette.



6. Click on the Next button. The next window is displayed.



7. If the directory shown is not the directory in which you want the files to be

stored, click on the Browse button and browse to the location of the directory you created in step 4.

Select Utilities to install the IBM Color Downloader utility and the IBM Color Spooler utility.

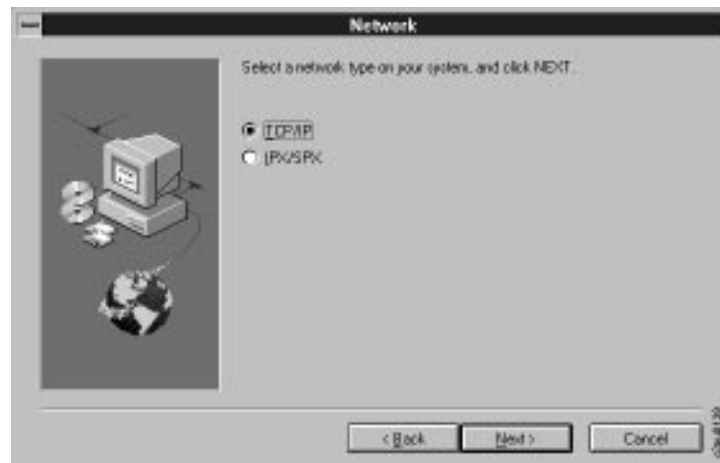
Click on the Next button to go on to the next window.



8. Do one of the following:

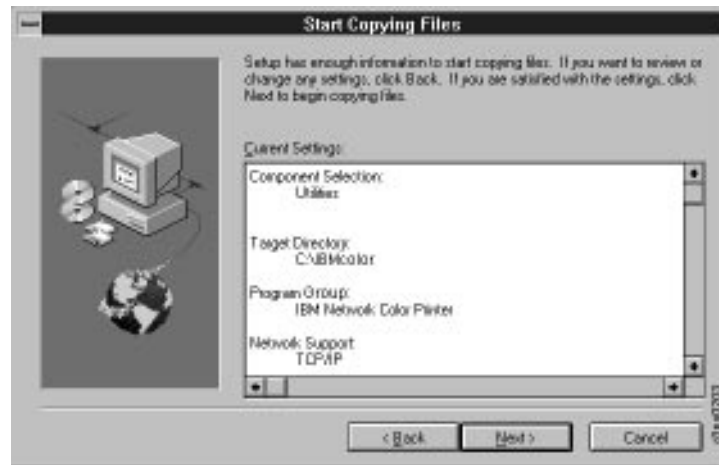
- Accept the default program-group name of IBM Network Color Printer.
- Enter a different name.
- Select one of your existing program groups. This will place the utilities icons in that group.

9. Click on the Next button. The next installer screen is displayed.



10. Select TCP/IP. Click on the Next button.

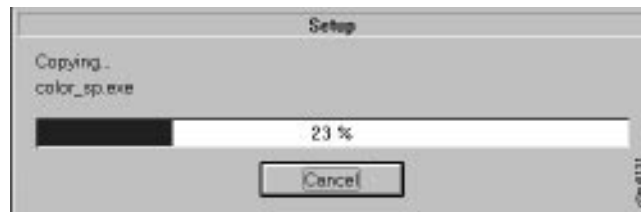
The next installer screen is displayed.



11. Review the choices you made.

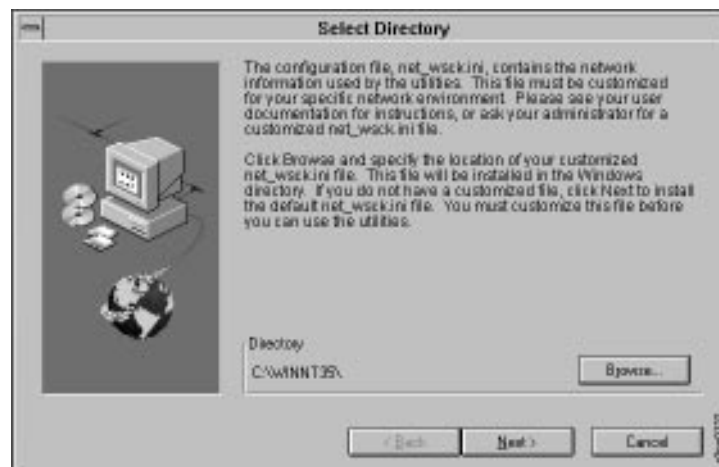
Do one of the following:

- If everything looks correct, click on the Next button and go on to the next step. A status bar is displayed.



- If you want to make changes, click on the Back button and return to previous screens.

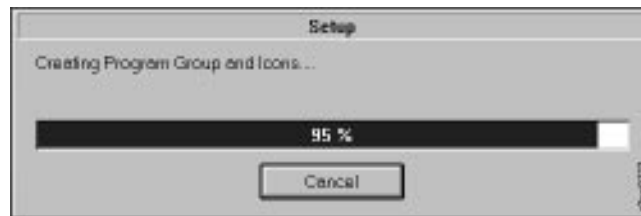
12. After the status bar finishes, the next screen is displayed. This screen discusses the NET_WSC.INI file.



13. Do one of the following:

- Click on the Browse button and browse to the location of the customized NET_WSCK.INI file your administrator gave you.
- Click on the Next button to install the default file. In this case, you *must* customize this file before you can use the utilities. Instructions for customizing the file follow this section, in “To customize the NET_WSCK.INI file” on page 5–21.

After you have either located and selected a customized file or decided to use the default file, click on the Next button. The SETUP program displays a status bar as it creates the Program Group and the utilities icons.



You have completed this segment of the installation process. What you do next depends on whether you installed a customized file or the default file in step 14:

- If you installed a *customized* NET_WSCK.INI file provided by your administrator, your next step is to edit the ...\\ETC\\HOSTS file and add the printer's TCP/IP address. After you have done this, you will be finished with the installation process. To edit the ...\\ETC\\HOSTS file, see “Editing the ...\\ETC\\HOSTS File” on page 5–23.
- If you installed the *default* NET_WSCK.INI file, you must customize the file before you can use the utilities. See “Customizing the NET_WSCK.INI file for Your Windows NT PC” on page 5–21. After doing this you will edit the ...\\ETC\\HOSTS file and add the printer's TCP/IP address.

Customizing the NET_WSCK.INI file for Your Windows NT PC

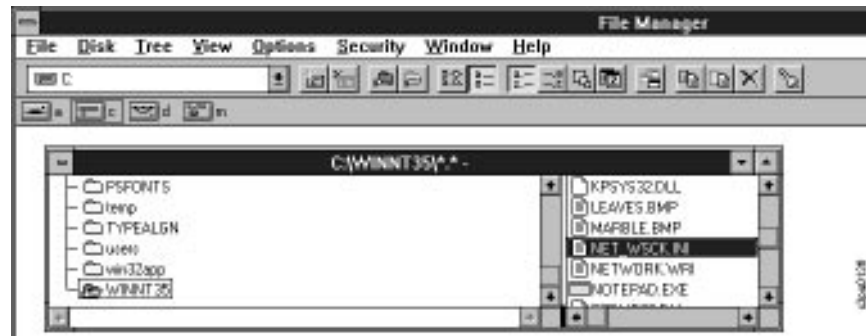
Follow the instructions in this section if you did not install an already-customized file when you installed the utilities.

To customize the NET_WSCK.INI file:

1. Open the File Manager.
2. Click on the button of the drive on which the Windows NT operating system is installed.
3. Open the root Windows directory. Depending on how your Windows NT operating system was installed, the root Windows directory may be called different things. It may be WINDOWS, WINNT, or WINNT35.

The icon for the root Windows directory is a hand holding a folder.

This is in contrast to the other directory icons, which are just folders.



4. Find the NET_WSCK.INI file and double-click on it to open it with the Notepad application.

The top lines in the file are as follows:

```
;IBM Windows '95 IPX/SPX Utilities and Windows NT TCP/IP Utilities

;The NET_WSCK.INI file is used to obtain network information pertaining
;to your printer, necessary for operating the SPX Utilities or TCP/IP
;Utilities. Please print a Config Page from the printer's LCD and read all
;of the following notes before editing this file. For more information
;please refer to the README.TXT file.

[ConfigServers]
Server1=
```

5. Edit the file so that Server1= is followed by the name of the printer. For example, when it is shipped, the name of the printer is "IBMnetcolor". If this is still the printer name, edit the line so that it reads:

```
Server1=IBMnetcolor
```

6. If you will use the utilities with more than one IBM Network Color Printer, add more lines following the Server1 line. These should list the servers in order and include the unique name of each additional printer.

For example:

```
Server2=SecondPrinterName
Server3=ThirdPrinterName
Server4=FourthPrinterName
```

where SecondPrinterName, ThirdPrinterName, and FourthPrinterName are all unique names of different IBM Network Color printers on your network.

7. Save changes and exit the file.

You have completed the customizing the NET_WSCK.INI file. Next, you must edit the ...ETC\HOSTS file to add the printer's TCP/IP address. Then you will be done installing the utilities.

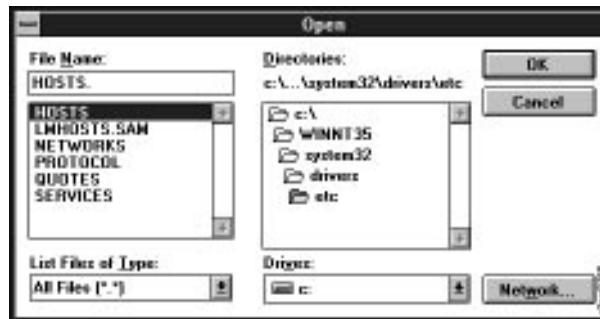
To edit the ...\\ETC\\HOSTS file to add the printer's TCP/IP address, see the following section, "Editing the ...\\ETC\\HOSTS File."

Editing the ...\\ETC\\HOSTS File

Use this section to add the TCP/IP address of the printer to your ...\\ETC\\HOSTS file. This enables the utilities to connect to the printer.

To edit the ...\\ETC\\HOSTS file:

1. From the Main window, open the Accessories program group.
2. Double-click on the icon for the Notepad application.
3. From the File menu, select Open.
4. In the List Files of Type text box, select All Files.
5. Open the root Windows directory. Depending on how your Windows NT operating system was installed, the root Windows directory is called either WINDOWS, WINNT, or WINNT35.
6. Once you have opened the Windows root directory, open these directories: system32, drivers, etc.



7. Select the HOSTS file and click on OK. The file looks similar to this:

```
# Copyright (c) 1993-1995 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows NT.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#       102.54.94.97       rhino.acme.com          # source server
#       38.25.63.10      x.acme.com             # x client host
127.0.0.1                localhost
```

8. In the file, create a new line for each of the IBM Network Color Printers with which you want the utilities to communicate.

On each line you create, put the TCP/IP address of a printer followed by the name of the printer. For example, if the TCP/IP address of the printer is 9.99.43.139 and the name of the printer is still the default name IBMnetcolor, the line should read as follows:

```
9.99.43.139      IBMnetcolor
```

9. Add as many lines as there are IBM Network Color Printers with which you want the utilities to communicate. These names must correspond with the names in the customized NET_WSCK.INI file.
10. Save changes and exit the file.

You have finished installing the utilities. To learn how to use the utilities, see "Using the Utilities" on page 8-1.

Installing the Documentation Files and Acrobat Reader

This section explains how to copy the Network Color Printer documentation files and install Adobe Acrobat Reader from the *Customer CD-ROM* to your hard disk.

You can install the files and reader using either of two methods: using File Manager menus or using the Windows icons. This section describes the method that uses the File Manager menus. Refer to your Windows documentation for instructions on installation using Windows icons.

Note: The Network Color Printer documentation is provided in softcopy on the *Customer CD-ROM* only; softcopy versions of the documentation are not included on the diskettes.

To install Acrobat Reader:

1. From the Program Manager window, click on the File menu.
2. Click on the Run... menu item. The Run window is displayed. This window contains an empty Command Line box.
3. Click on the Browse button. The Browse window is displayed.
4. In the Drives box of the Browse window, select your CD-ROM drive. The contents of the CD-ROM are displayed in the Directories box.
5. Select the directory for the language in which you wish to work. The contents of the language directory are displayed in the box.
6. Select DOCS\ACROBAT\WINDOWS\DISK1. The contents of this directory are displayed in the box.
7. Select the file SETUP.EXE, and click on the OK button. You are returned to the Run window. In this window, the directory path showing all of the selections you just made is displayed.
8. Click on the OK button. The Acrobat Reader Installer window appears. This window contains license agreement text for Acrobat Reader.

9. Click on the Accept button to agree to the terms and continue installation of the reader. Once you have accepted the license agreement, the Acrobat Reader Installer window shows information about available space on your hard disk and asks you to specify the target directory for Acrobat Reader files. If you do not specify otherwise, the default value is C:\ACROREAD.
10. Specify the target directory for the reader files, then click on the INSTALL button. A second Acrobat Installer window appears which asks you to personalize your copy of the reader by providing user information.
11. Enter your user information into the text boxes provided, and click on the OK button. The Acrobat Reader code is installed on your hard disk. A progress bar is displayed during installation.

You have completed installation of Adobe Acrobat Reader.

To install the documentation:

1. Open the Windows File Manager.
2. Click on the button for the CD-ROM drive to display the contents of the *Customer CD-ROM*.
3. Open the directory for the language in which you wish to work. The contents of the language directory are displayed.
4. Open the DOCS directory. The contents of this directory are displayed, including the documentation files.
5. From the Window menu, choose New Window. Click on the button for the drive on which you installed Adobe Acrobat Reader.
6. You now have two windows open in the File Manager: one shows the contents of the DOCS directory on the *Customer CD-ROM* and the other shows the contents of the drive on which Acrobat Reader is installed.
7. Decide where on the hard disk you want to keep the documentation files. Click on the documentation files that you want to install. Shift-click to select multiple files. Click and drag the selected documentation files from the CD-ROM window to your chosen location on the hard disk.
8. A message displays asking if you want to copy the selected files to the new location. Click on the Yes To All button. A status message displays as the files are copied.

You have installed the documentation files. See "Accessing the Documentation Files using Acrobat Reader" for instructions on using Acrobat Reader to view the documentation files.

Accessing the Documentation Files using Acrobat Reader

This section explains how to open, view and print your softcopy documentation files using Acrobat Reader.

To view the documentation using Acrobat Reader:

1. From the Program Manager window, double-click on the Adobe Acrobat group icon. The Adobe Acrobat (Common) window is displayed.
2. Double-click on the Acrobat Reader icon. The File Open window is displayed.
3. Browse to select the book you wish to open, then click on OK. The softcopy book is opened and displayed on your screen.
4. To view a hyperlinked list of headings, choose Bookmarks and Page from the View menu.
5. To go to the page that a heading is on, click on the heading in the list of bookmarks.
6. To go to the page that a cross reference refers to, click on the cross reference.
7. To print the book, choose Print from the File menu.

Chapter 6. Configuring Windows 95 to Use the Network Color Printer

This chapter describes how to install the IBM Network Color Printer software on your Windows 95 workstation. The general steps are:

- Install and configure the PostScript Level 2 Printer Driver and printer description files.
- Set your default printer.
- Set print options.
- Use the installer to install user software such as the Spooler and Downloader utilities and the Color Reference pages.
- If softcopy printable versions of the documentation are desired, install the documentation files and Adobe Acrobat Reader.

The software for the IBM Network Color Printer is provided on the *Customer CD-ROM* that shipped with the printer. Except for the color reference pages and the documentation, all of this is also available on the diskettes that shipped with the printer.

- If you will install from diskettes, see “Installing the Printer Driver on Windows 95” on page 6–4.
- If you will install from the *Customer CD-ROM*, first see the following section “Accessing the Customer CD-ROM.”

Accessing the Customer CD-ROM

The following sections discuss accessing the *Customer CD-ROM* across the network and from a CD-ROM drive on your PC.

- If you are installing from a CD-ROM drive attached to your PC, see the following section “Accessing the Customer CD-ROM from a CD-ROM drive on your PC.”
- If you are installing from a CD-ROM drive attached to a network server and network-connected to your PC, see “Accessing the Customer CD-ROM across the Network.”
- If you are installing from diskette, skip to “Installing the Printer Driver on Windows 95” on page 6–4.

Accessing the *Customer CD-ROM* from a CD-ROM drive on your PC

Use these instructions if you plan to install directly from a CD-ROM drive attached to your PC-compatible computer:

1. If you are using an external CD-ROM drive, connect it to your computer.
2. Turn on the CD-ROM drive (if it is not already on) and insert the *Customer CD-ROM*. The CD-ROM drive icon appears in the Windows File Manager.

3. In the Windows File Manager, double-click on the CD-ROM drive icon. The contents of the CD-ROM are displayed.

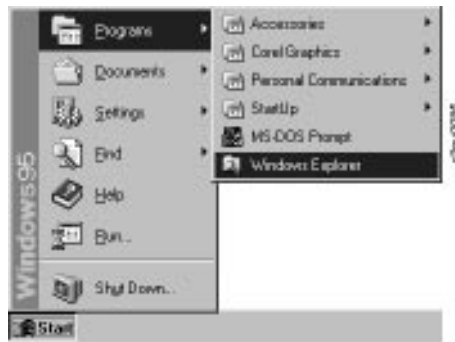
Now when you open the My Computer window, you will see the *Customer CD-ROM*.

Accessing the *Customer CD-ROM* across the Network

This section discusses how to access a CD-ROM that is being shared on the network by a network server.

To access a CD-ROM that is being shared by a network server:

1. In the lower left corner of your desktop, click on the Start button. Select Programs and Windows Explorer. The series of selections looks like this:



When you select Windows Explorer, the Exploring window is displayed.



2. Your next step depends on whether or not the server that is sharing the *Customer CD-ROM* is in the same domain as your PC.
 - If it is, scroll through the All Folders list on the left until you find the server. Then see step 3 on page 6–3.
 - If the server is in a different domain, perform these steps:
 - A) Click on the plus sign next to the Network Neighborhood icon. A list of icons following the Network Neighborhood icon is displayed. The first item in the list is Entire Network.



- B) Click on the plus sign next to the Entire Network icon. A list of all the domains on the network (and possibly some servers) is displayed.
 - C) Click on the plus sign next to the domain that contains the server that is sharing the *Customer CD-ROM*. A list of all the servers in that domain is displayed.
3. Click on the plus sign next to the server that is sharing the CD-ROM. A list of shared items on the server is displayed.



4. Locate the icon that represents the CD-ROM drive that the server is sharing and that has the *Customer CD-ROM* in it. (How this drive appears depends on what the server administrator specified as the drive Share Name. In this example, the shared CD-ROM drive is called CD.)
5. With your right mouse button, click on the CD-ROM drive. Select Map Network Drive from the pop-up menu that appears.



The Map Network Drive window is displayed.



6. This window lets you pick the name under which the server's CD-ROM drive appears on your PC. Only drive designations that are not already in use on your PC will be displayed.

Click on the down arrow at the right of the Drive field and choose a drive designation from the pop-up list. Then click on the OK button.

7. Close the Explorer window.

Now when you open the My Computer window, the CD-ROM drive on the server shows up as one of the drives on your PC. To see the contents of this drive, double-click on it to open it. If the *Customer CD-ROM* is in the server CD-ROM drive, opening the drive on your PC displays the *Customer CD-ROM*.

Installing the Printer Driver on Windows 95

This section discusses installing the IBM Network Color Printer PostScript printer driver on your Windows 95 PC. Installing the printer driver allows you to take advantage of printer features, such as CMYK color. You can set up the printer driver to connect to a networked or parallel-attached printer:

- To install the IBM Network Color Printer printer driver and connect to a networked printer, see the following section.
- To install the IBM Network Color Printer printer driver for a parallel-attached printer, see “Parallel-Attaching the Printer on Windows 95” on page 6–9.

Installing as a Network-Connected Printer on Windows 95

Use this section to install the IBM Network Color Printer printer driver on your Windows 95 PC and connect to a networked printer.

To install the driver for a network-connected printer:

1. Double-click on the My Computer icon to open it. The My Computer window is displayed.



2. Double-click on the Printers icon. The Add Printer Wizard window is displayed.



3. Click on the Next button. A window appears that asks you to choose between installing a network or a local printer.



4. Select Network printer. Click on the Next button. A window asking for the location of the network printer appears.



5. Your administrator can tell you the network location of the Windows NT server or workstation that is sharing the printer.

Either enter the network path your administrator gives you or click on the Browse button to browse the network.

- If you enter a network path, click on the Next button and skip to step 6.
- If you click on the Browse button, the Browse for Printer window appears.



Double-click to follow a path through the network until you reach the Windows NT server or workstation that is sharing the printer with the network. Double-click on the Windows NT server or workstation to display the printer icon.

When you find the printer, select it and click on the OK button.

6. A window displays asking if you want to accept the default name for the printer or enter another name.



7. Leave the default name or enter another, descriptive name. Click on the Next button.

A window appears that asks if you want to print a test page.



8. Select Yes and insert the Windows 95 CD-ROM or diskette into your CD-ROM drive. The Windows 95 CD-ROM is where the PostScript printer driver is located. Click on the Finish button.

As Windows 95 copies the printer driver, the Copying Files status message is displayed.



Then a window displays telling you that the printer page description file could not be found. The window asks you to insert the Windows 95 CD-ROM.

Do not do so. Click on the Browse button and go on to the next step.



9. The Open window is displayed. You can install the PPD file from diskette or from the *Customer CD-ROM*.
 - If you are installing from diskette, insert the IBM Network Color Printer Windows Drivers diskette into your diskette drive. In the Open window, select the diskette drive. Double-click on the diskette icon to open it. Click on the OK button. Go to step 10.
 - If you are installing from the *Customer CD-ROM* and the CD-ROM is being shared by a network server, you have already mapped the CD-ROM to a drive on your PC. Instructions for doing this are in

“Accessing the Customer CD-ROM across the Network” on page 6–2. In the browser, select the drive to which you mapped the *Customer CD-ROM*.

- 1) Open the *Customer CD-ROM*.
- 2) Open the folder that corresponds with your language.
- 3) Open the WIN95 folder.
- 4) Open the DRIVERS folder. Click on the OK button and go to step 10.

- If you are installing from the *Customer CD-ROM* locally, eject the Windows 95 CD-ROM and insert the *Customer CD-ROM* into your CD-ROM drive. Select the drive in which you inserted the CD-ROM.

- 1) Open the *Customer CD-ROM*.
- 2) Open the folder that corresponds with your language.
- 3) Open the WIN95 folder.
- 4) Open the DRIVERS folder. Click on the OK button and go to step 10.

10. The **oemprint.inf** file displays in the File name text field of the Open window.



11. Click on the OK button. The next two windows that appear tell you that the test page has printed and show you the icon for the newly-created network printer.



The IBM Network Color Printer is now your default printer. To set your default print options, go to “Choosing Print Options” on page 6–13.

Parallel-Attaching the Printer on Windows 95

This section describes how to install the printer driver to work with a Parallel-attached IBM Network Color Printer.

To install the printer driver for a parallel-attached printer:

1. Double-click on the My Computer icon to open it. The My Computer window is displayed.



2. Double-click on the Printers icon. The Add Printer Wizard window is displayed.

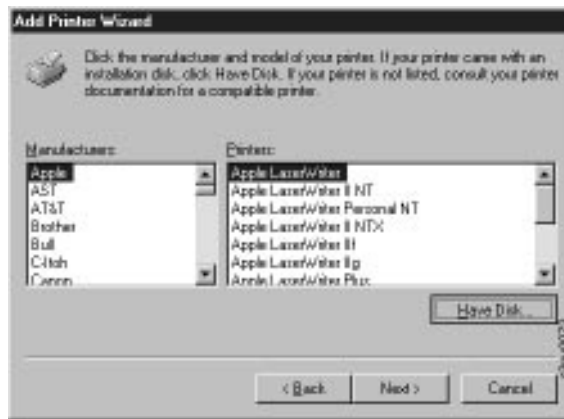


3. Click on the Next button. A window appears that asks you to choose between installing a network or a local printer.



4. Select Local printer. Click on the Next button. A window appears that

asks you to select the manufacturer and model of the printer.



- If you are installing from a diskette, insert the Windows Drivers diskette into your diskette drive, then go to step 5.
 - If you are installing from a *Customer CD-ROM* that you have, eject the Windows 95 CD-ROM and insert the *Customer CD-ROM* into your CD-ROM drive. Go to step 5.
 - If you are installing from a *Customer CD-ROM* that a server is sharing on the network, you have already accessed the *Customer CD-ROM* using the steps in “Accessing the Customer CD-ROM across the Network” on page 6–2. Go to step 5.
5. Click on the Have Disk button. The Install From Disk window is displayed.



6. Enter the drive and directory path to the Network Color Printer driver, as follows:

- If you are installing from diskette, specify the diskette drive in which you placed the diskette. The file is located in the root directory of the diskette. For example, if the diskette drive is drive A, enter:

A: \

- If you are installing locally from the *Customer CD-ROM*, specify the drive that the *Customer CD-ROM* is in and the full directory path to the DRIVERS folder. For example, if your CD-ROM drive is the C drive and your language is English, use this directory path:

C: \ENGLISH\WIN95\DRIVERS

If your language is Spanish, use this directory path:

C: \ESPAÑOL\WIN95\DRIVERS

- If you are installing code remotely from the *Customer CD-ROM*, specify the network drive to which you earlier mapped the *Customer CD-ROM*. Specify the full directory path to the DRIVERS folder.

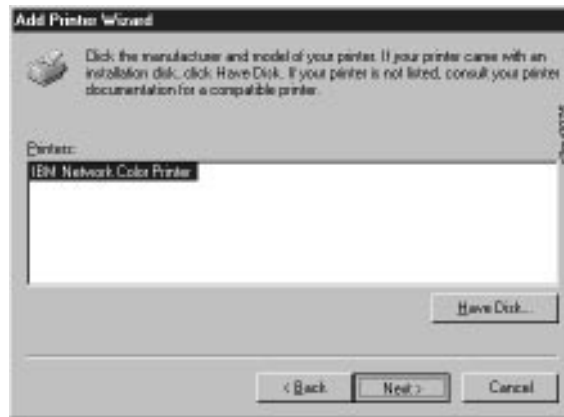
For example, if your CD-ROM drive is the C drive and your language is English, use this directory path:

C:\ENGLISH\WIN95\DRIVERS

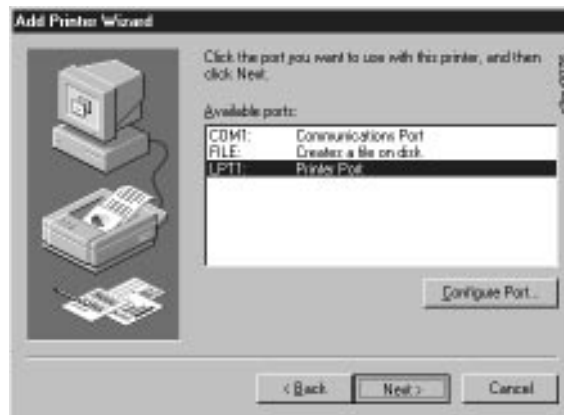
If your language is Spanish, use this directory path:

C:\ESPAÑOL\WIN95\DRIVERS

7. Click on the OK button. This displays a window in which you select the printer model.



8. Select the IBM Network Color Printer and click on the Next button. This displays a window in which you select a port.



9. Select the port to which the Network Color Printer is attached. Click on the Next button. This displays a window in which you can choose the printer name.



10. Either use the default name or enter a new, descriptive name. Click on the Next button. This displays a window in which you can choose to print a test page.



11. Select Yes if you wish to print a test page. Click on the Finish button. A window is displayed that asks you to insert the Windows 95 CD-ROM or one of the Windows 95 diskettes, depending on which you originally used to install Windows 95.
12. Insert the requested media and click on the OK button. A status message displays telling you that the files are copying. Then the Printers window appears, showing you your newly installed Network Color Printer.

You have successfully installed the printer. In a moment the test page is printed.

Choosing Print Options

Use this section to set the default options your jobs will use when sent to the IBM Network Color Printer.

To set options:

1. Double-click on the My Computer icon to open the window.
2. Double-click on the icon for the IBM Network Color Printer to open its window.
3. From the Printer menu, choose Properties. In the various printer properties sheets, do the following tasks:
 - For Output Format, choose PostScript.
 - For Paper Source, choose Auto Select.
 - For the other options, choose the settings that are right for the majority of your jobs.
 - Leave the Brightness option set to Printer's Default.
 - Set the Color Mode option to CMYK.
 - For the Rendering Style option, choose between these settings:
 - Photographic** - choose this setting if you mostly print bitmap images, such as screen captures, scanned photographs, and images created with paint applications.
 - Presentation** - choose this setting if you mostly print presentations and other documents containing highly saturated color fills.
 - Monitor** - choose this setting to get a print that approximates the way the document appears on a monitor screen.
 - Solid Color** - choose this setting if you mostly print images with spot colors, such as company logos.
 - For the Finish option choose Standard. If you are using heavier paper and you notice that the toner is not fusing well, choose the Glossy setting.

Note: Choosing Glossy affects printer speed. The fuser must heat up for each Glossy job, and then cool back down for each Standard job.
 - For the Paper Type option, choose either Plain Paper or Transparency, depending on which you print with most frequently.
 - Under Performance Options, select Use PostScript Level 2 Features.
 - Under Color Options, select Send Full Color Data and Match Color Across Printers.
 - Under PostScript Performance, select Optimize for Speed.

4. For fonts make your selection based on the following information:
 - If your jobs typically use PostScript fonts and it is important to you that when you do use True Type fonts they print *exactly*, then set your PC to download TrueType fonts as Type 1.

Note: When a True Type font is downloaded, the amount of time it takes to print increases.
 - If your jobs use many True Type fonts, set to substitute printer PostScript fonts for True Type Font. Instead of printing the True Type fonts in your documents, the printer uses similar Post Script fonts stored on the printer's hard disk. This greatly decreases the amount of time it takes to transfer your jobs to the printer.

Installing the User Software on Windows 95

Use this section to install the user software and Color Reference files that came with your printer.

This section covers two procedures:

- Using the installer to install the utilities and Color Reference files,
- Editing the NET_WSCK.INI file. (This procedure is not necessary if your administrator provides you with an already-customized file.)

Before you begin:

- Make sure that the IPX/SPX communication protocol is installed and configured on your Windows 95 PC. This is necessary because the utilities use SPX/IPX to communicate with the printer. For instructions on installing and configuring SPX/IPX, see the documentation that came with the Windows 95 operating system.
- Make sure that there is a working Novell NetWare server on your network. The server provides the Windows 95 client PC with information about the location of the printer on the network.
- Make sure that your PC has the correct IPX/SPX Frame Type set.
- Set the Frame Type so that Auto-Detect is **OFF** and the Frame Type is the same as the Frame Type of the NetWare server on your network.

1. From the Start menu at the bottom left of the Windows 95 desktop, choose Settings and Control Panel.



2. From the Control Panel, choose Network.
 3. Double-click on IPX/SPX Compatible Protocol.
 4. Click on the Advanced tab.
 5. In the Property list box, click on Frame Type.
 6. Click on the arrow in the Value list box to display the choices.
 7. Click on the correct Frame Type for your network. This should be the Frame Type that the Novell NetWare server uses.
 8. Click on the OK button.
- Get the customized NET_WSCK.INI file, if your administrator is providing it to you.
 - Exit all your Windows programs.

The following table shows the items that are included on the *Customer CD-ROM*. All of these except for the CMYK Color Reference files are also on diskette.

IBM Color Downloader Utility	This utility enables you to print PostScript and Encapsulated PostScript files directly to the printer without using the application in which the files were created. Printing with the Downloader is faster than printing from within applications. The Downloader also enables you to manage the printer fonts installed on the printer.
IBM Color Spooler Utility	This utility enables you to view the order and priority of print jobs, customize printer settings for jobs, delete jobs, and move jobs between queues. You can also use it to see what jobs the printer has completed.

Fiery Calibrator Utility	Not supported for Windows; Macintosh only.
Color Reference Files	The Color Reference pages are PostScript files that you can print using the lpr or COPY command with the option to specify PostScript. Printing these files enables you to view the range of colors available on your printer. From the CMYK pages you can choose CMYK color percentages and use them to define colors in the files that you create. From the Pantone pages you can choose named Pantone colors and specify them in your documents. The colors will print in your documents the same as they print on the color reference pages.

Note: Use different procedures depending on whether you are installing from CD-ROM or diskette:

- If you are installing from diskette, see “Installing the User Software from Diskette” on page 6–21.
- If you are installing from the *Customer CD-ROM*, see the following section, “Installing the User Software from the Customer CD-ROM.”

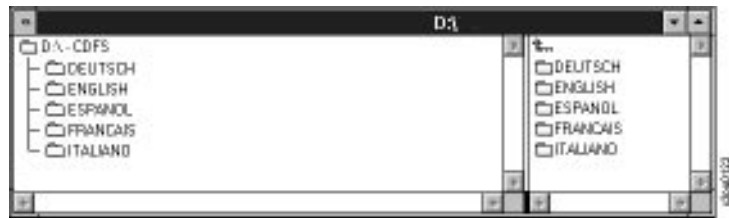
Installing the User Software from the Customer CD-ROM

Use this section to install the user software on your Windows 95 PC from the *Customer CD-ROM*.

To install the utilities and color reference page from CD-ROM:

1. Make sure that you have access to the *Customer CD-ROM*. If you need instructions, see one of these sections:
 - “Accessing the Customer CD-ROM from a CD-ROM drive on your PC” on page 6–1
 - “Accessing the Customer CD-ROM across the Network” on page 6–2
2. Open the My Computer window and double-click on the icon for the hard disk on which you want to store the files.
3. Create a directory in which to keep the files. This step is optional. You can also allow the installer to create a directory for you called IBMcolor or use a different, already-existing directory. If you would like to create a directory:
 - a. From the File menu choose the Create Directory command.
 - b. Enter a name for the directory.
 - c. Click on the OK button.
4. Double-click on the icon for the CD-ROM drive. The contents of the

Customer CD-ROM are displayed.



5. Open the directory that corresponds with the language you wish to use.



6. Open the WINDOWS directory. Open the UTILS directory.
7. Double-click on the SETUP.EXE file to run it. A status bar displays as the SETUP program begins. Then the SETUP program welcome window is displayed.



8. Click on the Next button. The next window is displayed.



9. If the directory shown is not the directory in which you want the files to be stored, click on the Browse button and browse to the location of the correct directory.

Select Utilities and Color Reference to install the IBM Color Downloader utility, the IBM Color Spooler utility, and the Color Reference pages.

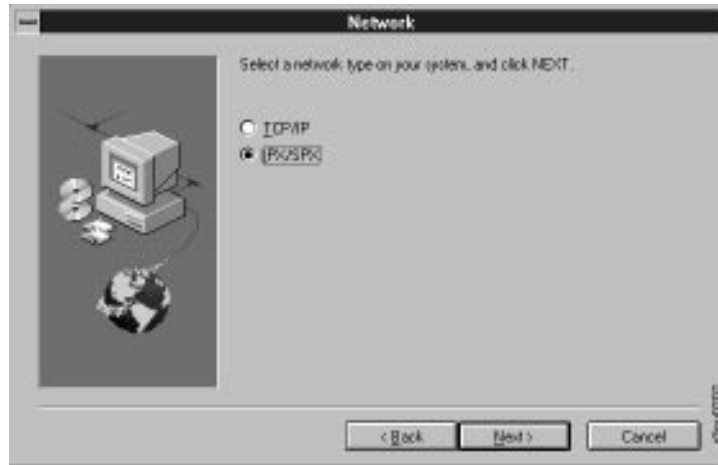
Click on the Next button to go on to the Select Program Group window.



10. Do one of the following:

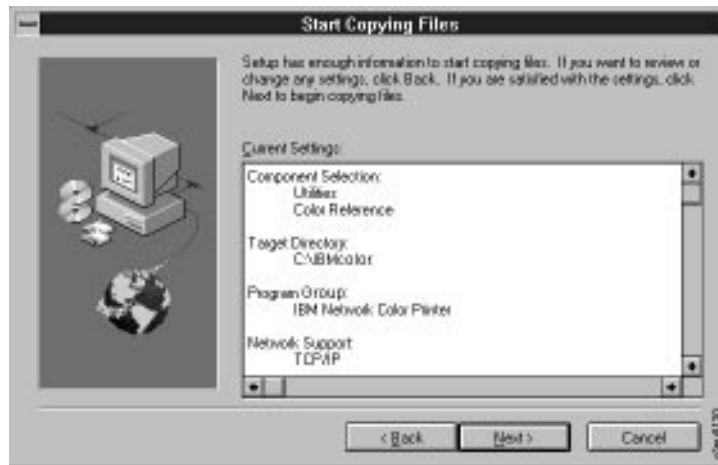
- Accept the default program-group name of IBM Network Color Printer.
- Enter a different name.
- Select one of your existing program groups. This will place the utilities icons in that group.

Click on the Next button. The Network screen is displayed.



11. Select IPX/SPX. Click on the Next button.

The Start Copying Files screen is displayed, which allows you to review the choices you made in the previous screens.



12. Review the choices you made.

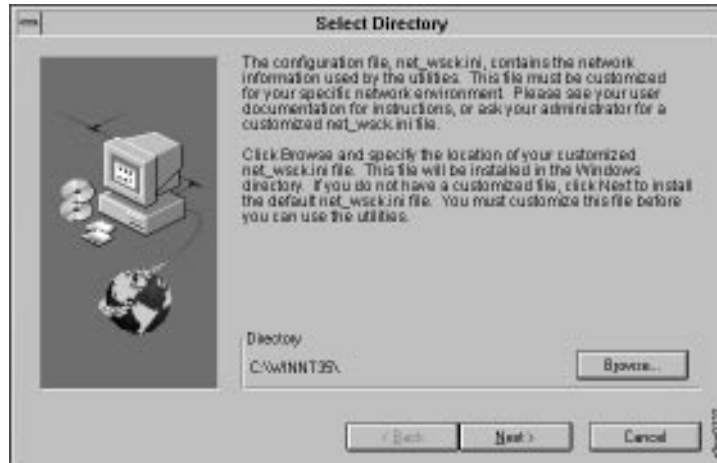
Do one of the following:

- If you want to make changes, click on the Back button and return to previous screens.
- If everything looks correct, click on the Next button and

go on to the next step. A status bar is displayed.

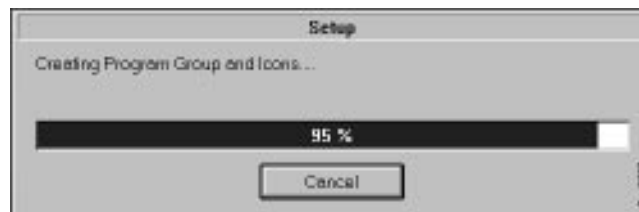


13. After the status bar finishes, the next screen is displayed. This screen discusses the NET_WSCK.INI file.



14. Do one of the following:
- Click on the Browse button and browse to the location of the customized NET_WSCK.INI file your administrator gave you.
 - Click on the Next button to install the default file. In this case, you *must* customize this file before you can use the utilities. Instructions for customizing the file follow this section, in "Customizing the NET_WSCK.INI File for Your Windows 95 PC" on page 6–26.

After you have either located and selected a customized file or decided to use the default file, click on the Next button. The SETUP program displays a status bar as it creates the Program Group and the utilities icons.



You have completed this segment of the installation process. What you do next depends on whether you installed a customized file or the default file in step 14:

- If you installed a *customized* NET_WSCK.INI file provided by your administrator, you are done. To learn how to use the utilities, see “Using the Utilities” on page 8–1.
- If you installed the *default* NET_WSCK.INI file, you must customize the file before you can use the utilities. See “Customizing the NET_WSCK.INI File for Your Windows 95 PC” on page 6–26.

Installing the User Software from Diskette

Use this section to install the user software on your Windows 95 PC from diskette.

Note: The Color Reference pages are supplied on the *Customer CD-ROM* only.

Before you begin...

- Exit all your Windows programs.
- Make sure that IPX/SPX is installed and working.

To install the utilities from diskette:

1. Open the My Computer window and double-click on the icon for the hard disk on which you want to store the files.
2. Create a directory in which to keep the files. This step is optional. You can also allow the installer to create a directory for you called IBMcolor, or use a different, already-existing directory. If you would like to create a directory:
 - a. From the File menu choose the Create Directory command.
 - b. Enter a name for the directory.
 - c. Click on the OK button.
3. Insert the IBM Color Downloader diskette into your diskette drive, and click on the button for that drive. This displays the contents of the diskette.

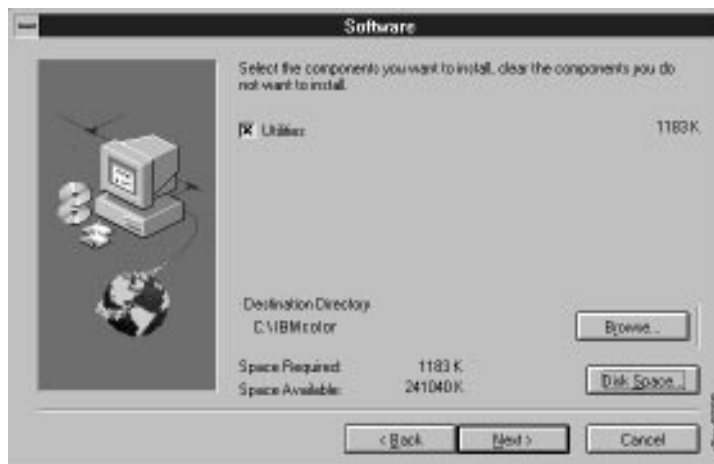


4. Double-click on the SETUP.EXE file to run it. A status bar displays as the SETUP program begins. Then the SETUP program Welcome window is displayed.

Note: Later in the installation process, the installer will ask you for the diskette 2. When this occurs, eject the Downloader diskette and insert the Spooler Diskette.



5. Click on the Next button. The Software window is displayed.



6. If the directory shown is not the directory in which you want the files to be stored, click on the Browse button and browse to the location of the correct directory.

Select Utilities to install the IBM Color Downloader utility and the IBM Color Spooler utility.

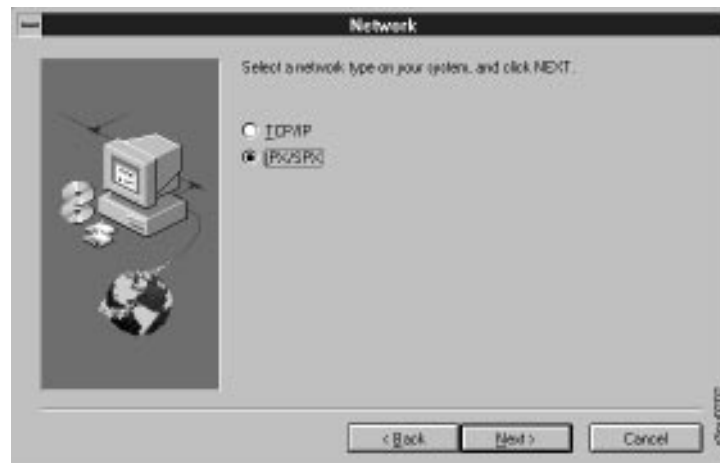
Click on the Next button to go on to the next window.



7. Do one of the following:

- Accept the default program-group name of IBM Network Color Printer.
- Enter a different name.
- Select one of your existing program groups. This will place the utilities icons in that group.

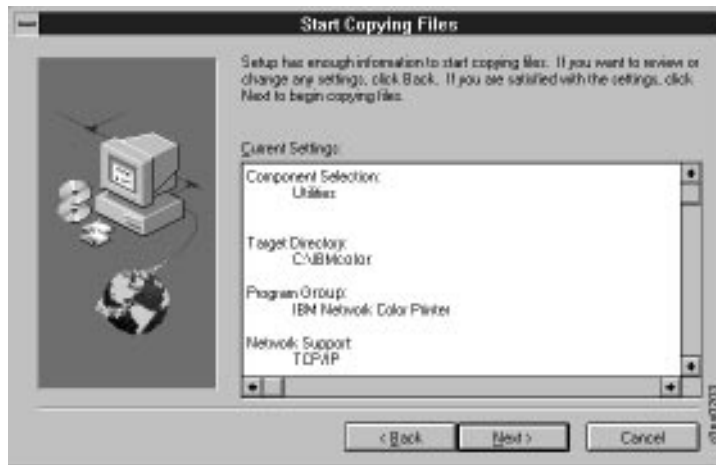
Click on the Next button. The Network screen is displayed.



8. Select IPX/SPX. Click on the Next button.

The Start Copying Files screen is displayed, which allows you to review

the choices you made in the previous screens.



9. Review the choices you made and do one of the following:

- If you want to make changes, click on the Back button and return to previous screens.
- If everything looks correct, click on the Next button and go on to the next step. A status bar is displayed.



10. After the status bar finishes, the Select Directory screen is displayed. This screen discusses the NET_WSCK.INI file.

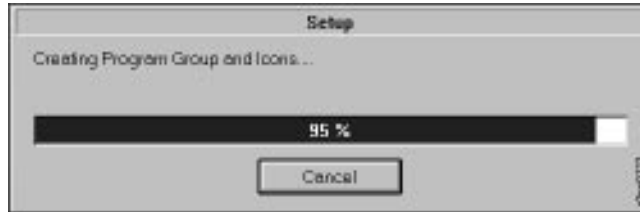


11. Do one of the following:

- Click on the Browse button and browse to the location of the customized NET_WSCK.INI file your administrator gave you.
- Click on the Next button to install the default file.

In this case, you *must* customize this file before you can use the utilities. Instructions for customizing the file follow this section, in “Customizing the NET_WSCK.INI File for Your Windows 95 PC” on page 6–26.

12. After you have either located and selected a customized file or decided to use the default file, click on the Next button. The SETUP program displays a status bar as it creates the Program Group and the utilities icons.



You have completed this segment of the installation process. What you do next depends on whether you installed a customized file or the default file in step 11:

- If you installed a *customized* NET_WSCK.INI file provided by your administrator, you are finished. To learn how to use the utilities, see “Using the Utilities” on page 8–1.
- If you installed the *default* NET_WSCK.INI file, you must customize the file before you can use the utilities. See “Customizing the NET_WSCK.INI File for Your Windows 95 PC” on page 6–26.

Customizing the NET_WSCK.INI File for Your Windows 95 PC

Use this section if you did not install an already-customized file when you installed the utilities.

Note: Before you begin, go to the printer and print out a configuration sheet, or get a current printer configuration sheet from your administrator. You will need the configuration sheet to tell you the IPX/SPX address of the printer.

To customize the NET_WSCK.INI file:

1. Open the My Computer window.
2. Open the drive on which the Windows 95 operating system is installed.
3. Open the root Windows directory. Depending on how your Windows 95 operating system was installed, the root Windows directory may be called different things. It may be WINDOWS, WINNT, or WINNT35.

The icon for the root Windows directory is a hand holding a folder. This is in contrast to the other directory icons, which are just folders.



4. Find the NET_WSCK.INI file and double-click it to open it with the Notepad application.

The top lines in the file are as follows:

```
;IBM Windows '95 IPX/SPX Utilities and Windows NT TCP/IP Utilities

;The NET_WSCK.INI file is used to obtain network information pertaining
;to your printer, necessary for operating the SPX Utilities or TCP/IP
;Utilities. Please print a Config Page from the printer's LCD and read all
;of the following notes before editing this file. For more information
;please refer to the README.TXT file.

[ConfigServers]
Server1=

[]

;IPXAddr=00 00 00 00 00 00 00 00 00 00
Devicel=4303

;(1) Enter server name as shown under Server:xxxxx on the Config Page header
; directly after Server1=
;(2) Enter the server name a second time, between the brackets []
;(3) SPX Utilities for Windows '95:
; Remove the semicolon in front of the IPXAddr= line
; Enter the network number (first eight digits) and the printer's
; hardware address (last twelve digits) directly after IPXAddr=
; This number should appear on the Config Page as the first item
; following the Network Setup header
; TCP/IP Utilities for Windows NT:
; The IPXAddr= line does not apply. Make sure that a semicolon
; is before the line ;IPXAddr=00 00 00 00 00 00 00 00 00 00
;(4) Please do not alter the line, Devicel=4303
```

5. Edit the file so that `Server1=` is followed by the name of the printer. Find this name on the second line of the of the configuration page. For example, when the printer is shipped its name is "IBMnetcolor." If this is still the printer name, edit the line so that it reads:

```
Server1=IBMnetcolor
```

6. Enter that same name between the brackets just above the IPX address line.
7. Remove the semicolon from in front of the IPX address line.
8. Edit the IPX address line so that the address is the same as the IPX address printed on the configuration sheet.
9. *Optional:* To use the utilities with more than one IBM Network Color Printer:

- a. Add more `Server` lines following the `Server1` line. For example, to allow the utilities to connect to two additional printers, enter the lines:

```
Server2=SecondPrinterName  
Server3=ThirdPrinterName
```

where `SecondPrinterName` and `ThirdPrinterName` are unique names of different IBM Network Color printers on your network.

- b. Below the `Device1` line, add three more lines for *each* additional printer. For example, enter these lines:

```
[SecondPrinterName]  
IPXAddr=00 00 00 00 00 00 00 00 00 00  
Device1=4303  
  
[ThirdPrinterName]  
IPXAddr=00 00 00 00 00 00 00 00 00 00  
Device1=4303
```

where:

- `SecondPrinterName` and `ThirdPrinterName` are the unique printer names you entered on the `Server` lines.
- After `IPXAddr=`, you have entered the IPX addresses of the printers. Get the addresses from the configuration pages of the printers.

Note: The line reading `Device1=4303` is the same for each entry.

10. Save changes and exit the file.

You have completed the customizing the `NET_WSCK.INI` file. You have finished installing the utilities. To learn how to use the utilities, see "Using the Utilities" on page 8-1.

Installing the Documentation Files and Acrobat Reader

This section explains how to copy the Network Color Printer documentation files and install Adobe Acrobat Reader from the *Customer CD-ROM* to your hard disk.

Note: The Network Color Printer documentation is provided in softcopy on the *Customer CD-ROM* only; softcopy versions of the documentation are not included on the diskettes.

To install Acrobat Reader:

1. In the My Computer window, open the your CD-ROM drive. The contents of the CD-ROM are displayed in the Directories box.
2. Open ENGLISH\DOCS\ACROBAT\WINDOWS\DISK1. The contents of this directory are displayed.
3. Double-click the file SETUP.EXE. The Acrobat Reader Installer window appears. This window contains license agreement text for Acrobat Reader.
4. Click on the Accept button to agree to the terms and continue installation of the reader. Once you have accepted the license agreement, the Acrobat Reader Installer window shows information about available space on your hard disk and asks you to specify the target directory (folder) for Acrobat Reader files. If you do not specify otherwise, the default value is C:\ACROREAD.
5. Specify the target directory for the reader files, then click on the INSTALL button. A second Acrobat Installer window appears which asks you to personalize your copy of the reader by providing user information.
6. Enter your user information into the text boxes provided, and click on the OK button. The Acrobat Reader code is installed on your hard disk. A progress bar is displayed during installation.

You have completed installation of Adobe Acrobat Reader.

To install the documentation:

1. Open the My Computer window.
2. Open the CD-ROM drive, to display the contents of the *Customer CD-ROM*.
3. Open the directory ENGLISH\DOCS. The contents of the directory are displayed, including the documentation files.
4. Open the drive on which you installed Adobe Acrobat Reader.
5. You now have two windows open: one shows the contents of the DOCS directory on the CD-ROM, and the other shows the contents of the drive on which Acrobat Reader is installed.

6. Decide where on the hard driver you want to keep the documentation files. Click on the documentation files that you want to install. Shift-click to select multiple files. Click and drag the selected documentation files from the CD-ROM window to your chosen location on the hard disk.
7. A message displays asking if you want to copy the selected files to the new location. Click on the Yes To All button. The files are copied.

You have installed the documentation files. See “Using the Documentation Files” for instructions on using Acrobat Reader to view the documentation files.

Using the Documentation Files

This section explains how to open, view and print your softcopy documentation files using Acrobat Reader.

To view the documentation using Acrobat Reader:

1. Double-click on the Acrobat Reader icon. The File Open window is displayed.
2. Browse to select the book you wish to open, then click on OK. The softcopy book is opened and displayed on your screen.
3. To view a hyperlinked list of headings, choose Bookmarks and Page from the View menu.
4. To go to the page that a heading is on, click on the heading in the list of bookmarks.
5. To go to the page that a cross reference refers to, click on the cross reference.
6. To print the book, choose Print from the File menu.

Chapter 7. Getting the Best Results from Your Windows Applications

This chapter provides application notes that explain which options to choose when printing from a particular Windows application. They also list accompanying software or printer files needed.

This chapter contains notes for the following applications:

- “Adobe Illustrator 4.0” (discussed on page 7–1)
- “Adobe PageMaker 5.0” (discussed on page 7–3)
- “Adobe Photoshop 2.5 and 3.0” (discussed on page 7–5)
- “CorelDRAW 5.0” (discussed on page 7–8)
- “Microsoft PowerPoint 4.0” (discussed on page 7–10)

The application notes give condensed instructions for printing directly to a Network Color Printer. For instructions on using IBM Network Color Printer utilities such as the Spooler and the Downloader, see “Using the Utilities” on page 8–1.

Adobe Illustrator 4.0

Use this section to get the best results from Adobe Illustrator documents printed on the IBM Network Color Printer.

Before You Start:

Make sure you or your system administrator has installed your IBM Network Color Printer printer on your PC using the IBM Network Color Printer printer driver. For installation instructions, see “Installing the User Software” for your operating system.

Choosing Fill and Line Colors

You can create fill and line colors using the process color model (entering a percentage for cyan, magenta, yellow, and black) or choose a named color using one of the four color matching systems supplied by Illustrator

Note: Displayed versions of colors you choose will not match printer output, because monitors use light to display color and printers use toner.

To accurately specify color when printing to the IBM Network Color Printer, use the color reference pages provided with the Network Color Printer.

For instructions on installing the color reference pages, see the section on installing the printer driver in the book on your operating system.

Working with Imported Files

IBM recommends using EPS files for all artwork that will be placed in Illustrator documents. If the image is RGB, it should be saved from Adobe Photoshop, as Photoshop includes PostScript information in RGB EPS files that activates the printer's CRD. When you import this type of image file, the image prints from Illustrator as it does from Photoshop.

Note: Using a different file format compromises the printed output of RGB bitmaps, because the print job does not activate a CRD at the printer.

If you use a pixel-editing application other than Photoshop, IBM recommends converting the image to CMYK before importing it. Bitmaps that you send to the printer in CMYK do not activate the CRD and so may need some color correction to print properly on your Network Color Printer.

Setting Printer Driver Options

When printing from Illustrator, choose the Photographic Rendering Style if you have imported RGB EPS bitmap images. If not, use Presentation, Spot, or Monitor.

Change other printer driver options if you want to choose a printer-specific feature such as Paper Type.

You can access Adobe PostScript printer driver options in Illustrator by clicking on the Options button in the Print Setup dialog box.

Adobe PageMaker 5.0

Your PageMaker package may include a small document with the heading "PRINTING ALERT!" stating that only the Microsoft printer driver can be used with PageMaker 5.0. You may disregard this warning. IBM recommends printing using the printer driver supplied with the IBM Network Color Printer. The Microsoft Windows PostScript Printer Driver version 3.56, supplied with PageMaker, can also be used.

Before You Start:

1. Make sure you have installed your printer as a PostScript printer using the IBM Network Color Printer printer driver.

For installation instructions, see the section on installing the printer driver in the chapter on your operating system. Make sure that printing options are set as described in that section.

2. Copy the IBM Network Color Printer PPD file into the ALDUS\USENGLISH\PPD4 directory.

The PPD file is available on the *Customer CD-ROM* and on diskette.

- On the *Customer CD-ROM*, it is:

language\WINDOWS\DRIVERS\IBM43031.PPD

where *language* is your language.

- On diskette it is IBM43031.PPD in the root directory of the IBM Network Color Printer Windows Printer Drivers Diskette.

Page Setup

Choose Page Setup from the File menu to set options when you *begin* creating the PageMaker document. (For later versions of PageMaker, choose Document Setup.)

In the Page Setup window, choose these options:

For this option:	Choose this selection:
Compose to Printer:	43031.PPD
Target Printer Resolution:	enter 600 and choose dpi.

For other options choose the settings that are right for the document.

Choosing Fill and Line Colors

You can create fill and line colors using the process (CMYK), RGB, or HSB color model or choose a named color using one of the four color matching systems supplied. Note that displayed versions of colors you choose will not match printer output exactly.

To accurately specify color use the CMYK or PANTONE Color Reference pages included on the *Customer CD-ROM*. For instructions on installing the Color Reference pages, see the chapter on your operating system and the section on installing software.

Working with Imported Files

IBM recommends that RGB raster (bitmap) images be saved from Adobe Photoshop as EPS files before they are placed in PageMaker documents. Photoshop includes PostScript information in RGB EPS files that activate the printer's Photographic CRD. When you use this type of image file, the image prints from Illustrator as it would from Photoshop. Using a different format may not give as good results, since no CRD is activated. For details, see "Exporting Image Files to Other Applications" on page 7-7 in the section on Photoshop.

If you use a pixel-editing application other than Photoshop, IBM recommends separating the image to CMYK. Keep in mind that CMYK bitmaps are often separated for offset printing, and may need some adjustment to print properly on your IBM Network Color Printer.

Selecting Options When Printing

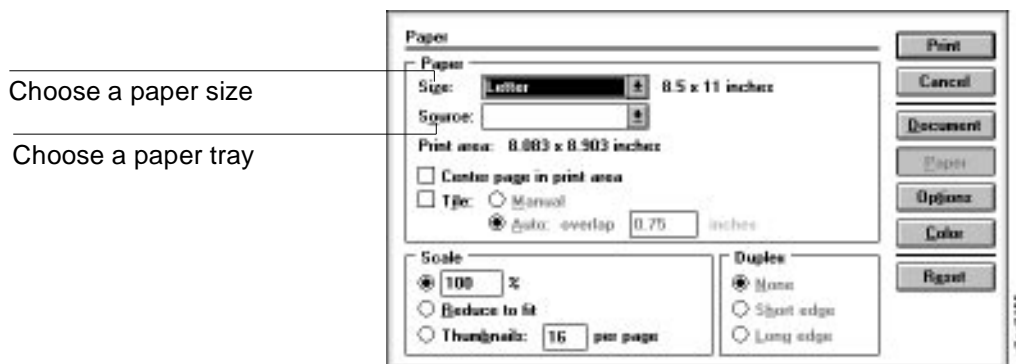
Refer to this section to select options in the Print dialog box.

Note: You cannot access the IBM Network Color Printer printer driver options from PageMaker. Settings made for the printer driver options from the Windows Control Panel have no effect.

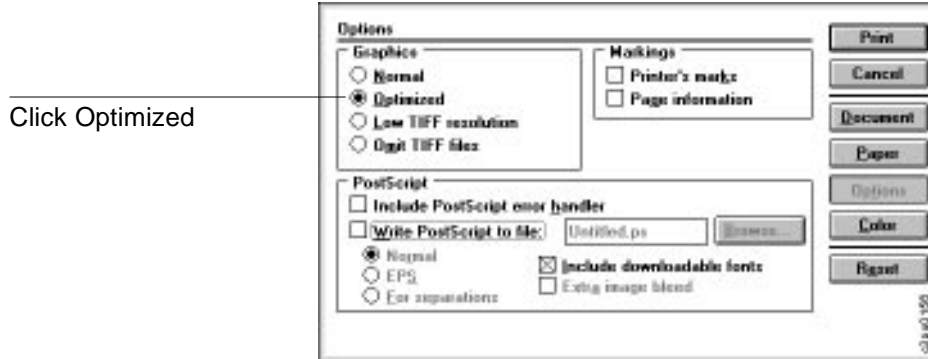
For this option:	Choose this selection:
Print to:	IBM Network Color Printer
Type:	IBM43031.PPD

For other options in this window, use the settings that are right for the document. To set additional options, click on the Paper, Options, and Color buttons.

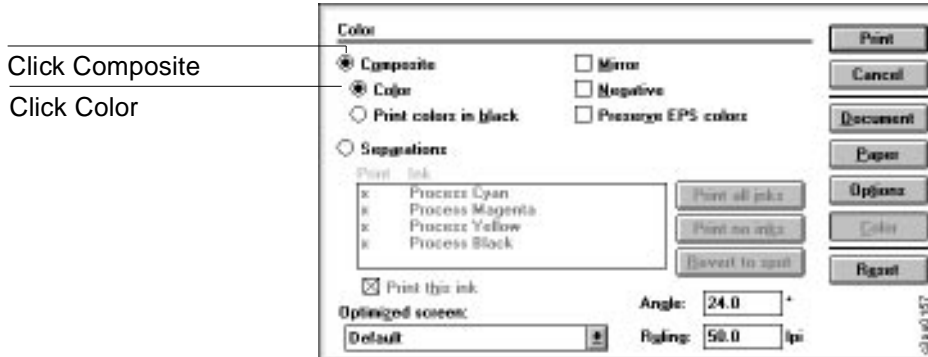
In the Paper window, use the selections shown in the illustration:



In the Print Options window, use the selections shown in the illustration:



In the Color window, use the selections shown in the illustration:



Adobe Photoshop 2.5 and 3.0

This section explains how to print from Photoshop.

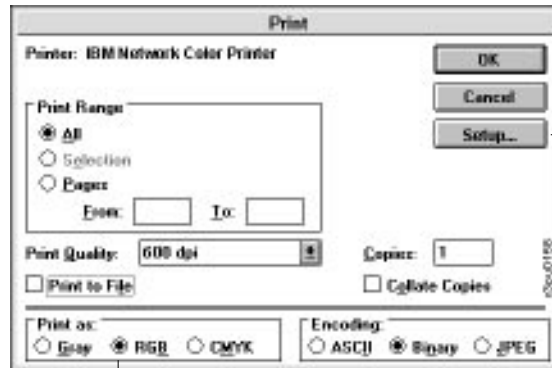
Before you start:

1. Make sure you or your system administrator have installed your printer using the IBM Network Color Printer printer driver. For installation instructions, see the section on installing the printer driver in the chapter on your operating system.
2. Make sure that your default printing options are set as described in that chapter.

Selecting Options When Printing

Consult the following illustrations when selecting printing options.

In the Print window, use the selections shown in the illustration:



Click Print as RGB to use the CRDs

Click Setup to choose printer-specific options such as the paper tray.

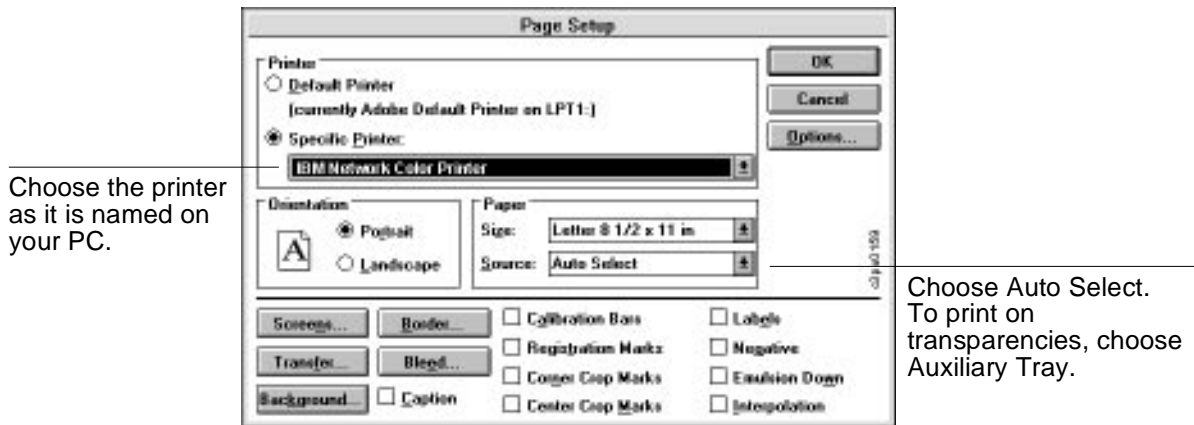
Choose Print as RGB in the Photoshop Print window. Photoshop will then send RGB image data to the printer, which uses its CRDs to convert the image to CMYK. The CRD used is the one that corresponds with the Rendering Style you chose when setting up the printer driver. Photographic works best for most raster (bitmap) images, but if your image is comprised of solid colors and fills, you may want to experiment with Spot Color, Presentation, and Monitor.

Notes:

1. If the image is other than RGB (such as CMYK), the color rendering dictionaries are not activated at the printer. This is because CRDs are used to convert RGB data to CMYK data.
2. If you experience printing problems in Photoshop, select ASCII encoding (rather than binary encoding) in the Print dialog box, and send the job again. Binary encoding offers faster printing but occasionally causes problems with some system configurations.

Click on the Setup button to access the Page Setup window, or choose Page Setup from the File Menu.

In the Page Setup window, use the selections shown in the illustration:

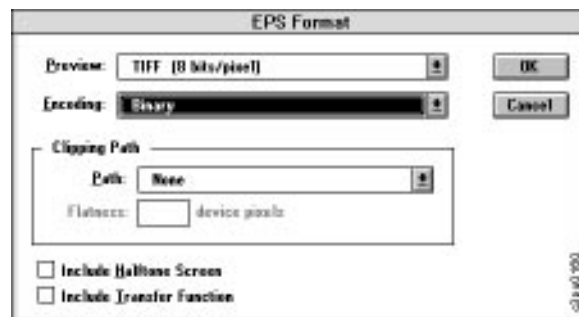


Exporting Image Files to Other Applications

Photoshop is a PostScript Level 2 application. As such, it puts information that activates the printer CRDs in RGB PostScript files that it writes. For this reason, IBM recommends saving RGB EPS images from Photoshop when the image will be imported into another application and printed to an IBM Network Color Printer. The image will be printed using a CRD when imported into almost any application.

Performing any needed rotating, cropping and resizing on the image in Photoshop before saving it speeds printing from the application in which the image is placed. When saving the file:

1. Select Save As from the File menu. The Save As window is displayed.
2. In the Save File as Format Type text box, choose EPS. Click on the OK button. The EPS Format window is displayed.
3. In the EPS format window, choose binary encoding and do *not* include transfer functions or halftone screens, as shown in the following illustration.



Note: If you later experience problems printing the exported image, substitute an ASCII encoded version of the same image, and print the document again. Binary encoding occasionally causes printing problems with some system configurations.

Choosing Fill and Line Colors

You can create fill and line colors using the process (CMYK), RGB, or HSB color model. Note that displayed versions of colors you choose will not match printer output exactly.

To accurately specify color, convert the image to CMYK and use the CMYK Color Reference pages included on the *Customer CD-ROM* to specify the colors you want. Set the Picker to CMYK sliders, and specify the percentages of C, M, Y, and K that you have identified on the CMYK pages.

For instructions on installing the Color Reference pages, see the chapter on your operating system and the section on installing software.

Note: CMYK data is not affected by the printer CRDs. If you are working in a photographic type of image, such as a scan, it is important to keep the image as RGB for best results. Then, when the image reaches the printer, the image is converted from RGB to CMYK using the printer's CRD.

CoreIDRAW 5.0

IBM recommends using the IBM Network Color Printer printer driver supplied on the *Customer CD-ROM* and diskette.

Make sure you or your system administrator have installed your printer using the IBM Network Color Printer printer driver. For installation instructions, see the section on installing the printer driver in the chapter on your operating system. Make sure that your default printing options are set as described in that chapter.

The Color Manager

The Color Manager is a color management system that is integrated into CoreIDRAW and other Corel applications. Because the Color Manager does not include a profile for the IBM Network Color Printer, this section suggests other ways to get predictable results when printing from CoreIDRAW. These methods include selecting fill colors based on the CMYK and PANTONE Color Reference pages printed from your IBM Network Color Printer and importing raster images saved from Adobe Photoshop in the RGB EPS file format to activate the printer CRDs.

If you have considerable experience working with color and want to use the Color Manager, consider creating a custom printer profile for your IBM Network Color Printer. You will need a spectrophotometer or colorimeter for accurate results. For details, see section 3 of the *CoreIDRAW 5 User Guide*, Volume 1.

Choosing Fill and Line Colors

You can create fill and line colors using the process (CMYK), RGB, or HSB color model or choose a named color using one of the four color matching systems supplied. Note that displayed versions of colors you choose will not match printer output exactly.

To accurately specify color, use the CMYK or PANTONE Color Reference pages included on the *Customer CD-ROM*. For instructions on installing the Color Reference pages, see the chapter on your operating system and the section on installing software.

Working with Imported Files

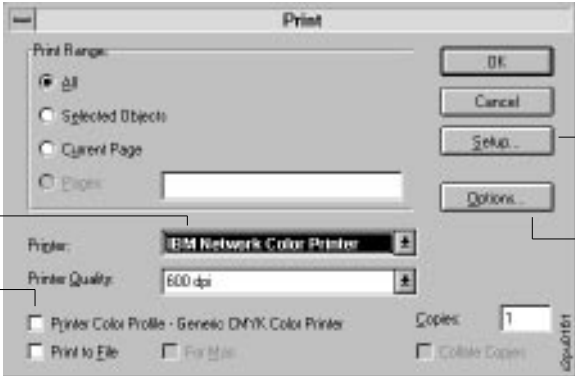
IBM recommends using EPS files for all artwork that will be placed in CoreIDRAW documents.

If the image is RGB, it should be saved from Adobe Photoshop, since Photoshop includes PostScript information in RGB EPS files that activates the printer CRDs. Using this type of image file, the image prints from Illustrator as it does from Photoshop. For details, see “Exporting Image Files to Other Applications” on page 7–7 in “Adobe Photoshop 2.5 and 3.0.” Note that using a different file format compromises the printed output of RGB bitmaps, since no CRD is activated.

If you use a pixel-editing application other than Photoshop, IBM recommends separating the image to CMYK before importing it. CMYK bitmaps from high-end scanners are typically separated for offset printing and may need some color correction to print properly on your printer.

Selecting Options When Printing

Refer to the following illustration to select options in the Print dialog box:



The screenshot shows the 'Print' dialog box with the following elements and annotations:

- Print Range:** Includes radio buttons for 'All', 'Selected Objects', 'Current Page', and 'Pages'. A line points to the 'All' option with the text: "Choose the printer as it is named on your PC."
- Printer:** A dropdown menu showing 'IBM Network Color Printer'. A line points to this dropdown with the text: "To set printer options, choose the Setup button".
- Printer Quality:** A dropdown menu showing '600 dpi'. A line points to this dropdown with the text: "To set CoreIDRAW print options, choose the Options button".
- Buttons:** 'OK', 'Cancel', 'Setup...', and 'Options...' are located on the right side of the dialog.
- Other options:** Checkboxes for 'Printer Color Profile - Generic CMYK Color Printer', 'Print to File', 'For File', 'Copies: 1', and 'Collate Copies' are at the bottom.

Note: Do not select this option unless you are using the Corel Color Manager

Setting Printer-specific Print Options

No special settings are required for printing from CorelDRAW; the default settings suggested in the section on setting up the printer driver in the chapter on your operating system are applicable here. It is only necessary to change printer options if:

- Your CorelDRAW document contains a placed RGB EPS file, and you previously chose a rendering style other than Photographic.
- You want to choose a printer-specific feature such as Paper Type.

You can access printer-specific options in CorelDRAW by clicking the Setup button in the Print dialog box.

Microsoft PowerPoint 4.0

Presentations created in PowerPoint can be printed on plain paper or on transparencies.

Before you start:

Make sure you or your system administrator has installed your printer using the IBM Network Color Printer printer driver. For installation instructions, see the section on installing the printer driver in the chapter on your operating system. Make sure that your default printing options are set as described in that chapter.

Choosing a Template

PowerPoint comes with templates that determine the background for each slide, as well as a color scheme and placement for text. To select a template, choose Presentation Template from the Format menu, and double-click on a template name to apply it to all slides in the presentation. If none of the templates for color overheads suit your needs, try one of the templates for color slides.

If you use one of the templates for color slides, you must change the Slide Setup for printing on the IBM Network Color Printer. Choose Slide Setup from the File menu, enter the appropriate page size, and click OK to apply the changes.

Working with Imported Files

In addition to the clip art included with PowerPoint, images from other applications in many formats can be imported. IBM recommends using EPS files for all raster artwork that will be placed in Illustrator documents.

If the image is RGB, it should be saved from Adobe Photoshop because Photoshop includes PostScript information in RGB EPS files that activates the printer CRDs. Using this type of image file, the image prints from Illustrator as it does from Photoshop. For details, see "Exporting Image Files

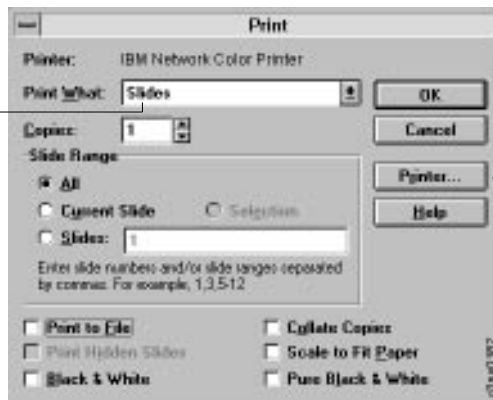
to Other Applications” on page 7–7 in the section on Photoshop. Note that using a different file format compromises the printed output of RGB raster images, since no CRD is activated.

If you use a pixel-editing application other than Photoshop, IBM recommends separating the image to CMYK before importing it. CMYK bitmaps from high-end scanners are typically separated for offset printing and may need some color correction to print properly on the IBM Network Color Printer.

Selecting Options When Printing

Refer to the following illustration to select options in the Print and Print Setup windows. In the Print window, choose the selections shown in the illustration:

- To print a single slide on a page, choose Slides
- To print several slides on a page, choose Handouts (2, 3, or 6 slides per page)



Click to display the Print Setup dialog box, where you can select your IBM Network Color Printer if it is not already selected

In the Print Setup window, choose your IBM Network Color Printer by the name you gave it on your PC.

Select your IBM Network Color Printer



You have finished the Microsoft PowerPoint application notes.

Chapter 8. Using the Utilities

This chapter discusses the Spooler and Downloader utilities. The Network Color Printer utilities enable you to perform additional functions with your Network Color Printer. The utilities for Macintosh and Windows users are fundamentally the same; differences are noted in this chapter. The following utilities are included on the *Customer CD-ROM*:

- Network Color Printer Spooler
- Network Color Printer Downloader

The Network Color Printer Downloader is a utility that enables you to print PostScript and Encapsulated PostScript files directly to the printer without using the application with which they were created. Printing with the Network Color Printer Downloader is faster than printing from within applications. The Downloader utility also enables you to manage the printer fonts on the Network Color Printer.

The Network Color Printer Spooler is a utility that allows you to view the order and priority of print jobs, delete jobs, and move jobs between queues. You can also use it to view job accounting information.

Note: You cannot use the Network Color Printer utilities with Windows 3.1x, with Token-Ring networks, or with the parallel port.

Using the Downloader Utility

The Downloader utility is included with the IBM Network Color Printer. Using the Downloader utility, you can:

- Print PostScript, and encapsulated PostScript (EPS) files.
- Check the status of the IBM Network Color Printer.
- Manage the PostScript fonts stored on the IBM Network Color Printer's hard disk.

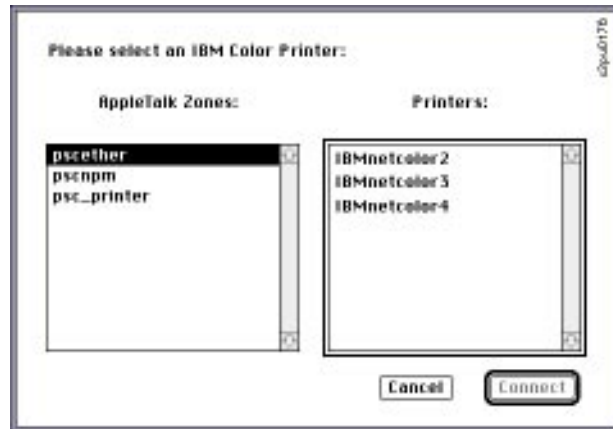
To connect to a printer using the Downloader utility:

1. Double-click on the Downloader utility icon or choose Network Color Printer Downloader from the Windows 95 Start button.
 - If there is more than one printer, the Chooser window is displayed.

Windows:



Macintosh:



When you have selected a printer and clicked OK (Windows), or selected a zone and a printer and clicked Connect (Macintosh), the Status window is displayed for the printer:

Windows



While the Downloader Status window is active, it updates every 10 seconds or as soon as a file finishes printing, whichever action occurs first.

Icons for some menu functions display in the Toolbar at the top of the window. Click on the button to perform the function. You can toggle the display of the Toolbar by choosing Toolbar in the View menu. The icons are:



Connect

Click on this button to connect to a different Network Color Printer.



Download

Click on this button to download a file or font to the Network Color Printer.



Font List

Click on this button to open the Font List window.

Within the Status window:

The **Print Status** area of the Status window displays the printer status and the user name and document name of the job currently printing.

The **RIP Status** area of the Status window displays the user name and document name of the job currently processing.

The **Download Progress** bar indicates the percentage of a job that has been transferred to the printer when you download a job.

The **Hard Disk** (Printer Disk Space) area of the window displays the amount of available disk space on the printer.

2. You can click the Font List button or choose Font List from the File menu to view font information.
3. To select a different IBM Network Color Printer, click the Connect button or choose the Open Printer from the File menu. Select the new IBM Network Color Printer in the dialog box that appears, and click on the Connect button.
4. To close the window, choose Close from the File menu; to close the application select Quit (Macintosh) or Exit (Windows) from the File menu.

Printing with the Downloader Utility

When the Downloader utility is open, you can click the Download icon (pictured in the previous section) to download files and fonts to the printer.

With Windows 95 and Macintosh, you can use the Network Color Printer Downloader's drag-and-drop feature to automatically download a file or font by dragging its icon onto the Downloader utility icon. You can drag and drop to download a single file or font, multiple files or fonts, or an entire folder.

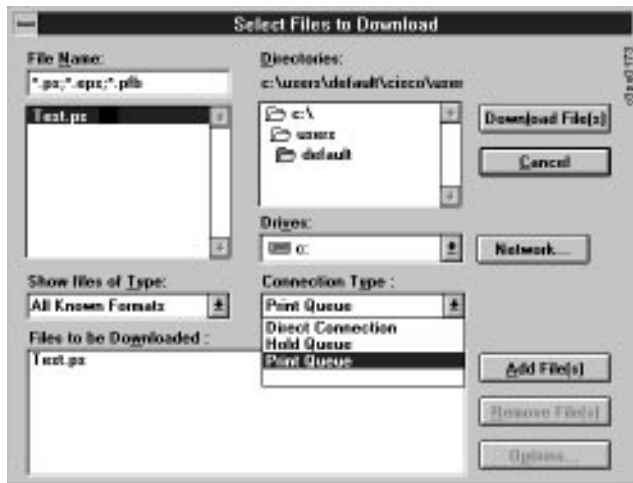
To download a file or font with the Downloader utility:

1. Use your application to generate a PostScript file.

You can save a PostScript file by selecting the **Print to File** option in the application's Print dialog box. With some applications, you can save EPS files. If you experience problems printing EPS files, use PostScript or print the file directly from the application.

2. Open the Downloader as described in "To connect to a printer using the Downloader utility:" on page 8–2.
3. Choose **Download** from the File menu or click on the **Download** button. A dialog box containing a list of files appears.

Windows:



Macintosh:



4. Select where to download the file or font in the pop-up menu called Connection Type (Windows) or Queue (Macintosh). You can select the Print queue, Hold queue, or Direct queue.

Note: Only the queues enabled by your system administrator during printer configuration will appear in this menu.

5. Select the file type to display in the Show (Files of Type) pop-up menu. You can leave this at the default, All known formats, or select All files. All known formats will list all files in formats supported by the Downloader utility; All files will list all files.

Note: You can download files and fonts in the same batch.

6. Select the filename and click on the Add button.
 - You can use the dialog box to move to different drives and directories to select files to download. Click the Add All button to add all files in a folder.
 - To select multiple sequential files, select the first file and then Shift-click on the last job. Control-click to select multiple non-sequential files.

Note: Before you download PostScript or EPS files, make sure that all fonts specified in your file are installed in the IBM Network Color Printer. You can do this by downloading the necessary fonts. Download the fonts before you download the files that will use the fonts. If your file contains fonts that are not installed on the IBM Network Color Printer, the text in these fonts will not print correctly and may not print at all. With some applications, you can include fonts when you create PostScript files. See your application software for information.

- If you change your mind about a file, select the filename in the Files to Download list and click the Remove button.
 - Click on Remove All (Macintosh only) to remove all files from the Files to Download list.
7. To change attributes of a job, select it and click the Options button. This displays the Options dialog box.

8. Specify the following information and click on the OK button:

Copies—Specify the number of copies you want by entering the number in the Copies text box.

Brightness—Change the Brightness setting if a file prints too dark or too light. Select 85% for a substantially lighter image, 115% for a substantially darker image, or one of the options in between.

Some applications, including Adobe Photoshop, provide transfer functions that let you specify density settings for an image. If the file you are printing includes transfer functions, the Downloader utility's Brightness options will have no effect on your printout. For more information on using transfer functions, see the documentation for your application.

(append) 'showpage'—This option adds a "showpage" PostScript language command at the end of the print job. Some applications omit this necessary PostScript language command when they generate EPS files. In most cases, you do not need to use this option.

Select the 'showpage' option only if an EPS file fails to print without it. Select this option when printing EPS files generated by these applications. If you select this option unnecessarily, extra blank pages may print.

9. Repeat step 6 and step 7 for any other files and fonts, as needed.
10. When you have selected all files and fonts, click the Download button.
11. To cancel downloading, press **Command-Period** on a Macintosh, or the **Escape** key on a PC.
12. To select a different IBM Network Color Printer, click the Connect button or choose Open Printer from the File menu. Select the new IBM Network Color Printer in the dialog box that appears and click on the Connect or OK button.

Managing Printer Fonts

Before printing a PostScript or EPS file containing fonts that are not resident on the IBM Network Color Printer's hard disk, you must download the fonts to the printer. This section gives instructions for downloading and managing printer fonts.

The IBM Network Color Printer comes with 39 PostScript fonts. These include regular, bold, italic, and bold italic versions of Courier, Times, Helvetica, Helvetica Narrow, Helvetica Condensed, ITC Avant Garde, Palatino, ITC Bookman, and New Century Schoolbook. Also included are ITC Zapf Dingbats, ITC Zapf Chancery, and ITC Symbol.

Notes:.

1. The screen fonts that correspond to the printer fonts installed on the Network Color Printer are not automatically installed on your system.
2. If you are using TrueType fonts in Windows, you can print them by using the Send to Printer as Adobe Type 1 command in the Advanced Options dialog box. You *cannot* use the Downloader utility to download TrueType fonts.

PostScript Fonts and Screen Fonts

Like all PostScript fonts, the fonts included with the IBM Network Color Printer have equivalent screen fonts. The PostScript fonts are installed permanently on the IBM Network Color Printer's hard disk.

- The screen fonts for Macintosh are included with the IBM Network Color Printer. You should install any of these that are not already installed. The fonts are located on the *Customer CD-ROM* in the folder:

Language/Mac/Fonts

where *Language* is your language. See your Macintosh system documentation for instructions on installing screen fonts.

- The screen fonts for Windows are included with Adobe Type Manager. This product comes with many Adobe applications and is also available from retail software outlets.

Occasionally, you may want to use PostScript fonts that are not included with the IBM Network Color Printer. If so, both the PostScript fonts and the screen fonts must be installed on your computer. Having the screen fonts installed allows you to specify the fonts in your documents. Having the PostScript fonts installed allows you to download the fonts to the printer.

Downloading PostScript Fonts to the IBM Network Color Printer

In general, each time you print from within an application, the application automatically downloads any fonts used in your document that are not already installed on the IBM Network Color Printer, as long as the fonts are installed on your system. These fonts remain in the IBM Network Color Printer only until your document has printed. If you print the same document again, your application must download the fonts again.

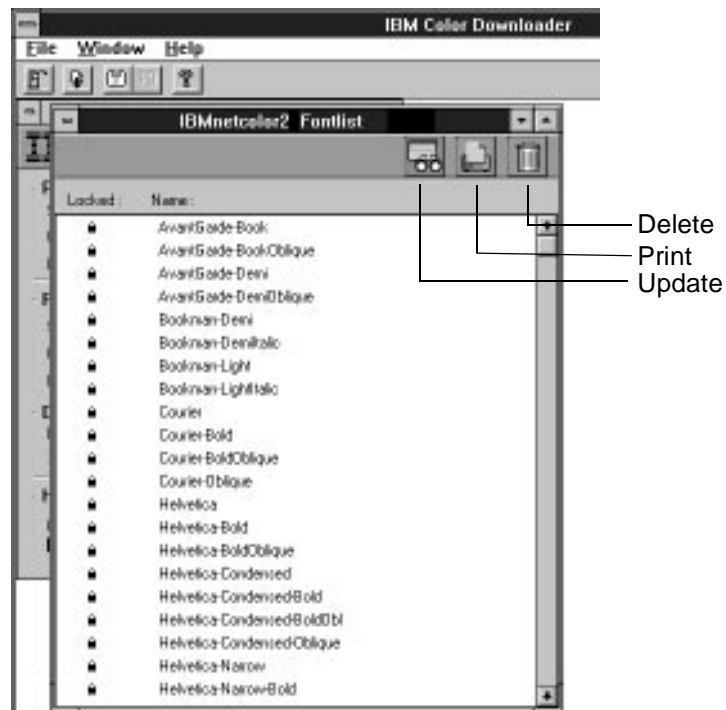
If you use one or more fonts regularly that are not already installed in the IBM Network Color Printer, you can save time by downloading them to the IBM Network Color Printer's hard disk with the Downloader. For instructions, see "To download a file or font with the Downloader utility." on page 8-4.

Fonts you download to the IBM Network Color Printer's hard disk remain installed until you remove them using the Downloader, no matter how many times the IBM Network Color Printer is turned off and on. You will probably want to download any fonts you regularly use.

Note: You cannot use the Downloader to download TrueType or Soft fonts.

To view font information:

1. Connect to a printer as described in "To connect to a printer using the Downloader utility." on page 8-2. Choose Font List from the File menu or click on the Font List button. The Font List window displays with the Update, Print, and Delete buttons in the titlebar.



2. Click on the Update button to update the information in the list.
 - Click on the Print Font List button to print the font list.
 - Highlight a font and click on the Delete button to delete the font. **Shift-click** to select multiple fonts.

Note: The 39 printer fonts included with the IBM Network Color Printer (resident fonts) are locked. Locked fonts appear with a lock icon next to the name and cannot be deleted.

Using the Spooler Utility

The Spooler utility lets you monitor and manipulate your print jobs stored in the printer queues. It lets the printer administrator track and manage all users' print jobs.

Network Color Printer jobs can be in the following queues:

- Print** Normal print jobs sent to the IBM Network Color Printer appear in the Print queue. You can move and manipulate these jobs as described below.
- Hold** Jobs sent to the Hold queue remain in the Hold queue until they are moved to the Print queue or deleted. If you need to print the same document frequently, you can send it to the Hold queue and move a copy of the job to the Print queue every time you need to print it. You can also print large jobs to the Hold queue and then move them to the Print queue when other users are not printing.
- Printed** The jobs most recently sent to the IBM Network Color Printer Print queue and printed are saved in the Printed queue. You can drag these jobs back to the Print queue to print additional copies. The number of jobs saved in the Printed queue is set by your system administrator when he or she configures the printer.

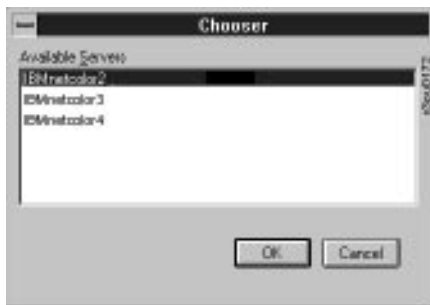
Jobs in the queues are stored on the IBM Network Color Printer's hard disk.

You can use the Spooler job log to view accounting information about jobs printed on the IBM Network Color Printer. The job log can be printed to the IBM Network Color Printer or saved as a file and viewed using other applications.

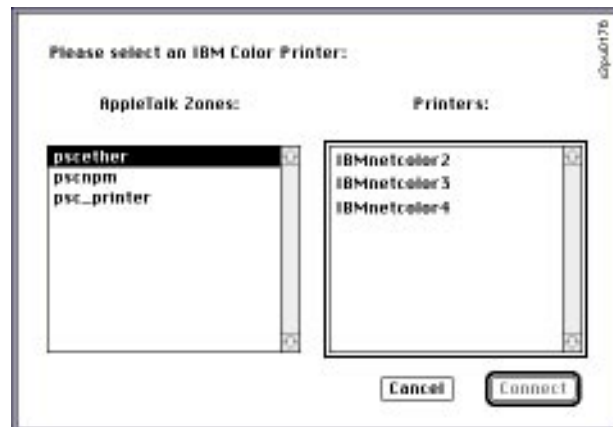
To start the Spooler utility and select a printer:

1. Double-click the Spooler icon or choose Spooler from the Windows 95 Start button.
 - Select the IBM Network Color Printer you want to work with in the Chooser window that appears.

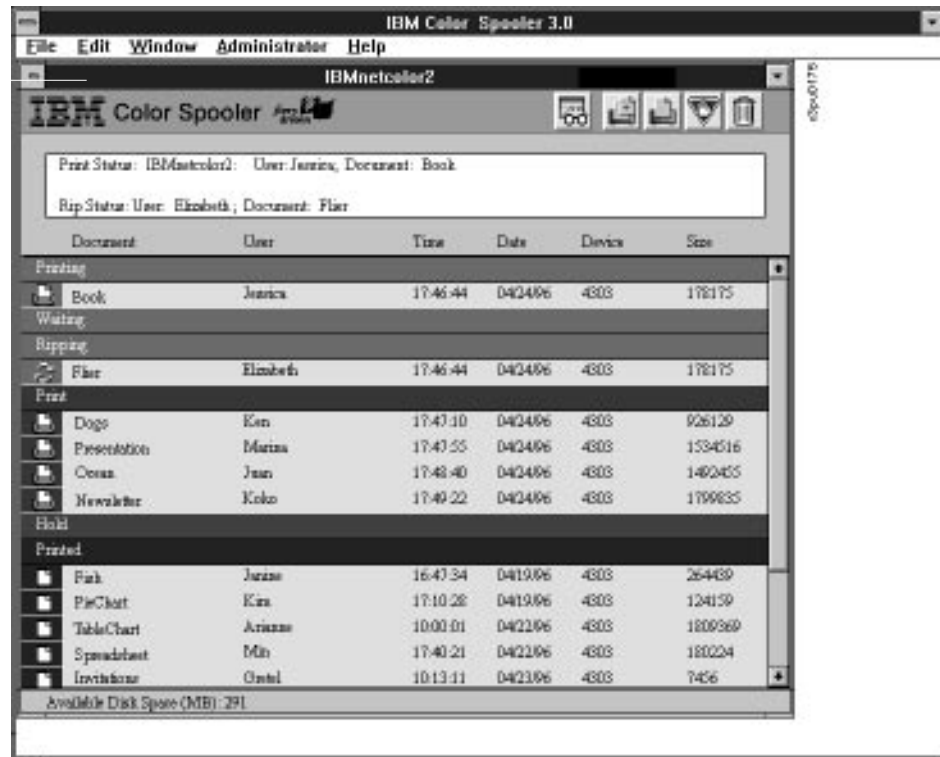
Windows:



Macintosh:



- Click the Connect or OK button. A status message is displayed as the Spooler utility connects to the printer. The Spooler main window and File, Edit, Window, Administrator and Help menus appear. (Help is Windows only.)










Each job is listed with information about the:

Document	the name of the file
User	the user who submitted the print job
Time	the time when the printer received the file
Date	the date when the printer received the file
Device	printer model
Size	the size of the file in KB






The window is split into regions that correspond to the different steps in the printing process and different queues. These are:

Printing	contains the job that is being printed.
Waiting	contains the jobs that have been processed and are waiting to print.
Ripping	contains the job that is being processed.
Print	contains jobs in the Print queue that have not yet been processed.
Hold	contains jobs in the Hold queue.
Printed	contains jobs that have been printed through the Print queue and are now in the Printed queue.

The icons provide information about the job:

Printing area		Print icon	The job that is currently printing appears in this list.
Waiting area		Wait icon	Jobs that have been processed and are waiting to be printed appear in this list. You cannot manipulate these jobs.
Ripping area		RIP icon	Jobs that have been processed but not printed appear in the scroll list, but they are dimmed because their settings cannot be changed and they cannot be moved or cancelled.
Print queue		Print icon	Jobs that are waiting to be printed that have not been processed appear with the Print icon. This list shows jobs in the order they will be printed.
Hold queue		Hold icon	Jobs in the Hold queue appear with the Hold icon. You can move the job to the Print queue to print it.
Printed queue		Printed icon	Jobs that have been printed are saved in the Printed queue and appear with the Printed icon. Jobs are stored in the Printed queue until the limit set by your system administrator in the Printer Setup is reached.
Printed queue		Alert icon	If a PostScript error occurred while a job was printing, it appears in the Printed queue with an Alert icon next to it. You can double-click the Alert icon to display the error message.

Icons also appear above the scroll list. The icons are:

	Update	Click this icon to update the information in the Spooler main window.
	Duplicate and Print	Drag a document onto this icon to duplicate it and put the duplicate in the Print queue.
	Print	Drag a document onto this icon to print it to the Print queue.
	Hold	Drag a document onto this icon to save it in the Hold queue.
	Trash	Drag a file onto this icon to delete it. You will be asked to verify that you want to delete the job. To turn off verification, choose Preferences from the Edit menu and click the Confirm File Deletion box once so that it is not checked.

Specifying Spooler Preferences

Spooler preferences set how the Spooler is updated with fresh printer information and whether the Spooler should warn you before discarding a print job.

To specify Spooler preferences:

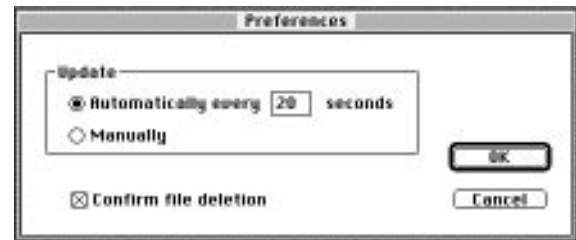
1. choose Preferences from the Edit menu.

The Preferences window appears.

Windows:



Macintosh:



Use this window to specify that the Spooler:

Update Automatically or **Update Manually**—These options let you specify whether the Spooler main window is automatically updated at an interval that you set or whether it is updated only when you choose the Update command. By default, the Spooler main window is updated automatically every 20 seconds.

Note: When automatic updating is on, data comes from the IBM Network Color Printer across the network very frequently. This data adds to the network traffic, and may slow down other network jobs. For optimum network performance, turn off automatic updating in the Spooler Preferences dialog box. When you want to view updated information in the Spooler windows, choose Update from the Window menu or click the Update button.

Confirm file deletion—Select this if you want a confirmation dialog box to appear before you delete a file.

When you have finished with the Preferences window, click on the OK button to save changes and close the window.

Managing the Spooler utility

Use this section to manage how the Spooler behaves.

To select a different IBM Network Color Printer: choose Open Printer from the File menu or click the Open Printer icon. Choose the printer you want from the displayed list and click on the OK button.

To manually update the information in the Spooler window: choose Update from the Window menu or click the Update button.

To display information about a different IBM Network Color Printer: choose Open Printer from the File menu. Select the new printer from the window that appears. A status message is displayed as the Spooler utility connects to the printer. A second Spooler main window appears and displays information about the second printer.

To move between Spooler windows: choose the printer name from the Window menu or click the different windows. You can move between the Job Log and Main windows for a server by choosing them in the menus or by clicking each corresponding window.

To organize Spooler windows on your desktop: Select Cascade in the Window menu.

To close the connection to the current IBM Network Color Printer: choose Close from the File menu.

To quit the Spooler application: choose Quit (Macintosh) or Exit (Windows) from the File menu.

Administering the Jobs on the Printer

If you have the printer password you can use the Spooler to manage all jobs on the printer, otherwise, you can manage the jobs that belong to you.

To enter the administrator password:

1. Choose Password from the Administrator menu.

This menu is active only if a password was created on the Network Color Printer.

2. The Administrator's Password window is displayed.



3. Enter the printer password in the window that appears.

This password is when the administrator configures the printer. If you enter the password, you can use the Spooler to move, override, and delete all the jobs in the printer queues.

Duplicating, Copying, Moving, and Deleting Jobs

End users can use the Spooler to move, delete, and configure their own print jobs. The IBM Network Color Printer administrator (or anyone with the printer password) can use the Spooler to move, delete, and configure jobs for all users. See "To enter the administrator password" on page 8–12 for instructions on entering the Administrator password.

You can move your jobs from the Hold queue and the Printed queue to the Print queue. If, for example, you frequently print the same file, you can send it to the Hold queue and later drag a copy of the file to the Print queue.

By copying rather than moving a job, you leave a copy of the job in the Hold queue so that you can print the job again later. You can also duplicate a job if you want to have multiple copies of a job in the same queue.

Duplicating jobs

You can duplicate jobs in the Print, Printed, and Hold queues. You may want to duplicate a job if you want to change printing parameters in the Override Print Settings window without losing the original settings.

When you duplicate a job, the IBM Network Color Printer creates a reference to the original file, so duplicate files do not require the full amount of disk space on the IBM Network Color Printer.

To duplicate a job within a queue:

1. Select the job that you want to copy by clicking its name.

The selected job is highlighted. If you want to select more than one job, **Shift-click** to select multiple, adjacent jobs; **Command-click** (Macintosh) or **Ctrl-click** (Windows) to select multiple, non-adjacent jobs in the list.

2. Choose Duplicate Job from the Edit menu. The job appears at the bottom of the queue.

Copying Jobs

You can copy jobs to other queues. Copying a job to a queue leaves the original job in the original queue, and makes a copy of the job in the new queue.

To copy a job to another queue:

1. Select the job that you want to copy by clicking its name.

The selected job is highlighted. If you want to select more than one job, **Shift-click** to select multiple, adjacent jobs; **Command-click** (Macintosh) or **Ctrl-click** (Windows) to select multiple, non-adjacent jobs in the list.

2. Hold down the **Option** (Macintosh) or **Ctrl** (Windows) key as you drag the job to either the Hold or Print queue icon or to the Hold or Print section of the job list.

A copy of the job is moved to the queue you have selected, but the original job still appears in the Hold or Printed queue so that you can print the job at another time.

Moving Jobs

Moving a job removes it from the original queue and places it in the new queue.

To move jobs between queues:

1. Select the job that you want to move by clicking its name.

The selected job is highlighted. If you want to select more than one job, **Shift-click** to make selections of adjacent jobs in the list; **Command-click** (Macintosh) or **Ctrl-click** (Windows) to select multiple, non-adjacent jobs in the list.

2. Move the selected job to another queue by dragging it to the queue icon of your choice or to the Hold or Print section of the job list.

For example, move a job that is currently in the Hold queue to the Print queue by dragging the job to the Print queue icon.

Deleting Jobs

Deleting a job removes it from the printer hard disk.

To delete a job from any of the queues:

1. Select the job that you want to delete by clicking its name.
2. Drag the selected job to the icon that looks like a trash can.

You can also choose Delete from the Edit menu to delete a selected job.

You can only delete your own jobs; system administrators who enter the printer password can delete any job.

Changing Print Settings for a Job

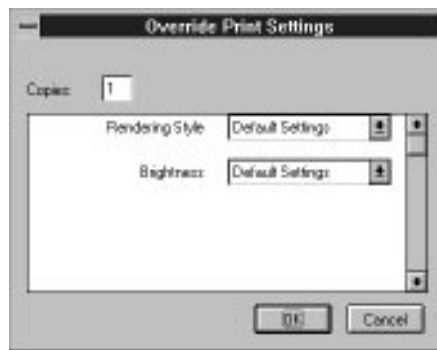
You can use the Override Print Settings window to set certain printing parameters for a job. The settings in this dialog box override the settings made in the Print Options window and the Printer Setup.

Jobs that have been processed but not printed will be dimmed. You cannot change printing parameters for those jobs.

You can only change print settings for your own jobs; system administrators who enter the Spooler password can change print settings for any job. (Macintosh)

To change print settings for a job:

1. Double-click a job or select the job and choose Override Print Settings from the Edit menu. The Override Print Settings window appears.



2. In this window you can change:
 - The number of copies in the job. (Some applications, such as Photoshop, hard-code the number of copies. This setting is ignored for documents generated using those applications.)
 - The brightness of the images in the job.
 - The Rendering Style used to convert the job's image data from RGB to CMYK.

Select the new settings. If you select Default Settings, the job will use the settings that you selected in the Print Options window when printing.

3. Click OK to make changes.

Using the Job Log

With the Network Color Printer Spooler, you can view and print a log of all the jobs printed to the Network Color Printer. You can also save the job log as a text file that you can then import into a spreadsheet or word processing application for job accounting purposes. All jobs printed to the queues, scanned from the copier, and printed through the direct connection are listed in the job log.

To display, print, and save the job log:

1. Choose Show Job Log from the Window menu.
2. Specify the period for the job log in the window that appears.

Click All to view all jobs since the job log was cleared; click Date if you want to specify a period of time for the job log.

3. Click on the OK button.

The Job Log window displays a list of all the jobs and the following information about them:

- status
- document name
- user name
- date
- start time
- end time
- process time
- file size
- print device
- paper size
- media
- number of originals
- number of color pages
- number of black and white pages
- total number of pages.

Use the scroll bar at the bottom of the window to view all the Job Log fields.

The text in the Status column provides information about the job:

OK	The job was printed normally.
ERROR	A PostScript error occurred while a job was processing. You can double-click ERROR to display the error message. A dialog box displays the PostScript error. Click OK to close the dialog box.
CANCEL	The job was cancelled before printing was completed.

4. To print the job log, choose Print Job Log from the File menu or click the Print icon at the top of the window.

The information displayed in the Job Log window prints to the current

Network Color Printer. When you print the job log, totals are printed for all appropriate columns.

5. To save the job log as a file that you can view with a different application, choose Export Job Log from the File menu or click on the Export icon at the top of the window.
6. Enter a name for the log file, and click Save.

The job log is saved as a text file, and the Job Log window reappears.

You can view the information in any application that can read a text file. Items are separated by tabs.

7. The printer administrator can also print and clear the job log from the printer operator panel.

Appendix A. Using the Fiery Calibrator

The Fiery Calibrator is a Macintosh application that enables you to improve and maintain the color consistency of your IBM Network Color Printer.

This utility enables you to:

- Maximize the color reproduction capabilities of the printer
- Ensure consistent color quality across time
- Produce consistent output across printers of the same kind
- Linearize your printer while maintaining the currently available density range
- Achieve better color matches when you're reproducing spot colors, such as PANTONE colors or other named color systems
- Create custom calibration targets and custom calibration curves

In addition, with the X-Rite DTP 32 auto scan densitometer, the standard calibration process is straightforward and quick.

How the Fiery Calibrator Works

Success in obtaining satisfactory print quality from a color laser printer depends on many factors, including the establishment and maintenance of optimal toner densities. Density is a measure of the light absorbed by a surface. The saturation of toner color is affected by such variables as room humidity and service settings, and also may drift over time. Regular calibration can compensate for day-to-day variations in densities.

The process of calibration is as follows: first, you measure the color output of your printer. The Calibrator utility then compares the measured output with the optimal densities in a target file you select and creates a correction that you can download to the printer to bring all your color output closer to the target. If you repeat this process on a regular basis, your printer will produce the same color from day to day.

The Calibrator utility offers several methods of calibrating your printer. A standard calibration uses a fixed target derived from an EFICOLOR profile, and is recommended when using EFICOLOR color management software. Additional calibration options are available for special situations and print jobs. A discussion of the different calibration options follows.

Calibrating to an EFICOLOR Profile

An EFICOLOR profile contains a target for maximum and intermediate density values for your particular printer. The profile is based on measurements which characterize the color response of your model of printer. Using the EFICOLOR profile as a target assures you that your system will be calibrated to the same density values each time.

Calibrating to a Custom Target

The Calibrator utility allows you to customize the maximum density and midtone value of the target contained in the EFICOLOR profile when you want to create your own “aimpoints.”

Editing Calibration Curves

The Calibrator brings your printer to a specific target contained in the EFICOLOR profile. After calibrating your system and examining a proof, you may decide to fine-tune the calibration to achieve a particular result. At those times, you can edit the calibration curve to meet the requirements of that specific print job.

Calibrating to a Linearized Curve

The Calibrator utility allows you to improve the overall quality of your output by linearizing your printer’s response to requested densities while maintaining the dynamic range of your printer. With the Calibrator utility, you can linearize your printer system without using a specific calibration target.

Using Default Measurements

If you do not have a densitometer, the Calibrator utility includes a default set of measurements that you can download to your printer. Default measurements may be helpful if your printer behaves like an “average” printer of the same kind and is not in need of service.

System Requirements

To use the Fiery Calibrator, you need:

- At least 1 MB RAM for the Calibrator application, along with an additional 1 MB RAM to run the EFICOLOR Processor
- 1.6 MB hard disk space for installation
- Status T Reflection densitometer
- Macintosh interface cable (recommended)

Note: To run the Calibrator utility, the Macintosh must have a Floating Point Unit (math coprocessor), which is not available on some Macintosh models, including a Power Macintosh running in emulation mode (as it does with the Calibrator utility).

A Power Macintosh and other Macintosh models without a Floating Point Unit can be used with the Calibrator utility if you install the SoftwareFPU, version 3.0, control panel. SoftwareFPU is a shareware utility that allows programs requiring a Floating Point Unit to work on computers without one. The latest version of SoftwareFPU is available from its creator, John Neil & Associates, P.O. Box 160699, Cupertino, CA 95016. (If you have questions, you can send e-mail to sales@jna.com.)

Compatibility

The Calibrator utility works with the Network Color Printer. Any Status T Reflection densitometer can be used with the Calibrator utility. These models of densitometer support automatic entry of measurements:

- X-Rite DTP 32, X-Rite 404, and X-Rite 408
- Gretag D 186P

Note: The X-Rite DTP 32 should use EPROM version 4927. Versions 4701, 3B24, and 3630 (no longer being shipped) are also supported, but versions 4812 and 4820 may not work. (The EPROM version is shown briefly on the densitometer display on starting up and later on the Macintosh screen while the densitometer is being configured.)

What is Included with the Calibrator Utility

The Calibrator utility is provided on diskettes and on the *Customer CD-ROM*. These files are included:

- Fiery Calibrator, version 1.0
- EFICOLOR Processor version 2.0
- EFICOLOR Preferences
- EFICOLOR profile for your printer
- Measurements folder

Note: Remember, the Calibrator utility is supported in a Macintosh environment only.

Installing the Fiery Calibrator

This section lists the steps required to install your IBM Color Calibrator utility.

1. Insert the *Customer CD-ROM* into the CD-ROM drive of your Macintosh.
2. Double-click on the *Customer CD-ROM* icon to open it.
3. Double-click on the MAC folder to open it.
4. Double-click on the UTILS folder to open it.
5. Click on the items that you wish to install and drag them to the location on your hard disk in which you want to keep them. You might want to keep the utilities in a folder with your other utilities or create a new folder for them.

IBM recommends that you place the Calibrator-related software as follows:

- EFICOLOR Processor - should go into the System folder of your startup disk. Do **not** put it in the Extensions folder.
- EFICOLOR Preferences - should go into the Preferences folder in the System folder of your startup disk

- EFICOLOR Profiles - should go into the ColorSync Profiles folder in the Preferences folder in the System folder of your startup disk
- Measurements folder - should go in the same folder as the Calibrator application

Information on installing the other user software for your IBM Network Color Printer is described in the main body of this book. Be sure to check README files on the *Customer CD-ROM* or diskettes and any release notes for the latest information on all software products.

Before You Begin

Before you start to calibrate your printer, you should familiarize yourself with your densitometer and make sure you have the necessary cable for connecting it to the modem port of your Macintosh. If you need help calibrating and zeroing your densitometer and connecting it to your Macintosh, see "Setting Up and Calibrating Your Densitometer" on page A-27.

If you do not have a densitometer, you may find a service bureau that will measure your printed swatches on their densitometer and create a calibration or supply you with the values to enter manually. Or, you may improve your printed output by linearizing your printer or by downloading default or custom calibration curves.

Standard Calibration Procedure

Calibration reflects and refers to the particular printing environment that encompasses options selected in Printer Setup menu (in the printer operator panel), Print dialog box options (in the printer driver), and other variables such as toner and paper type.

Calibrating your printer with a densitometer is a five-stage process:

1. First, set up a controlled print environment on the printer, by removing any existing calibration from the printer and making sure your printing options reflect the type of printing you do.
2. Next, connect and set up your reflection densitometer.
3. Set up the Calibrator preferences to the way you want to measure color density and print a page of calibration patches. Each patch on the page represents a specific requested density.
4. Measure the density of the patches with the densitometer to establish the relationship between the requested density and the actual density your printer delivered. Instructions for measuring the patches are provided for several models of densitometer.
5. Choose the Download To Printer command to send calibration curves to your printer. The calibration curves specify the settings the printer should use to obtain predictable color density values.

Checking Your Printer Setup

To obtain a useful calibration, your printer should be in a known state when you start the process. In this state, your calibrations are being used, and print options reflect the way you usually print. You print and measure calibration patches and download the calibration to your printer under known conditions.

To check your print environment:

1. Remove any existing calibrations from your printer.

If you have previously calibrated your printer with the Calibrator utility, check for an active calibration (see “Checking the Date of Last Calibration” on page A–20). If a calibration is loaded, remove the calibration as described in “Removing a Calibration from a Printer” on page A–20.

If you previously calibrated your printer with another calibration program, you must first remove this calibration from your printer.

2. In the setup menus for the printer, select these options:

- In the Queue Setup menu, set ENABLE DIRECT to YES to download calibrations.
- In the Printer Setup menus, select CMYK for COLOR MODE. The Calibrator utility only supports CMYK mode.
- In the Network Setup menus, under AppleTalk Setup, set ENABLE APPLE TALK to YES.

For information about using and navigating through the setup menus, see the *Administrator's Guide*.

Setting Up the Densitometer

Configure and zero your reflection densitometer to prepare for measuring the printed patches. For details, consult the manual that came with your densitometer. “Setting Up and Calibrating Your Densitometer” on page A–27 gives basic information about setting up four densitometer models that are supported by the Calibrator utility.

The data interface cable that comes with these densitometers plugs into the modem port of the Macintosh and supplies measurements directly to the Calibrator Measurements window. When you use the interface cable, you don't have to type numeric values into the window. To set up an X-Rite DTP 32 with a PowerBook, see “To connect the X-Rite DTP 32 to a PowerBook” on page A–28.

Printing the Calibration Patches

To print the calibration patches, start the Calibrator utility, select a profile or measurements file, and check your Calibrator Preferences. Within the Calibrator Preferences dialog box, click on the Print Patches button.

To start the Calibrator and select a profile or measurements file:

1. Make sure the appropriate printer is selected in the Macintosh Chooser.
2. Double-click on the Calibrator utility icon.
3. Click on the welcome screen, then choose Query Printer from the Calibration menu.

An information screen appears which tells you whether a calibration is loaded or not. If a calibration is loaded, remove the calibration before proceeding. To do so, choose Remove from Printer on the Calibration menu, click on Proceed, then click on OK.

4. Choose Page Setup from the File menu. Set the paper size to Letter or A4, as appropriate. Click on the OK button.
5. Choose New Measurements from the File menu.

The EFICOLOR Profiles Directory dialog box appears, containing a list of the EFICOLOR profiles available in your ColorSync Profiles folder. The last profile used is selected.

6. Click on the Network Color Printer profile and then click on Select.

The Calibrator Preferences dialog box appears on your screen.

To set Calibrator Preferences:

1. In the Calibrator Preferences dialog box, note the name of the printer. It should be the name of the printer you want to calibrate. If it is another printer, click on the Chooser, select a zone (if your network has zones), select the printer, and then click on the Connect button.
2. In the Calibrator Preferences dialog box, click on either Densitometer or Manual to specify the input source.

Choose Densitometer if you have one of the supported densitometers connected to your Macintosh. Your measurements will be automatically entered into the Measurements window.

Choose Manual if your densitometer is not supported or if your densitometer is not connected to your Macintosh. You will have to type the measurements into the Measurements window manually.

3. If you selected Densitometer as the input source, choose your make and model of densitometer from the Protocol pop-up menu. Confirm that the communication settings match the settings on your densitometer.

Communication settings are conventions that control communications between your computer and your densitometer. To communicate with each other, your densitometer and your computer must be set to the same data format and transmission speed.

When you choose your make and model of densitometer from the Protocol pop-up menu, the communication settings change to reflect the default for your densitometer, as follows:

- For the X-Rite DTP 32, the settings are:
 - Baud rate - 9600
 - Parity - none
 - Data bits - 8
 - Stop bits - 1IBM recommends that you use the default settings.
- For the X-Rite 404, X-Rite 408, and Gretag D 186P, the settings are:
 - Baud rate - 1200
 - Parity - none
 - Data bits - 8
 - Stop bits - 1

For additional information about supported densitometers, see “Setting Up and Calibrating Your Densitometer” on page A-27

4. If you are using an X-Rite DTP 32, skip to step 7.

If you are using an X-Rite 404, X-Rite 408, or a Gretag D 186P, choose the number of measurements per row. IBM recommends using the default (3 per row) to reduce the effect of local variations.

5. Click on 3 if you want to measure all three color patches per row for additional precision.
6. Click on 1 to measure one color patch in each row.

Note: You can switch between one and three measurements per row at any time. For example, you can use the setting for one measurement per row to measure rows of patches that look within range and then switch to three measurements per row to measure questionable patches.

7. Click on the Print Patches button. The Print dialog box appears with the name of the chosen printer at the top and the name of the selected profile at the bottom.
8. With a PostScript Level 2 driver, click on the Options button. Make sure all of the options are set to Printer’s Default, then click on OK.

The Adobe driver supplied with the printer lets you save print options. Although you may change the printer defaults for some purposes, do not override the Printer’s Defaults when printing patches.

9. Click on the Print button. The calibration page that corresponds to your densitometer model is printed.

10. If you are using an X-Rite 404 or X-Rite 408, skip to “Using Other Densitometers to Measure the Calibration Patches” on page A-10.

If you are using a Gretag D 186P, after you print the calibration patches, zero your densitometer on a white area of your printer page. Then skip to “Using Other Densitometers to Measure the Calibration Patches” on page A-10.

11. If you are using an X-Rite DTP 32, display the Main Menu before configuring your densitometer. To do so, simultaneously press the two keys on the X-Rite DTP 32 marked MENU.

The words Main Menu are displayed on the DTP 32.

12. At your Macintosh, click on the Proceed button.

If this is the first time you have used the Calibrator utility with the X-Rite DTP 32, you may see a dialog box asking you to assign a number and name to the strip setup. If so, do this and click on the Save button.

A message box indicates that the Calibrator utility is configuring the densitometer. The EPROM version is displayed briefly. When configuration is complete, a screen is displayed that asks you to select a strip setup for the Calibrator

13. On the densitometer, press PAP. If necessary, press OTHER until "FPCStrp" or the strip name you specified is displayed on the densitometer.

14. At your Macintosh, in the dialog box, click on the OK button.

You have completed the procedure for setting the Calibrator preferences. You are now ready to measure the calibration patches, as described in the next section.

Using an X-Rite DTP 32 to Measure the Calibration Patches

To measure the patches using an X-Rite DTP 32 scanning densitometer, insert one end of the page in the densitometer, and the entire column is measured automatically.

The densitometer scans the density of the first patch, automatically advances to the next patch, and automatically transmits the measured values to the Calibrator. The DTP densitometer has an adjustable strip guide to the right of the strip entrance. The correct strip guide setting for each column is displayed on the densitometer and also on your monitor in the status area at the top of the Measurements window.

After each column is scanned, the density measurements are automatically entered into the Measurements window.

In general, valid measurements for all patches fall within the range of -0.05 to 3.05. If a measurement is out of range, the Calibrator displays an alert box. If this happens, check your densitometer setup before re-measuring the strip. The Save and Save As commands are not available when the Measurements window contains an out-of-range value.

To measure calibration patches with an X-Rite DTP 32:

1. Position the pointer on the strip guide to 15.

First, you'll measure the cyan column. Slide the paper guide to the left or right until the arrow points to 15.

2. With the arrow below the cyan column pointing towards the densitometer, align the right side of the patches page with the strip guide.

The status line in the Measurements window tells you the correct strip guide setting for each pass.

3. Insert the patches page into the densitometer until it rests against the drive rollers and the motor is activated. There may be a slight hesitation before the rollers start.
4. Hold the page against the guide to prevent any skewing while the strip is being measured.

After the strip is measured, "Pass #1 of 4 OK!" is displayed in the densitometer display. "Transmitting data" also appears briefly after each pass.

If the measurements entered into the first row in the Measurements window are not within range, they are shown in bold type and you see the message, "Near-zero values expected for this row. Please calibrate your densitometer to blank paper." When you see this message, you should calibrate your densitometer. In this case, use the Auto-Cal strip provided with the X-Rite 32. If you continue to get out-of-range measurements in this first row, your printer may need service.

5. Move the strip guide to 30 and measure the magenta column.

After the strip is measured, "Pass #2 of 4 OK!" is displayed in the densitometer display.

6. Turn the patches page around so that the arrow above the yellow column is pointing towards the densitometer. Leave the strip guide set to 30.
7. Align the right side of the patches page with the strip guide and measure the yellow column.

After the strip is measured, "Pass #3 of 4 OK!" is displayed in the densitometer display.

8. Move the page guide to 15 and measure the black column.

After the strip is measured, "Pass #4 of 4 OK!" is displayed in the densitometer display. Then the Calibrator displays a message when the Measurements window is completely filled in.

You have completed the procedure for measuring calibration patches with an X-Rite DTP 32.

If you wish to save the measurements, see "To save your measurements" on page A-14.

To download the calibration curve, see "Downloading Calibration Curves" on page A-13

If you wish to view or edit either target/measured curves or calibration curves, see "Viewing and Editing Calibration Curves" on page A-21.

Using Other Densitometers to Measure the Calibration Patches

If you have connected an X-Rite 404, X-Rite 408, or Gretag D 186P densitometer to your Macintosh, your measurements are automatically entered into the fields in the Measurements window. If you are using a densitometer that is not supported by the Calibrator, or if you do not have a cable to connect your densitometer to your Macintosh, you must enter the measurements manually by typing them into the appropriate fields in the Measurements window. Procedures for using both methods are provided in this section.

The Measurements window contains four columns: cyan, magenta, yellow, and black. Each column consists of 18 rows. Each row has three numeric input fields and one calculated field. The numeric input fields correspond to the calibration patches that you printed. The calculated field displays the average of the three measurements in that row.

It is important that you measure the patches in the same order as the cursor advances through the Measurements window when you press down on the densitometer (automatic data entry) or press Tab on the keyboard (manual data entry).

When you specify one measurement per row in the Calibrator Preferences dialog box, the Calibrator utility enters the same value into all the fields of that row, including the "average" field. You can measure any one of the patches in a row.

When you specify three measurements per row, the cursor moves through the fields in the Measurements window left to right within a row and top to bottom within the column for each color component.

In general, valid measurements for all patches fall within the range of -0.05 to 3.05. If you enter a measurement that is out of range, the Calibrator displays an alert box. In this case, you cannot advance the cursor to the next field until the out-of-range measurement is corrected. Check your densitometer setup before re-measuring the patch. The Save and Save As commands are not available when the Measurements window contains an out-of-range value.

When you specify three measurements per row, the density measurements within a single row should be almost the same. When the measurements within the same row differ by more than 0.20, you see a message box. After you click OK in the message box, the measurement is displayed in bold type and the cursor advances to the next field. (When you open this measurements file in the future, the Calibrator will remind you that some of the measurements have questionable values.)

There are several steps you can take to correct for an out-of-range measurement:

- Re-measure all three patches in the row.
- Be careful not to inadvertently measure a patch in the row above or below the row you should be measuring.

- If you are entering measurements manually, check to see if you have misplaced the decimal or transposed two digits.
- If you are entering measurements automatically, double-check your setup.
- Make sure you have properly zeroed the densitometer.

If you continue to have out-of-range measurements, your printer may need service.

Entering Measurements Automatically

When your hand-held densitometer is connected to your Macintosh, and Densitometer is selected as the input source in the Preferences dialog box, the Calibrator automatically enters the measurements into the Measurements window. At the end of each row, the Calibrator enters an average value.

To measure patches automatically:

1. If you selected one measurement per row in Calibrator Preferences, center the aperture of the densitometer carefully over any color patch in the first row in the Cyan column, and measure the density.

The Calibrator enters the measurement into all three measurement fields in the first row of the Measurement window and enters the average (the same number) into the rightmost field in that row.

2. If you selected three measurements per row, measure the leftmost patch in the first row of the Cyan column.

The Calibrator enters the measurement only in the first field in the Measurements window.

If a measurement is not entered into the Measurements window, check your densitometer setup and the connector. Make sure that you have selected Densitometer as the input source in the Calibrator Preferences.

Note: The first row of patches should measure zero, or close to it. If the measurements entered into the first row in the Measurements window are not close to zero, they are displayed in bold type and you see the message, "Near-zero values expected for this row. Please calibrate your densitometer to blank paper." When you see this message, zero your densitometer. See "Setting Up and Calibrating Your Densitometer" on page A-27. If you continue to get out-of-range measurements in this first row, your printer may need service.

3. If you selected one measurement per row, measure a patch in the second row. Continue in this way until you have measured one patch in each row of each column.

The calibrator displays a message when the Measurements window is completely filled in.

To save the measurements, "To save your measurements" on page A-14.

If you are ready to download the calibration, skip to the section "Downloading Calibration Curves" on page A-13.

If you want to view or edit either target/measured curves or calibration curves, see “Viewing and Editing Calibration Curves” on page A–21.

4. If you selected three measurements per row, measure the second and third patches in the first row in the cyan column.

Continue in this way until you have measured all the patches in each column.

When you have measured all three patches in a row, the Calibrator enters the average of the three measurements into the rightmost field in the first row.

Always measure the patches in the order in which the cursor advances through the Measurements window (left to right within each row and top to bottom within each column) before moving to the next column or color.

The Calibrator displays a message when the Measurements window is completely filled in.

If you are ready to download the calibration, skip to “Downloading Calibration Curves” on page A–13.

To save the measurements, “To save your measurements” on page A–14.

If you want to view or edit either target/measured curves or calibration curves, see “Viewing and Editing Calibration Curves” on page A–21.

Entering Measurements Manually

If your densitometer is not supported by the Calibrator, or if you do not have a cable to connect your densitometer to your Macintosh, enter your measurements manually by typing the values into the fields in the Measurements window. When you finish typing one or all three measurements in a row (depending on the measurements per row setting), the Calibrator enters the average value in the rightmost field.

To measure patches manually:

1. If you selected one measurement per row in Calibrator Preferences, center the aperture of the densitometer over any calibration patch in the first row of the cyan column, and measure the density.
2. If you selected three measurements per row, measure the leftmost patch in the first row of the cyan column.
3. In the Measurements window, type the measurement in the row and field of the cyan column that corresponds to the patch you measured, and then press Tab.
4. If you selected one measurement per row, the Calibrator enters that measurement into all the fields in that row, and the cursor moves to the first field in the second row of the Cyan column.

If you selected three measurements per row, the Calibrator enters the measurement into the first field in the row, and the cursor moves to the second field in the same row.

If you selected one measurement per row, continue in this way until you have measured one patch in each row of each column.

The Calibrator displays a message when the Measurements window is completely filled in.

If you are ready to download the calibration, skip to the section “Downloading Calibration Curves” on page A–13.

To save the measurements, see “To save your measurements” on page A–14.

If you want to view or edit either target/measured curves or calibration curves, see “Viewing and Editing Calibration Curves” on page A–21.

5. If you selected three measurements per row, measure the second and third patches in the first row of the Cyan column and type in the measurements, pressing Tab after each entry.

When you have entered all three measurements in a row, the Calibrator averages the three measurements and enters the result in the rightmost field in the first row.

6. Continue in this way until you have measured all the patches in each column.

You can use the Cut, Copy, Paste, and Delete commands to assist you in entering measurements into the Measurements window.

The Calibrator displays a message when the Measurements window is completely filled in.

If you are ready to download the calibration, skip to “Downloading Calibration Curves” on page A–13.

To save the measurements, see “To save your measurements” on page A–14.

If you want to view or edit either target/measured curves or calibration curves, “Viewing and Editing Calibration Curves” on page A–21.

Downloading Calibration Curves

When you have finished measuring the color patches, the Calibrator compares the measured densities with the optimal target densities contained in the EFICOLOR profile. It then creates calibration curves that you can download to the printer.

The calibration curves you download bring your printer to an optimal level of print quality by changing its response to requested densities. After you have downloaded the calibration curves, the calibration remains resident in the printer, and all users of that printer will see the effects of calibration.

Note: If you have previously calibrated your printer with another calibration program, you must first remove that calibration from your printer.

To download calibration curves to your printer:

1. Make sure the appropriate printer is selected in the Chooser.

Select the Chooser name of the direct connection (IBMnetcolor_Direct).

If the name of the direct connection does not appear in the Chooser list, ask the system administrator to enable the direct connection on

the printer. ENABLE DIRECT Q is an item in the QUEUE SETUP menu. For more information about this setting, see the *Administrator's Guide*.

Note: The Calibrator will not download calibration curves if you are connected to one of the printer queues (Direct, Print, Printed, or Hold).

2. If the measurements file you want to download is not already open, open it.

For additional information, see “Saving and Re-opening Your Measurements” on page A–14.

3. Choose Download To Printer from the Calibration menu. The Download dialog box is displayed.
4. Click on Calibration Curves if it is not already selected. Click on Download.

You see the message, “This action will change the colors on the printer for all the users that may print to it later. Do you want to proceed with this?”.

5. Click on the Proceed button. The message, “Calibration successfully downloaded” is displayed.

Saving and Re-opening Your Measurements

Saving your calibration measurements in a file allows you to:

- Keep a record of your printer's performance
- Download calibration curves to the printer at a later time
- Save a partial set of measurements, which you can complete later
- Link your measurements to the Linear CMYK Device profile

Instructions for linking measurements to the Linear CMYK Device profile are found on page A–17. Procedures for saving and loading a measurements file follow.

To save your measurements:

1. After you have measured the calibration patches, choose Save from the File menu. The Save dialog box appears.
2. Double-click on the Measurements folder to open it. The directory displays a list of existing measurements files.

If you have more than one IBM Network Color Printer, the best way to organize your measurements files is to create a folder for each printer within the Measurements folder.

3. Type the name you want for the measurements file.

For example, you might assign the printer name and current date as the name of a measurements file.

4. Click on the Save button. The measurements file is saved in the Measurements folder under the name you assigned.

Opening a Measurements File

Opening an existing measurements file allows you to:

- Download calibration curves from measurements you made earlier
- Assess the color output of your printer over time by comparing different measurements files
- Complete a partial set of measurements
- Link a set of measurements to the Linear CMYK Device profile (see page A-17).

To open an existing measurements file:

1. Choose Open Measurements from the File menu. The Open Measurements dialog box is displayed.
2. Double-click on the Measurements folder to open it. The directory displays a list of the existing measurements files.
3. Click on the measurements file you wish to open. The Open dialog box displays the name of the profile to which the selected measurements file is linked.
4. Click on the Open button.

You see the contents of the measurements file displayed in the Measurements window. The measurements are linked to the profile that was chosen in the Save dialog box when the file was saved.

Linearizing Your Printer

When you calibrate your printer using the profile for that printer, your Calibrator utility changes the densities to match the optimal target contained in the profile.

For certain print jobs you may not want to change the range of densities you are using to conform with that target. Instead, you may want to enhance the overall quality of your output while maintaining the existing range of densities. This is especially useful if your applications do not support EFICOLOR. The Calibrator includes a Linear CMYK Device profile that you can use to linearize your printer within the existing range of densities.

Note: When you use the Linear CMYK Device profile instead of the profile for your specific printer, you sacrifice predictable color across time and consistent output across printers of the same kind. If you are using an EFICOLOR-supporting application, output from a linearized printer may not match output from other printers.

When you linearize your printer, the entire measured density range in each color channel is divided into equal steps. Equal steps in ink percentage, such as 0%, 10%, and 20% will be printed in equal steps in density and will appear as roughly equal visual steps. This gives a linear response using the range of densities available.

If you recently calibrated your printer and saved the measurements file, you do not need to use the procedure that follows to linearize your printer. Just open the measurements file and change its link from the profile for your printer to the Linear CMYK Device profile, then download that file to your printer. For instructions, see “Linking Measurements to the Linear CMYK Device Profile” on page A-17.

If you do not have a measurements file from a recent printer calibration, you will need to print and measure a page of patches, as summarized below.

To linearize your printer:

1. Using the printers setup menus, select the following settings:
 - ENABLE APPLTALK = YES (NETWORK SETUP menu)
 - ENABLE DIRECT Q = YES (QUEUE SETUP menu)
 - COLOR MODE = CMYK (PRINTER SETUP menu)

For more information on these settings, see the *Administrator's Guide*.
2. From the Macintosh Chooser, select the printer you want to linearize.
Select the name of the Network Color Printer direct queue.
3. Start the IBM Network Color Printer Calibrator.
4. Click on the Welcome screen and choose Query Printer from the Calibration menu.

An information screen informs you whether a calibration is loaded. If a calibration is loaded, remove the calibration before proceeding. (From the Calibration menu, choose Remove from Printer, click on Proceed, and then click on OK)
5. Choose Page Setup from the File menu, set the paper size to Letter or A4, as appropriate, and then click on OK.
6. Choose New Measurements from the File menu. The Profiles dialog box is displayed.
7. Click on Linear CMYK Device and then click on Select. The Calibrator Preferences dialog box in which you entered the communication and measurement preferences is displayed.
8. Click on the Print Patches button. The Print dialog box is displayed.
9. With a PostScript Level 2 driver, click on Options. Make sure that all options are set to Printer's Default, and then click on OK.
10. Click on the Print button. The Calibrator prints a test page of calibration patches.
11. Measure the calibration patches.

For additional information, see “Using an X-Rite DTP 32 to Measure the Calibration Patches” on page A-8 or “Using Other Densitometers to Measure the Calibration Patches” on page A-10.
12. Choose Save from the File menu. The Save dialog box is displayed. For additional information on saving measurements, see “Saving and Re-opening Your Measurements” on page A-14.

13. Choose Download To Printer from the Calibration Menu.
14. Click on Calibration Curves if it is not already selected. Then click on the Download button.

A message box is displayed, saying, “This action will change the colors on the printer for all users that may print to it later. Do you want to proceed with this?”

15. Click on the Proceed button. The message, “Calibration successfully downloaded” is displayed.

Note: The linear calibration will be used for all printing.

Linking Measurements to the Linear CMYK Device Profile

Your IBM Network Color Printer Calibrator is preset to link your measurements to the profile you selected when you opened the New Measurements window. However, you can choose to link your measurements to the Linear CMYK Device profile when you save a measurements file (using Save As). This is useful if you set out to calibrate your printer to a target, but later decide you'd like to linearize your printer using the same measurements.

Note: You can use the same method to link your measurements to any other profile, but you should only change the link from your printer profile to the Linear CMYK Device profile, or vice versa. Do not change the link from one printer profile to another printer profile.

To link a measurements file to the linear CMYK device profile:

1. Display the measurements in the Measurements window.
You can use measurements you just obtained with a densitometer or an existing measurements file you have opened.
2. Choose Save As from the File menu, then double-click on the Measurements folder to open it.
3. From the Profile pop-up menu, choose the Linear CMYK Device profile.
4. Type a different name for the linear measurements file.
5. Click Save.

The measurements file is saved under that name in the Measurements folder. To linearize your printer immediately, download the linear measurements to your printer. Go to step 13. on page A-17 for information on how to do this.

To linearize your printer at a later time, open the linear measurements file and download it to your printer.

Loading A Default Calibration

If you do not have a densitometer to measure printed output from your printer, you can use a default set of measurements from an “average” printer of the same make and model. When you download these measurements as a calibration to the printer, they correct the output to the extent that your

printer behaves like the printer that was used for creating the default curves. The Measurements folder installed with the Calibrator contains a default set of measurements for your printer model.

You may find that downloading calibration curves from the default measurements is preferable to using no calibration curves at all, and that the default curves give improved printed output.

The same general method is used for downloading a custom calibration. Creating a custom calibration is described on page A-25.

To download a default calibration:

1. Using the printers setup menus, select the following settings:
 - ENABLE APPLTALK = YES (NETWORK SETUP menu)
 - ENABLE DIRECT Q = YES (QUEUE SETUP menu)
 - COLOR MODE = CMYK (PRINTER SETUP menu)

For more information on these settings, see the *Administrator's Guide*.
2. In the printer control panel Setup screens, select the options Enable Appletalk, Enable Direct, and select CMYK for Color Mode.
3. From the Macintosh Chooser, select the printer you want to calibrate. Select the name of the IBM Network Color Printer direct queue.
4. Start the Calibrator and choose Open Measurements from the File menu.
5. Double-click on the Measurements folder to open it. The Open Measurements dialog box is displayed; it shows the list of measurements files in the Measurements folder.
6. Click on the default measurements file for the printer you wish to calibrate, then click on Open.

To link a measurements file to the linear CMYK Device profile:

1. Display the measurements in the Measurements window.

You can use measurements you just obtained with a densitometer or an existing measurements file you have opened.
2. Choose Save As from the File menu, and then double-click on the Measurements folder to open it.
3. From the Profile pop-up menu, choose the Linear CMYK Device profile.
4. Type a different name for the linear measurements file.
5. Click on the Save button.

The measurements file is saved under that name in the Measurements folder. To linearize your printer immediately, download the linear measurements to your printer.

To linearize your printer at a later time, open the linear measurements file then and download it to your printer.

Printing with a Calibrated Printer

When users print to a calibrated printer, the calibration curves are applied to every print job.

With applications that specify RGB color, calibration curves are applied after the RGB color values have been transformed to CMYK.

If you are accustomed to correcting colors on uncalibrated systems by changing application settings or print options, this may not be necessary when you print to a calibrated printer. Using printer defaults may give you optimal output.

If you do override printer defaults, do it on a job-by-job basis when you want to achieve particular results. The same holds true for overriding default print settings in the Spooler utility and the Downloader utility.

Among the options that should only be changed on an individual job basis when printing to a calibrated printer are:

- Brightness, Media Type, and Rendering Style settings in the Print Options dialog box and the Spooler
- Gamma settings in the Downloader

For more information about print settings and printing from applications, see the *User's Guide*.

Scheduling Calibration

Your printer has a self-calibration feature that optimizes toner densities on warm-up, after service, and at periodic intervals. You can use the Calibrator in conjunction with this feature. Using the printer's self-calibration feature alone will not necessarily bring output densities from your printer to the target values in the printer profile.

Note: You can adjust printed color from the density control panel. You can increase or decrease toner density for one or all toner colors. Make sure that these settings remain the same (preferably at a neutral position) prior to calibration with the Calibrator, and from one job to the next one. For more information, see *Operator's Guide*.

If you do not have a densitometer for measuring printed output from your system on a regular basis, you can also monitor printer output visually to help you decide when calibration is needed.

Set up a standard printing environment by selecting default printing options that correspond to the way you usually print. Then print one or more standard color pages. Besides the patches page, you can print the test page, the color pages, and the CMYK Reference page. All of these pages include fully saturated color patches and pale tints of cyan, magenta, yellow, and black. You can save and compare pages you printed at different times. If there is a noticeable change in the appearance of tints, you should calibrate or linearize your printer.

If your solid density patches (100% cyan, magenta, yellow, or black) look less saturated with time, show the pages to the CE or service representative to find out if an adjustment can be made to improve the output.

Checking the Date of Last Calibration

Before printing a job, you can check to see whether calibration curves are loaded and when the printer was last calibrated. You can get this information by querying the printer from the Calibrator utility.

To find out when a printer was last calibrated:

1. If you want to check the date of the last calibration, make sure the appropriate printer is selected in the Chooser.
2. Select the name of the direct queue. If the direct queue does not appear in the Chooser list, ask the system administrator to enable it.
3. If it is not already running, start the Calibrator by double-clicking on the Calibrator icon.
4. Choose Query Printer from the Calibration menu. The message, "Querying printer" is displayed, followed by a dialog box indicating the time and date the printer was last calibrated, the user who performed the calibration, and the profile to which the measurements file was linked.

Note: Self-calibration performed by the printer does not change the calibrator data that appears on the START page.

Removing a Calibration from a Printer

If you need to remove a calibration from your IBM Network Color Printer, you can use the Remove From Printer command.

To remove a calibration from your printer:

1. Make sure the appropriate printer is selected in the Chooser.
2. Select the name of the direct queue. If the direct queue does not appear in the Chooser list, ask the system administrator to enable it.
3. If it is not already running, start the Calibrator utility by double-clicking on the Calibrator icon.
4. Choose Remove From Printer from the Calibration menu. This message is displayed: "This will remove all corrections that might have been previously downloaded to the printer. This will affect all users. Do you want to proceed?"
5. In the message box, click on the Proceed button, then click on OK.

Viewing and Editing Calibration Curves

The Calibrator utility allows you to view information about your printer's calibration and provides tools for customizing both the target you are calibrating to and the calibration curves.

In this section, you will learn more about your remaining calibration options, such as how to:

- Interpret the information presented in the Target/Measured curves window, which compares the actual, measured densities your printer printed with the optimal, requested densities contained in the profile for your printer.
- Interpret the calibration curves displayed in the Calibration Curves window, which illustrate how the requested ink percentages must be adjusted to achieve the desired output densities.
- Tailor the target contained in the profile to your specific equipment or print requirements.
- Create a custom calibration curve when you want to achieve a result that is different from the target contained in the profile.

Calibration Options

When downloading a calibration to the printer, you have these choices:

- EFICOLOR calibration - adjusts your printer response to conform as closely as possible to the EFICOLOR target curve based on the profile for your printer. For most users, this is the preferred calibration method.
- Linear calibration - also downloaded as an EFICOLOR calibration, this makes your printer response correspond to a linear CMYK target curve. Linear calibration results in output which divides the maximum measured density for each color into equal density steps.
- Calibration with edited EFICOLOR target curves - changes the calibration target from the EFICOLOR target, within a certain range. The maximum density of the target can be changed (within plus or minus 100% of the EFICOLOR target maximum density), the midtone density can be changed (within plus or minus 100% of the EFICOLOR target midtone density), or both can be changed. This calibration adjusts your printer response to conform as closely as possible to the edited target curves.
- Custom calibration (custom response) - allows you to create or edit a calibration curve or load a transfer curve created in Adobe Photoshop. Separate curves can be downloaded for cyan, magenta, yellow, and black, or the same curve can be downloaded for all colors. The Calibrator saves one current set of custom calibration curves in the FPC Preferences. Whenever you download Custom calibration curves, these are the curves that are used, until you load a different set or edit the existing curves.
- Composite Calibration Curve - combines your custom calibration curve with an EFICOLOR calibration curve to create a composite curve. The composite curve as well as the two source curves can be viewed in the Calibration Curves window.

- **Default Calibration** - uses factory measurements from the same printer model to simulate the behavior of your printer. Its usefulness depends on just how similar your system is to the system that was measured. Given the number of variables involved, it is much better to create a baseline calibration from densitometer measurements than from factory measurements.

The standard EFICOLOR calibration options (EFICOLOR target, Linear and Default) were covered in “Standard Calibration Procedure” on page A-4. The remaining calibration options, which can be used regularly or for occasional special effects, are described in this chapter.

Comparing Target Densities with Measured Densities

The Calibrator displays four graphs that illustrate the relationship between the optimal or target densities contained in the profile and the actual, measured densities your printer delivered.

The graphs provide a quick way to detect possible problems with your printer and provide a visual reference for customizing the calibration target and creating a calibration curve. The graphs also offer a guideline as to whether your Calibrator can bring the printer to an acceptable performance level, or when a visit from a service representative or other remedy may be needed.

Because the graphs are frequently useful in diagnosing a specific problem, show them to your service representative when maintenance is required. For example, if all the curves deviate from the target in the same manner, the service representative would know that the problem is general for all color channels. On the other hand, if only one color channel differs from the target, the service representative would know to adjust only the appropriate channel.

To compare measured densities with target densities:

1. Open a new measurements file, print and measure patches, and enter values in the Measurements window. Or, open a previously created measurements file.

Either option results in a filled-in Measurements window. The View Menu is grayed out and cannot be selected until you display a Measurements window on your screen with all the measurements entered.

2. Choose Target/Measured Curves from the View menu.

You see the Target/Measured Curves window, with target curves and measured curves.

The calibration patches page is a series of ink percentage specifications. The thin blue (measured) curve shows the density measurements that correspond to the ink percentages specified for the patches. The thicker red (target) curve shows the ink densities that would be optimal for the corresponding patches, according to the EFICOLOR profile that characterizes your printer.

The objective of calibration is to bring the measured values represented by the blue curve to the target values represented by the red curve.

Based on these measurements, the Calibrator creates calibration curves, which you then download to your printer to bring your print output to the target.

Before you decide to download a calibration:

- Check each measured color channel to see that the densities increase steadily. If you detect a spike in a density curve or a sawtooth shape in one of the channels, you may want to re-measure the corresponding patches.
- Check to see how the curves of the measured and target densities compare. The closer the measured densities are to the target densities, the better the results you'll get from calibration. Still, even when the curves do not overlap at all, the Calibrator will usually be able to compensate for deviation from the target.

Look at the right edge of the graph for each color channel. The point where the measured density curve intersects the right edge represents the maximum density (Dmax).

- If the maximum measured density is the same as or slightly higher than the maximum target density, calibration can successfully bring your printer to the optimal (target) state.
- If the measured density is higher by 15% or more, printed images may exhibit contouring, banding, or quantization after calibration. This is especially noticeable if you are printing images with degradés (vignettes, ramps). In this case, you may consider using the Linear CMYK Device profile (see “Linearizing Your Printer” on page A-15) or asking your service representative to reduce the overall print density of the affected channels.
- If the maximum measured density is slightly lower than the target curve, your colors will not be as saturated as recommended. However, because the Calibrator was designed to compensate for some decrease in density, your printed images will result in minimal visual degradation as long as the density decrease is not drastic. If images look washed out even after calibration, you can ask your service representative to boost the densities.

Editing the Target Densities

When you download your measurements, the Calibrator brings the response of your printer to a target contained in the EFICOLOR profile. For important jobs, you may print a proof before you print a large run. After examining the proof, you may decide to adjust the EFICOLOR profile target to achieve a particular result. For example, the proof may be too dark overall or the magenta density may be too high. The Calibrator lets you customize the target for maximum density (Dmax) and midtones.

IBM recommends that you take the following steps to determine the best course of action. Custom calibration curves are described later in this chapter.

- Measure your printer's ink densities and download the calibration curves.
- Print from your application and examine the printed results.

- If you are dissatisfied with the printed results, either customize the calibration curve (which indirectly changes the target) or customize the target.
- Download the Composite Curves, print from your application, and examine the printed result. If you still are not satisfied, download Custom Calibration Curves and print again. (For additional information about these options, see “To download an edited calibration curve or edited target curve” on page A–26.

To edit target density and midtone curves:

1. Choose Target/Measured Curves from the View menu. The Target/Measured Curves window appears.
2. In the Target/Measured Curves window, click on Edit Target Curves, or click in any of the individual curves. The Edit Target Curves dialog box appears. This box allows you to edit the target contained in the EFICOLOR profile you are currently using.
3. To edit all four colors at once, confirm that All Same is selected. To edit a single color, click on All Same to deselect it, then click the color you want to edit.

When you deselect All Same, the individual colors become available.

4. To edit the maximum density target, drag the Max Density slider to the density level you want.

You can also select the Max Density field (using the Tab key) and type the percent change you want to make to the target density. To increase or decrease the target density slightly, click on the arrow at the appropriate end of the slider.

Changes in maximum density and midtones are relative to the target contained in the EFICOLOR profile you are using. For example, if you move the maximum density slider to 20%, you are requesting the target maximum density plus 20%.

Click on Default to return to the default target. Click on Revert to return to the last saved values.

5. To edit the midtones target, drag the Midtones slider to the level you want.

You can also select the Midtones field and type the target midtone value you want. To increase or decrease the midtone density slightly, click the arrow on the appropriate end of the slider.

6. Click on the OK button.

In the Target/Measured Curves window, the target curve is re-plotted to reflect your edited target.

Viewing Calibration Curves

The principle of calibration involves a request and a response: the ink percentage, or dot-area-coverage, that is requested (sent from the computer to the printer) and the controller's response, the ink percentage specification that it sends to the print engine. The calibration curves illustrate the mapping between the request and the response.

In the optimal case there is no need to adjust (calibrate) the printer. In this case, the mapping graphs would be a straight line (for example, 50% input is mapped in 50% output). The closer the curve is to a straight line, the closer the specific printer is to the target.

The right side of the curves represents the mapping of the requested maximum density (Dmax). When the curve intersects the right side, as opposed to the top-right corner, it means that the printer Dmax is currently higher than the recommended target values. The closer to the bottom the curve intersects the side, the more quantization will occur.

To view calibration curves:

1. Open a new measurements file, print and measure patches, and enter values in the Measurements window. Or, open a previously created measurements file.

Either option results in a filled-in Measurements window. The View Menu is grayed out and cannot be selected until you display a Measurements window on your screen with all the measurements entered.

2. Choose Calibration Curves from the View menu. The Calibration Curves window is displayed.

Creating Custom Calibration Curves

The target used by the Calibrator is the target contained in the EFICOLOR profile. This target provides optimal results when you are printing with an EFICOLOR-supporting application. You may not want to use EFICOLOR at all times, or you may feel that you can achieve better results by creating your own calibration curves. If your printed image is too dark overall, you have the option of either reducing the density of the target or reducing the output density on all calibration curves.

To create a custom calibration curve:

1. Choose Edit Calibration Curves from the Edit menu. Or, click on Edit Calibration Curves in the Calibration Curves window; or click in any individual curve in the Calibration Curves window.

The Edit Calibration Curves dialog box is displayed. This box enables you to create a custom calibration curve from scratch. Because you are not editing or otherwise modifying an existing calibration curve, there is no need to open a measurements file first.

2. To apply one calibration curve to all four colors, click on All Same. The individual colors are disabled, and the graph changes to black and white.
3. Alternatively, to apply a curve to a single color, deselect All Same, and then click on the color you want.

When you click to deselect All Same, the individual colors become available.

4. Enter the calibration values either by typing them into the fields (as custom percentages), or by plotting points on the graph with the mouse.

When plotting points, position the cursor where you want a point, and then press the mouse button. You can also drag the curve or drag in the area around the curve to get a smooth curve.

Click on the Revert button to return to the last curve saved. Click on the Default button to return to the original Input = Output curve (a 45 degree straight line).

Use the Save button if you want to apply the calibration curve in the future to get similar printed results. Use the Load button to open a set of transfer curves saved from the Calibrator or from Adobe Photoshop.

5. Click on the OK button.

In the Calibration Curves window, click on EFICOLOR Calibration to view the curves based on the EFICOLOR profile, before or after edits are applied.

Click on Custom Calibration to display your custom calibration curve.

Click Composite to display a composite of both curves. You can download any of these curves to the printer.

To download an edited calibration curve or edited target curve:

1. After editing an EFICOLOR calibration curve or creating a custom calibration curve, choose Download To Printer from the Calibration menu. The Download dialog box appears.
2. To download the EFICOLOR calibration curves, with or without changes to the target maximum densities and midtones, click EFICOLOR Calibration curves. To download curves you created, click on Custom Calibration curves. To download a composite EFICOLOR calibration curve and custom calibration curve, click on Composite Curves.

If you have previously saved a calibration curve, click on Load Curve and select the curve you want. Then select the download option you want.

3. Click on Download. In the message box, click on the Proceed button. The message, "Calibration successfully downloaded" is displayed.
4. Click on the OK button.

Setting Up and Calibrating Your Densitometer

If you wish to enter density measurements into the Measurements window manually, you can use any Status T reflection densitometer. You simply zero the densitometer, measure the densities, and enter the measurements into the Measurements window.

If you want to enter density measurements automatically, you need an X-Rite DTP 32, an X-Rite 404 or X-Rite 408, or a Gretag D 186P (polarized) densitometer, and the appropriate interface cable. You may need to order the interface cable separately.

This section provides the basic information you need to set up and use the densitometers mentioned above.

Note: Although the Calibrator supports only the X-Rite DTP 32, X-Rite 404, X-Rite 408, and Gretag D 186P, you may get satisfactory results with other models.

Setting Up the X-Rite DTP 32

The X-Rite DTP 32 comes with a Macintosh data interface cable that allows you to plug into an ADB port on your Macintosh.

Note: If you are using a Macintosh PowerBook, see “To connect the X-Rite DTP 32 to a PowerBook” on page A-28.

To connect the X-Rite DTP 32:

1. Plug the square end of the interface cable (like a modular phone plug) into the I/O port on the side of the X-Rite DTP 32.
2. Attach the round 8-pin mini-connector to the modem port on the back of your Macintosh.

The modem port is a serial port, meaning that it transmits computer information serially.

3. Attach the round 4-pin mini-connector to one of the Apple Desktop Bus (ADB) ports.

The ADB port provides power to the densitometer.

Alternatively, use the optional AC adapter (available from X-Rite) to provide power. This is the configuration used with a PowerBook.

4. If you use the optional AC adapter, plug the small connector on the adapter cable into the side of the X-Rite DTP 32 and plug the adapter into a wall outlet.

To calibrate the X-Rite DTP 32, use the Auto-Cal strip that came with the densitometer.

To connect the X-Rite DTP 32 to a PowerBook:

1. Turn the PowerBook off.
2. Connect the network cable to the PowerBook's EtherTalk port.
3. Plug the square end of the densitometer interface cable into the I/O port on the side of the X-Rite DTP 32.
4. Attach the round 8-pin mini-connector to the serial port on the PowerBook.
5. If the densitometer display indicates that densitometer battery power is low, use the external AC adapter for the densitometer.

Note: Do not connect the densitometer to the PowerBook ADB port.

6. Configure the densitometer to factory defaults and save the settings. See the manual supplied with the densitometer for details.

Factory default settings for the X-Rite DTP 32 are:

Page 1	LANG (ENG)	TONE (loud)	TYPE (ser)
Page 2	BAUD (9600)	HAND (xon)	AXMT (on)
Page 3	DPT (on)	SEP (spc)	DLIM (crlf)
Page 4	DEF (off)	X10 (off)	DAP (off)
Page 5	M/M (max)	LOCK (off)	

7. Turn on the PowerBook.
8. In the PowerBook Setup Control Panel, select Normal for Modem Controls.
9. Calibrate the densitometer, as described below.

To calibrate the X-Rite DTP 32:

1. On the X-Rite DTP 32, simultaneously press the two buttons marked MENU. The words MAIN MENU appear on the display.
2. Press the p1 key until p2 appears.
3. Press the cal key. CALIBRATION appears in the display.
4. Press the den key. CALIBRATING TRANSMISSION is displayed, followed by the words INSERT CAL STRIP.
5. Position the strip guide at 5.
6. Insert the arrow end of the Auto-Cal strip into the entrance of the X-Rite DTP 32 until the roller starts pulling the strip.

READING appears momentarily, followed by the density values and CALIBRATION OK. If UNRECOGNIZABLE STRIP appears, try cleaning the strip; for information, see your X-Rite DTP 32 operating instructions.

You are now ready to calibrate your printer. For details, see "Standard Calibration Procedure" on page A-4.

Setting Up the X-Rite 404 or X-Rite 408

When you first unpack the X-Rite 404 or X-Rite 408, the shoe, or bottom plate, is locked to the main unit.

To unlock the shoe:

1. Turn the unit upside down.
2. Hold the shoe against the unit.
3. Slide the black switch on the bottom of the unit toward the back of the unit.
4. Slowly release the shoe.

Before you can use your densitometer, you need to charge the batteries using the AC adapter. The unit should be charged before use; however, it can be operated while the batteries are being charged.

To charge the battery:

1. Confirm that the battery charger is intended for the voltage you are using. The charger is available in 115V and 230V models.
2. Plug the small connector on the adapter cable into the back of the X-Rite 404 or X-Rite 408.
3. Plug the AC adapter into a wall outlet.

The X-Rite 404 or 408 batteries should be fully charged in 14 hours.

Now you are ready to turn on the X-Rite 404 or X-Rite 408 and adjust the display.

To prepare the X-Rite 404 or X-Rite 408 for use:

1. Your X-Rite 404 or X-Rite 408 automatically turns itself on when a measurement is taken or a key is pressed.
2. Press a key on the control panel (on the top of the unit) to activate the display.
3. Turn the angle adjustment wheel (on the right side of the unit) to adjust the display so it can be viewed from your line of sight.

Before using the X-Rite 404 or 408, you need to confirm that it is properly calibrated. If it is not, you will need to calibrate it.

To check the X-Rite 404 or X-Rite 408 calibration, measure the patches on the Color Reference card that came with the X-Rite 404 or 408. Then compare the measurements with the reference values provided on the envelope in which the reference card is stored.

To see if the X-Rite 404 or X-Rite 408 needs calibration:

1. Set the Reference status to REF OFF:
 - a. Press the zero key once to display the Reference status. You see either REF OFF or REF ON.
 - b. If you see REF OFF, proceed to step 2.
 - c. If you see REF ON, press the zero key again. REF OFF is displayed.

2. Press the down arrow key on the X-Rite 404 or 408 to change the X-Rite to measurement mode. The last measurement taken with the X-Rite 404 or 408 is displayed.
3. Measure the white patch on the Color Reference card that came with your X-Rite 404 or X-Rite 408.
 - a. Place the shoe, or bottom plate, of the densitometer on the Color Reference card.
 - b. Center the target window over the white patch on the Color Reference card.
 - c. Press down on the unit and keep it pressed down until the measurement appears on the display.
4. Compare the measurement with the reference value provided on the envelope in which the Color Reference card is stored.

Status T values for white, cyan, magenta, and yellow are in the row preceded by the letter "T" on the Color Reference card.

5. Measure the remaining five patches in numerical order.

Check each measurement against the color reference values provided by the X-Rite.

When you measure the patches, make certain that you are not inadvertently measuring a portion of the black circle around the color patches.

If any one measurement varies from the reference value by plus or minus 0.02, your densitometer needs calibration. Follow the steps in the next section, "To calibrate the X-Rite 404 or X-Rite 408".

If all of your measurements are within plus or minus 0.02 of the appropriate color reference values, skip the next section and go directly to "To zero the X-Rite 404 or X-Rite 408" on page A-31

To calibrate the X-Rite 404 or X-Rite 408:

1. Press the down arrow key and the Color key together. The display shows N cal T Y.
2. Press the Zero key to indicate Yes. You see N Qcal Y, asking if you want to use the Quick calibration.
3. Press the down arrow key to indicate that you want the extended calibration. The words SET LO are momentarily displayed. Then the current settings for the first value are displayed.
4. If necessary, change the value displayed on the X-Rite to correspond to the value on the Color Reference card.

The correct value for visual (white) is provided at the far left of the top row in the list of reference values. If the value displayed on your X-Rite is different, you need to change it to match the value provided.

To change the value displayed on the X-Rite, press the Zero key and down arrow, or the Zero key and up arrow until you see the correct value.

5. Set the reference values for cyan, magenta, and yellow values (of the white patch).

Press the Color key to advance through the component colors.

You will find the correct values in the top row on the list of reference values. If any value displayed on your X-Rite is different, you need to change it to match the value provided.

6. Press the Color key when you finish setting the yellow value.

The words SET HI appear momentarily, followed by the X-Rite's current setting for visual black.

7. If necessary, set the value for Visual (black).

Compare the value displayed on your X-Rite with the reference value for visual (black) and adjust your densitometer accordingly.

8. Enter the reference values for cyan, magenta, and yellow.

Press the Color key to advance through the component colors.

If necessary, change the values displayed on your X-Rite to correspond with the Color Reference card values.

9. Press the Color key after you set the yellow values. The display shows READ WHT.

10. Measure the white patch on the Color Reference card that came with your X-Rite 404 or 408.

Confirm that the measurement is the same as the reference value. If the measurement is off by plus or minus 0.02, repeat the calibration procedure. When you release the unit, READ BLK is displayed.

11. Measure the black, cyan, magenta, and yellow patches in the same way. All the measured values should match the corresponding Color Reference card values.

After you have confirmed that the yellow measurement matches the reference value, you are ready to zero the X-Rite. You should do this before you start calibrating your printer. Zero the X-Rite on the white area of the printer paper on which the color patches are printed.

To zero the X-Rite 404 or X-Rite 408:

1. Set the Reference status to REF ON.
 - a. Press the Zero key once to display the Reference status. You see either REF ON or REF OFF.
 - b. If you see REF ON, proceed to step 2.
 - c. IF you see REF OFF, press the Zero key once again. You see REF ON.
2. Press the down arrow key to change the X-Rite 404 or 408 to measurement mode.
3. Press the Color key until you see AUTO.
4. Position the aperture of your densitometer over the white area of the printer paper on which the color patches are printed.

To increase accuracy and maintain consistency during the measurement, place a sheet of black paper under the page on which the color patches are printed.

5. Hold the densitometer down and then press the Zero key. ALL? Z is displayed on the display.

For additional information on zeroing, see the instruction manual that came with your densitometer.

To connect the X-Rite 404 or X-Rite 408:

To connect the densitometer to your Macintosh, you will need to obtain a data interface cable from X-Rite (part number 418-79). The cable should have a square, modular phone connector on one end and an 8-pin mini-round connector on the other end.

1. Plug the square end of the interface cable (like a modular phone plug) into the I/O port on the back of your X-Rite 404 or 408 densitometer.
2. Attach the end with the round 8-pin mini-connector to the modem port on the back panel of your Macintosh or the serial port on the PowerBook.

The modem port on your Macintosh is marked with an icon that looks like a telephone handset.

Your X-Rite 404 or 408 has been calibrated, zeroed, and connected to your Macintosh. You are now ready to print and measure patches so you can download a calibration to your printer. See "Standard Calibration Procedure" on page A-4 for details.

Setting Up the Gretag D 186P

If your Gretag needs to be charged, charge it for at least 14 hours before using it. The procedure follows here.

To charge the battery:

1. Confirm that the battery charger is intended for the voltage you are using.
2. Plug the small connector on the adapter cable into the back of your Gretag.
3. Plug the AC adapter into a wall outlet.

The Gretag batteries should be fully charged in 14 hours.

Now you are ready to turn on the Gretag and adjust the display. Your Gretag turns itself on automatically when a measurement is taken or a key is pressed.

To turn on the Gretag D 186P:

Press a key on the control panel to activate the display.

Before using your Gretag, you need to confirm that it is properly calibrated. If it is not, you need to calibrate it.

To check your Gretag's calibration, first zero the densitometer. Then measure the patches on the calibration cards that came with it and compare the measurements with the reference values provided on the cards.

To see if the Gretag D 186P needs calibration:

1. On your Gretag densitometer, press the F key until you set the function to "Meas." (measurement), the mode to Density, and the filter selection to Auto.
2. Zero your densitometer. Measure the white patch (zero) on the yellow calibration card that came with your Gretag.
 - a. Place the densitometer on the calibration card.
 - b. Center the measuring aperture over the Zero patch on the yellow calibration card.
 - c. Press the Zero key while pressing down on the rear of the unit until a measurement appears on the display.

You see Z 0.00 briefly on the display. The "Z" stands for zero and confirms that the procedure was performed correctly.

3. Measure the color patches on each of the four calibration cards and compare the results with the reference values printed on the cards.

If any one measurement varies by plus or minus 0.01, your densitometer needs calibration. If so, follow the steps in the next section, "To calibrate the Gretag D 186P".

If all of your measurements are within plus or minus 0.01 of the reference values, skip the next section and go directly to "TO ZERO the GRETAG DENSITOMETER".

To calibrate your Gretag, you switch the function to calibration, measure the four color patches, and change each result so it matches the corresponding reference value provided on the calibration cards.

To calibrate the Gretag D 186P:

1. Press the red button on the rear of the unit at the same time as you press the F key. The function changes to "Cal."
2. Measure the Zero patch on the yellow calibration card. The display shows 0.00 and sequence II.
3. Measure the yellow patch on the appropriate card and compare the value displayed on your Gretag with the reference value on the calibration card.

4. If necessary, increase or decrease the displayed value until it matches the reference value on the card.
 - a. To decrease the value, press the down arrow Mode key.
 - b. To increase the value, press the up arrow Mode key.
5. Continue in this way until you have measured each color and adjusted the display value to the actual density.
6. When all colors are calibrated, press the F key. The densitometer displays Density and Meas.

You are now ready to use the Calibrator to print patches. See “Standard Calibration Procedure” on page A-4 for details.

Note: After printing the calibration patches from your printer and before measuring them, zero your densitometer on a white area of your printer paper.

To zero the Gretag D 186P:

1. On your Gretag densitometer, press the F key until you set the function to “Meas.” (measurement), the mode to Density, and the filter selection to Auto.
2. Position the aperture of your densitometer over a white area of the printer paper on which the color patches are printed.

To increase accuracy and maintain consistency during measurement, place a sheet of black paper under the page on which the color patches are printed.

3. Press the Zero key and, at the same time, press the rear of the densitometer downward.

You see Z (zero) briefly on the display and 0.00, which indicates that the measurement was performed correctly.

If you need additional information on zeroing, see the instruction manual that came with your densitometer.

You are ready to start measuring the calibration patches. You will need to obtain a data interface cable from Gretag. The cable should have an 8-pin, circular mini-connector on one end and an 8-pin, half-inch circular connector on the other end.

To connect the Gretag D 186P:

1. Attach the half-inch circular connector (the larger connector) to the I/O port on the back of your Gretag densitometer.
2. Plug the other end of the interface cable into the modem port on the back panel of your Macintosh or the serial port on the PowerBook.

The modem port on your computer is marked with an icon that looks like a telephone handset.

The Gretag has been calibrated, zeroed, and connected to your Macintosh, and you have printed the calibration patches. You are now ready to measure the patches so you can download a calibration to your printer.

Troubleshooting

This section presents common problems you may encounter when using your Calibrator utility, and it describes steps you can take that should correct these problems.

Common Problems

These are some of the common problems experienced in calibration.

- After calibration, the magenta (or another toner color) density is too high
Choose Target/Measured Curves from the View menu to open the Edit Target Curves dialog box. Click on All Same to deselect it, then click on Magenta (or the color whose density is too high), and move the Max Density slider to the left. Then download the Custom Calibration curve. For details, see page A–24 and page A–26.
- After calibration, the image is too dark all over.
Open the Edit Target Curves dialog box. With All Same selected, move the Max Density slider to the left. Then download the Custom calibration curve. For details, see page A–24.
- You see the message, “Near-zero values expected for this row.”
Make sure you have properly zeroed your densitometer and then re-measure. See “Setting Up and Calibrating Your Densitometer” on page A–27.

If upon visual inspection, there is toner in the row of patches, you may need to have your printer served. If the problem persists, contact your densitometer manufacturer.
- A measurement is out of range.
 - If you are entering measurements automatically, check your densitometer setup. Make sure you have selected “Densitometer” as the input source.
 - If you have entered measurements manually, check to see if you have misplaced the decimal or transposed two digits.
 - Make sure you have properly zeroed your densitometer.
- After calibration, dark patches on the test page are too saturated or too weak.
 - If the colors are too weak, check the toner level.
 - Check to see if your densitometer needs calibration.
 - Make sure that you are using the correct profile.
 - Check your printer’s density control panel settings.
 - Remove the calibration from your printer. If the problem persists, your printer needs service.
- Density measurements are not being entered into the Measurements window.

The baud rate entered in the Preferences dialog box may not match the baud rate for which the densitometer is set.

- Open the Preferences dialog box and confirm the communications setting. Make sure you have selected Densitometer as the input source.
- Check your densitometer setup, including the cable connections and densitometer mode.
- Nothing happens when you press down on the densitometer unit.
Your densitometer may have locked up. The solution is to clear the unit's memory.
 - a. Disconnect the densitometer from its power supply.
 - b. Remove the batteries from the unit for a minute.
 - c. Calibrate and zero your densitometer before continuing.
- The DTP 32 densitometer displays "Transmitting Data," but no data is transmitted. The densitometer appears stuck or frozen.
A data transmission error may have occurred.
 - a. If there are any values in the Measurements window, choose Clear Measurements from the Edit menu.
 - b. On the X-Rite DTP32, press the two keys marked MENU.
 - c. On the densitometer, press "pap". "FPCStrp" is displayed.
 - d. Re-measure the patches.
- You need to return to factory default settings for any reason.
Quit the Calibrator, delete the FPC Preferences file from the Preferences folder in your System Folder, and start the Calibrator again.

Abbreviations and Acronyms

ac	alternating current	HVT	high-voltage transformer
ADB	Apple Desktop Bus	Hz	herz
AIX	Advanced Interactive Executive	IC	integrated circuit
ANSI	American National Standards Institute	I/O	input/output
APC	automatic photoemission control	ipm	impressions per minute
C	centigrade	IPX	Internet package exchange
CCITT	Comité Consultatif International Télégraphique et Téléphonique	IPX/SPX	Internet packet exchange/sequenced packet exchange
CCW	channel command word	ISO	International Organization for Standardization
CD-ROM	compact disk read-only memory	JIS	Japanese Industry Standard
CE	customer engineer	K	kilo
CPU	central processing unit	KB	kilobyte
CRC	cyclical redundancy check	kg	kilogram
CRD	color-rendering dictionary	laser	light amplification by stimulated emission of radiation
CRT	cathode-ray tube	LED	light-emitting diode
CRU	customer replaceable unit	LGL	legal
dB	decibel	lpi	lines per inch
dc	direct current	LPR	local printer
DEV	developer	LPT	local port
dpi	dots per inch	MB	megabyte
DRAM	dynamic random access memory	mm	millimeter
DTP	desktop publishing	OHP	overhead projection
EBCDIC	extended binary-coded decimal interchange code	OPC	organic photoconductor
EC	engineering change	PC	personal computer, photoconductor
EEPROM	electronically erasable programmable read-only memory	PCB	printed circuit board
EPROM	erasable programmable read-only memory	PDF	printer description file
ERP	error recovery procedure	PEL	pixel
F	Fahrenheit	pixel	picture element
FIFO	first in first out	POST	power-on self-test
FM	fan	ppi	pixels per inch
FRU	field-replaceable unit	ppm	pages per minute
GDI	graphics device interface	RAM	random access memory
GND	ground	RH	relative humidity
GUI	graphical user interface	RIP	raster-image processor
H	fuser heater	RISC	reduced instruction set computer
		ROM	read-only memory
		SCSI	small computer system interface

SEF	short edge feed
SIMM	single inline memory module
spool	simultaneous peripheral operations online
TCP/IP	transmission control protocol/Internet protocol
TIFF	tagged image file format
TP	test point
V ac	volts alternating current
V dc	volts direct current

Glossary

The following terms are defined as they are used in this publication. If you do not find the term you need, see the *IBM Dictionary of Computing*, New York, McGraw-Hill, 1994, and the *IBM Dictionary of Printing*, G544-3973.

The following cross-references are used in this glossary:

- *Deprecated term for* refers to a term that should not be used and lists the preferred term.
- *Contrast with* refers to a term that has an opposite meaning.
- *See* refers to a preferred term with the same meaning.
- *See also* refers to related terms.

Numerics

60,000-Page Usage Kit. An air filter, ozone filter, transfer drum cleaning assembly, separation corona unit, and fuser to be installed in the printer by the operator after 60,000 prints. The 60,000-page Usage Kit is available for the low-voltage (110 V) and high-voltage (220 V) models.

A

actuator. A device that initiates mechanical motion.

administrator. See *network administrator*.

Adobe Acrobat Reader. A program used to view the online documentation supplied with the printer.

Adobe Illustrator. A professional illustration program for Macintosh computers and PCs that produces object-oriented images and prints them on PostScript laser printers.

air filter holder. The area on the back of the printer that holds the printer's air filter and gives you access to the printer's ozone filter.

air ventilation system. Horizontal slots on the back and left sides of the printer that prevent

overheating and ensure that the printer works reliably.

AIX operating system. IBM's version of the UNIX operating system.

aliasing. Unwanted effects such as Moiré patterns in an image. These patterns, called artifacts, look like two sets of parallel lines or two halftone screens superimposed.

anti-aliasing. The rendering of hard-edged objects so that they blend smoothly into the background.

Apple Desktop Bus (ADB). An interface standard for connecting a keyboard, mouse, trackball, or other input devices to an Apple Computer Macintosh SE, Macintosh II, or Macintosh IIGS computer.

AppleShare. A network operating system developed by Apple Computer, Inc., that transforms a Macintosh computer into a file server for an AppleTalk network. See also *AppleTalk*.

AppleTalk. A local area network (LAN) standard developed by Apple Computer, Inc. AppleTalk can link as many as 32 Macintosh computers, PCs, and peripherals such as laser printers.

auxiliary tray. A paper feeder tray that holds either 100 sheets of plain paper (at 80 g/m²) or 20 transparencies.

B

banding. Visible steps between shades in a gradient. See also *gradient*.

batch printing. The queueing of one or more documents to print in a separate job as a background process.

bias. An electrical charge applied to a component of the printer such as the toner cartridge, transfer drum, discharge roller, attraction roller, or

separation corona unit. The bias can be ac or dc or a combination of both.

bindery context. An option that allows you to use the printer with Novell NetWare release 4.x. Bindery context is explained in the Novell NetWare documentation.

bindery emulation mode. See *bindery context*.

bitmap. An image formed by a rectangular grid of pixels. Each pixel in the grid is assigned a value to denote its color. 1-bit images are black and white only, 8-bit images are 256 colors or grays, and 24-bit images are full color. CMYK images are 32-bit per pixel to encode 256 levels in each of 4 channels. Also called *raster image*. See also *pixel*, *raster*, *raster image*.

bond. A paper formulated with at least 80% wood pulp. Bond is the best paper to use in the printer.

burr. A thin ridge or area of roughness produced in cutting or shaping metal.

C

calibration. The process of ensuring that a device works consistently according to a set of specifications.

Calibrator utility. See *IBM Color Calibrator*.

cam. A rotating or sliding piece in a mechanical linkage used especially in transforming rotary motion to linear motion and vice versa.

cassette. A deprecated term for tray 1 or tray 2 on the printer. See *universal cassette*.

caution notice. A notice that calls attention to a condition that is potentially dangerous to people.

Chooser. A Macintosh desktop accessory that governs the selection of printer drivers.

cleaning connector cover. The electrical connector cover for the transfer drum cleaning brush.

client. In a local area network (LAN), a workstation with processing capabilities such as a PC that can request information or applications from the network's file server.

CMYK. Cyan, magenta, yellow, and black, the four basic colors used in offset printing, as opposed to red, green, and blue (RGB), the three basic colors of light.

CMYK_REF.PS file. A file consisting of PostScript color pages that enable you to specify percentages of cyan, magenta, yellow, and black and get an exact rendering of those percentages in your document.

coated paper. Paper with a surface coating applied to produce smoothness.

color lights. The lights on the printer's density control panel that turn green when you choose the color next to each light to change the density of that color.

color pages. Pages you can print to see the red, green, and blue (RGB); cyan, magenta, yellow, and black (CMYK); and PANTONE colors available on the printer.

color reference pages. See *color pages*.

color-rendering dictionary (CRD). A feature on PostScript level-2 color printers that gives improved matching between the monitor and printed output. Color-rendering dictionaries are used by the printer's PostScript interpreter when converting RGB data sent to the printer to CMYK data used by the print processor. See also *rendering style*.

color-rendering style. See *rendering style*.

COLOR SELECT push button. A button on the printer's density control panel that you press to choose a color whose density you want to change.

configuration page. A page you can print to see the printer's current server and device configuration.

connector. A means of establishing electrical flow.

consumable supplies. A deprecated term for *supplies*. See *supplies*.

container. An entity in a computer such as a storage area that holds other entities such as files or programs.

control unit. The printed circuit board (PCB) that supplies the printer's connection path to the customer's network. The control unit also gives commands to the print engine dc controller PCB to manipulate the motors, solenoids, and actuators during a print cycle. See also *actuator, solenoid*.

controller. See *control unit*.

corona. See *separation corona*.

cursor-position push buttons. The left and right arrow buttons that you press to enter text and numbers for some menu settings (such as a password or a numeric setting).

customer CD-ROM. A CD-ROM holding the user software for the printer, including the IBM Color Calibrator, Downloader, and Spooler utilities and the PostScript color pages.

customer engineer (CE). An IBM representative who services IBM products at the customer's site.

cutout. An area of the printer that is shaped ("cut out") to hold a connecting mechanism such as a tab on another part of the printer.

D

daemon. A software program that runs unattended.

danger notice. A notice used to call attention to a condition that is potentially deadly or extremely dangerous to people.

dedicated file server. In a local area network (LAN), a file server whose function is to provide services to the users of the network and to run the network operating system.

densitometer. An instrument that measures density according to a specified standard. Status T and XRite densitometers are two such color calibration devices.

density. A precise measurement of the light energy transmitted or reflected by a surface in the presence of a standard light source.

density control panel. The set of controls on the back of the printer that enable you to adjust the

density of any of the four colors: magenta, cyan, yellow, or black.

density detection sensor. A device on the printer containing a light source and a sensor. The density detection sensor measures the specific density of toner applied to known surface to regulate the quantity of toner applied during the print process. The reflectance of light on toner varies with the density and color of that toner. Thus the density detection sensor emits a specific amount of light on a toner patch and estimates the density of the toner patch by the amount of light reflected from the toner patch.

density gauge. A row of indicators on the printer's density control panel. When you make a test print, the indicator on the gauge goes on to confirm the test pattern you chose for the test print: solid colors, solid white, gradient, horizontal lines, vertical lines, or grid pattern. See also *gradient*.

dequeue. To remove items from a queue. Contrast with *queue*.

desktop. In a graphical user interface (GUI), a computer representation of day-to-day work; for example, a desktop with open file folders.

desktop publishing (DTP). The use of a PC or other platform as an inexpensive production system for generating typeset-quality text and graphics.

dialog box. In a graphical user interface (GUI), an on-screen message box that interacts with the user to convey or request information. See also *graphical user interface (GUI)*.

diagnostic mode. A mode of operation in which the printer can check itself in case of a problem.

Direct queue. A storage area for the printer that supplies a direct connection to the printer. When you submit a job to the Direct queue, the printer accepts the job when it is ready to print the job. Jobs in the Direct queue are not stored on the printer's hard disk and are not spooled. See also *Hold queue, Print Queue, Printed queue, spooling*.

discharging. The application of ac bias by the printer's discharge roller to remove any charges remaining on the transfer drum surface after separation of the paper.

diskette. A thin, flexible, magnetic disk enclosed in a protective jacket.

display panel. The area on the printer where information such as error messages is displayed.

dots per inch (dpi). The number of dots that can be printed per inch by a laser printer. Each dot is either on or off, printed or not printed. See also *pixels per inch (ppi)*.

Downloader utility. See *IBM Color Downloader*.

driver. A disk file that holds information needed to operate a peripheral such as a computer monitor or printer.

duplex printing. Printing or reproducing a document on both sides of the page so that the verso (left) and recto (right) pages face each other after the document is bound.

E

electrostatic latent image. The image formed on the photoconductor drum surface by a negative charge where the laser beam has not irradiated.

encapsulated PostScript. Any file containing the PostScript page-description language that conforms to Adobe 2.0 document-structuring conventions and the Adobe conventions that allow the file to be included by other applications.

end user. A person, device, program, or computer system that uses a computer network for data processing and information exchange.

enqueue. To put items in a queue. Contrast with *dequeue*.

error log. A file in the printer that stores error messages for later access.

error message. An operator message that you see on the display panel and that causes the **Attention** light to flash. Error messages are listed in the *Operator's Guide*.

NETCHOSTS file. A file that allows you correlate TCP/IP addresses with the names of the devices (such as printers, workstations, and PCs) those addresses represent. See also *TCP/IP*.

Ethernet. A 10-megabit, baseband local area network (LAN) that allows multiple stations to access the transmission medium at will without previous coordination, avoids contention by using carrier sense and deference, and resolves contention by using collision detection and transmission.

F

feeder. See *paper feeder*.

feeder access door. A door on the upper right side of the printer that gives you access to the paper feeder area to remove jammed paper, do maintenance tasks, or replace the transfer drum cleaning unit.

feeder access door on tray 2 paper feeder. A door on the optional tray 2 paper feeder that gives you access to the tray 2 paper feeder area to remove jammed paper.

file server. In a local area network, a PC that provides access to files for all the workstations in the network.

folder. A file used to store documents electronically.

font. A family of characters of a given size and style.

format. The size, style, kind of page, margins, printing needs, and other aspects of a printed page.

frame. The bits in a packet that are assigned to control and synchronize data transfer over a network. See also *packet*.

fuser. The part of the printer that uses heat and pressure to embed toner into the fibers of paper and make a permanent bond.

fuser access door. A door on the upper right side of the printer that gives you access to the paper output area to remove jammed paper and replace the fuser.

fuser access strap. A strap on the fuser access door that is attached to the upper locking tab on the printer's frame to keep the door from dropping down when you open it.

fuser cleaning belt. Part of the mechanism on the fuser cleaning unit that cleans the fuser upper roller.

fuser jam-release lever. A lever to the right of the paper guide inside the printer that is used to pump fuser oil from the oil bottle and to free jammed paper in the fuser area.

fuser nip width check. A procedure done by the customer engineer (CE) to get a specific measurement that shows if the right fuser roller pressure is supplied during the fusing process.

fuser oil. Oil that helps the release of paper from fuser rollers.

fuser oil bottle. A bottle inside the front door of the printer that holds the fuser oil. See also *fuser oil*.

fuser rollers. The hardware devices used to transfer the heat and pressure needed for the toned image on the paper during the fusing process.

fuser slide plate. A metal plate in the printer onto which you slide a fuser when installing it in the printer.

G

gateway address. The computer location of a device that connects two dissimilar local area networks (LANs) or that connects a LAN to a wide area network (WAN), minicomputer, or mainframe.

gradient. A test print that shows an image with multiple stripes that begin in full color on one end and gradually reduce the color content to nearly zero so that only the white paper is visible on the other end.

graphical user interface (GUI). A design for the part of a software program that interacts with the user and takes advantage of the bitmapped graphics displays of PCs. A GUI uses pull-down menus, dialog boxes, icons, and a variety of visually attractive on-screen typefaces. See also *icon*.

graphics device interface (GDI). The graphics and display technology used on computers running the Windows operating system. GDI is the equivalent of the PostScript language that sends words and pictures to the printer.

grayscale. A series of shades from white to black.

H

halftone. A printing method that simulates continuous-tone shading using dots of varying sizes laid out on a regular grid. Larger dots simulate darker tones and vice versa.

help map. A document you can print to guide you to the printer's operator panel, push buttons, and panel lights. The help map lists the menus and tells you how to access each menu.

Hold queue. A job storage area for the printer. When you submit a job to the Hold queue, the printer gets the job immediately and stores it on the hard disk. Jobs in the Hold queue do not print or clear from the printer until someone uses the IBM Color Spooler to move them to the Print queue or to discard them from the printer's hard disk. See also *Direct queue*, *Print queue*, *Printed queue*, *spooling*.

I

IBM Color Calibrator. A software utility program that enables you to keep the printer's colors at a consistent performance level across time.

IBM Color Downloader. A software utility program that enables you to print PostScript and encapsulated PostScript files directly to the printer without using the application in which the files were created. Printing with the Downloader is faster than printing from applications and also enables you to manage the printer fonts installed on the printer.

IBM Color Spooler. A software utility program that enables you to view the order and priority of print jobs, customize printer settings for jobs, delete jobs, and move jobs between queues. You can also use the Calibrator to see a list of the jobs the printer has finished.

icon. In a graphical user interface (GUI), an on-screen symbol that represents a function or resource of the software program or computer hardware. See also *graphical user interface (GUI)*.

ISO sizes. A set of paper sizes used in data processing and chosen from paper sizes that are standardized by the International Organization for Standardization (ISO).

Internet. A wide area network (WAN) connecting thousands of disparate networks in business, technology, education, government, entertainment, and research. The Internet uses the TCP/IP as the standard for transmitting information. See also *TCP/IP*.

Internet address. The numbering system used in TCP/IP internetwork communications to specify a network or host computer on a network. See also *TCP/IP*.

J

jam. See *paper jam*.

job. The result of a command to desktop publishing software to print a document. The PostScript language allows for single PostScript files holding multiple jobs and single jobs spread over multiple files.

job log. A list of the printer's last 40 jobs. The job log includes information such as user name, document name, time and date printed, and number of pages printed for each job.

jumper. A short wire used to close a break or cut out part of a circuit.

K

kilobyte (KB). 1024 bytes.

L

landscape orientation. Text and images that are printed parallel to the longer side of the paper. Contrast with *portrait orientation*.

laser (light amplification by stimulated emission of radiation). A device that emits a beam of coherent light.

laser diode. A laser that uses a forward-biased semiconductor junction as the active medium.

laser interlock. The mechanical blockage of the laser beam when the printer's front door is open. The front door panel has a plastic protrusion that fits into an opening in the printer and mechanically forces the interlock open.

latent toned image. See *electrostatic latent image*.

lens. A piece of transparent material such as glass that has two opposite regular surfaces, either both curved or one curved and the other flat. A lens is used either singly or combined in an optical instrument for forming an image by focusing rays of light.

local area network (LAN). A network of workstations within a limited area connected by high-performance cables so that users can exchange information, share peripherals such as printers, and have access to the resources of a secondary storage unit called a *file server*. See also *file server*.

M

megabyte (MB). 1,024,000 bytes.

menu-scrolling push buttons. The up and arrow buttons that you press to scroll through the menus on the printer's display panel.

microcode. The microprogramming stored on a microcode diskette. Microcode is used by the controller to manage the printer and its functions.

Microsoft Excel A graphics-oriented spreadsheet program developed by Microsoft Corporation for IBM PC-compatible computers and Macintosh computers.

monitor style. A rendering style that produces color similar to the color on a computer monitor. See also *photographic style*, *presentation style*, and *solid-color style*.

multifeed. A condition in which more than one sheet of paper at a time is inserted into the printer's feed roller. A multifeed prevention mechanism on the printer separates the extra sheets to correct the condition.

N

named color. A color that is defined according to a custom color system. For example, PANTONE 107C is a named color.

native file format. The default file format an application uses to store data on disk.

NET_WSCK.INI file. A file used by the utilities running over the TCP/IP and IPX/SPX protocols to find printers on the network.

network administrator. In a local area network (LAN), the person responsible for maintaining the network and helping its users.

Novell NetWare. A network operating system for 80286- and 80386-based DOS computers.

NuBus. Apple Computer's hardware standard for expansion cards.

O

offset. An unintentional transfer of ink such as from a freshly printed page.

operating environment. The physical environment of the printer; for example, temperature, humidity, layout, and power source.

operator panel. The area on the front of the printer with lights, push buttons, and a display panel that help you use the printer.

optical character recognition (OCR). The conversion of scanned text to editable ASCII characters using optical recognition software.

optional tray 2 paper feeder. A tray for feeding paper to the printer that comes with a universal cassette and two locking pins to fasten it to the printer. See also *universal cassette*.

P

packet. A block of data bytes that contains a header, data, and a trailer. The format of a packet depends on the network protocol used to transfer the data. See also *frame*.

PageMaker. A popular page layout program for Windows and Macintosh computers typically used for generating documents such as newsletters, brochures, reports, and books.

paper-amount indicator. A blue bar on the front of the printer below the front door. When the blue

bar has completely disappeared, it is time to add paper to the tray.

paper feeder. The mechanism that inserts paper into the printer.

paper guides. Guides on the auxiliary tray that adjust the width of the tray to fit the paper, and guides on the paper feeder trays that adjust both the width and the length of the tray to fit the paper.

paper jam. A condition in which paper wedged into the paper path prevents the printer from working.

paper path. The entire route that paper travels through the printer during processing.

paper-size indicator. A bar on the front of the printer that tells you the size of the paper in the printer.

PANTONE Matching System. A standard color-selection system for professional color printing that works with high-end illustration programs like Adobe Illustrator and PageMaker 4.0.

PANTONEC.PS. A PANTONE coded file that allows you to choose a named PANTONE color for a document rather than CMYK percentages. See also *CMYK_REF.PS file, named color, PANTONE Matching System*.

PANTONEU.PS. A PANTONE uncoded file that allows you to choose a named PANTONE color for a document rather than CMYK percentages. See also *CMYK_REF.PS file, named color, PANTONE Matching System*.

parallel-attached. See *parallel printer*.

parallel port. A port that supplies the synchronous, high-speed flow of data along parallel lines to peripheral devices, especially parallel printers. See also *parallel printer*.

parallel printer. A printer designed to be connected to a computer's parallel port. See also *parallel port*.

pel. See *pixel*.

photoconductor drum. A light-sensitive surface that when electrically charged can be discharged by the laser light beam. The remaining charged area

attracts applied toner particles from the toner cartridge and transfers the particles to the paper to produce a latent toned image. See also *electrostatic latent image*.

photoconductor drum cartridge. A customer-replaceable unit (CRU) that holds the photoconductor. See also *photoconductor drum*.

photoconductor drum cover. A cover that holds the used toner bottle in place on the photoconductor drum cartridge.

photoconductor drum shield. The orange cover installed on the photoconductor drum cartridge that protects the photoconductive surface from light when the cartridge is not installed in the printer. See also *photoconductor drum cartridge*.

photodiode. A photoelectric semiconductor device for detecting and measuring radiant energy such as light.

photographic style. A rendering style that preserves tonal relationships in images. Unprintable colors are mapped to printable colors in a way that keeps differences in lightness and slightly sacrifices color accuracy as necessary.

photosensitive drum. A deprecated term for *photoconductor drum*. See *photoconductor drum*.

PICT. A Macintosh graphics file format developed by Apple Computer. PICT files consist of separate graphics objects like lines, arcs, ovals, or rectangles that you can independently edit, size, move, or color.

pixel (pel). (1) The smallest distinct element of a raster image or an image displayed on a monitor. (2) The elementary graphical cell that constitutes an image. (3) An element of a raster pattern or a point where a toned area on a photoconductor can appear.

pixels per inch (ppi). The number of pixels per linear inch. Unlike dots, which are bilevel entities, pixels can hold multiple levels of information. See also *dots per inch*, *pixel*.

point. A unit of about 1/72 of an inch that is used to measure typefaces.

point size. See *point*.

port. An entry or exit boundary mechanism that controls and synchronizes the flow of data into and out of a processor from and to external devices such as printers and modems.

portrait orientation. Text and images that are printed parallel to the wider side of the paper. Contrast with *landscape orientation*.

PostScript. The page-description language developed by Adobe Systems that has become a standard for graphic design and layout software. PostScript files can hold both vector and raster data, and fonts are defined with PostScript coding. Many desktop publishing systems output PostScript data that is interpreted by a laser printer.

PostScript level 2. The current version of PostScript language that is used to print and display pictures and text. PostScript level 2 includes many enhancements to older versions of PostScript, including improved color matching and the ability to control printer-specific features from applications.

Power Saver. A mechanism on the printer that sets the amount of time the printer stays idle before changing to a lower power-consumption mode.

power-on self-test (POST). A series of electrical and mechanical tests made by the printer. If the tests reveal an electrical or mechanical problem, you see an error message on the display panel.

presentation style. A rendering style that does not match printed colors to displayed colors precisely. Presentation rendering is used for bright saturated colors in illustrations and graphs.

print job. See *job*.

print mode. The working mode in which the printer gets information from the controlling computer system and produces printouts. Contrast with *diagnostic mode* and *test mode*.

print quality. The quality of printouts in relation to existing standards and to printouts from earlier jobs.

Print queue. A storage area for the printer that supplies a job storage, queueing, and spooling. When you submit a job to the Print queue, the printer gets the job immediately and stores it on the printer's hard disk. Jobs in the Print queue print in the order the printer receives them. You can use the IBM Color Spooler to move jobs from the Print

queue to the Hold queue or to discard them. Finished jobs in the Print queue are automatically moved to the Printed queue if it is enabled. See also *IBM Color Spooler*.

Printed queue. A storage area for the printer that moves a finished job from the Print queue to the Printed queue for temporary storage. You can then use the IBM Color Spooler to move the job into the Print queue or the Hold queue, or to discard it from the printer's hard disk. See also *IBM Color Spooler*.

primary charging. The uniform charging of the photoconductor drum cartridge with negative potential.

process color. A mixture of CMYK inks that simulates a specified color. Process color is the traditional method for reproducing continuous-tone color images. See also *spot color*.

protocol adapter. A device for attaching a printer to a token-ring network through a parallel port. The AXIS Protocol Adapter: Token Ring, available from retail suppliers, is the recommended device. See also *token-ring network*.

Q

QuarkXPress. A page layout program developed by Quark, Inc., for Macintosh computers and PCs that accepts documents of unlimited length and includes many word processing functions.

Quickdraw. The graphics and display technology built into Macintosh computers. Quickdraw is the equivalent of the PostScript language to send words and pictures to printers.

R

raster. (1) On a computer monitor or television screen, the horizontal pattern of lines that forms the image. (2) A pattern of dots that consist of different data depths. For example, images with only black-and-white values are 1-bit (on or off), grayscale images are 8-bit (256 levels), RGB images are 24-bit (3 channels of 8 bits each), and CMYK images are 32-bit (4 channels.) Also called a *bitmap*.

raster image. A series of pixels arranged in scan lines to form an image.

raster image processor (RIP). A computer processor that renders PostScript instructions into dot patterns that are transferred to the final print medium. Most RIPs use reduced instruction set computer (RISC) processors to achieve extremely high throughput. A RIP typically includes a substantial amount of RAM to store the image as it is formed and a hard disk to buffer multiple pages. See also "*ripping*."

red, green, blue (RGB). The colors of computer monitor phosphors. RGB images are for monitor display only and are converted to CMYK images before printing.

registration. In printing, the relative print positions of images that are printed at different times. For example, when you print on preprinted forms, the registration is good if the new image is aligned correctly with the preprinted image. Print that extends beyond box edges and text that overlaps other text are examples of poor registration.

rendering style. A feature of the printer's color management software that enables the best possible translation of color from one color device to another. The color-rendering styles that you can choose using their respective color-rendering dictionary (CRD) name are monitor, photographic, presentation, and solid color. See also *rendering style*, *monitor style*, *photographic style*, *presentation style*, *solid-color style*.

relocation kit. The packaging and instructions you need to safely move the printer a substantial distance.

rendering. See *color-rendering style*, *photographic rendering*.

"ripping." Raster-image processing. See also *raster-image processor*.

route power cable. A cable that connects the power outlet on the optional tray 2 paper feeder with the power receptacle on the body of the printer.

S

scanner. A device that examines OCR, MICR, or bar code patterns, generates electrical signals corresponding to the patterns, and sends the signals to a computer for processing.

scatter. To cause a beam of radiation to diffuse or disperse.

security paper. Specially formulated paper used for negotiable documents like checks to prevent fraud.

separation. The process of separating a color image into cyan, magenta, yellow, and black, the primary color components for printing.

separation corona. The unit in the printer that electrically charges paper to attract photoconductor toner onto the paper. The separation corona has a thin, electrically charged wire inside a metal tube with a narrow opening.

separation corona mode. The voltage control mode for the separation corona. You can adjust the mode on the printer's density gauge to resolve print quality problems by choosing voltage control on, off, or on or off in response to the environment. See also *density control panel*, *density gauge*, *separation voltage*.

separation voltage. The ac corona charges applied in the separation charging unit to prevent image distortion in low-temperature, low-humidity environments. See also *separation corona*, *separation corona mode*.

server. See *file server*.

SETUP.EXE file. The file used to run a utility such as the IBM Color Downloader.

side-registration adjustment dial. A dial at the back of the printer that adjusts the side registration of the tray 2 paper feeder.

single inline memory module (SIMM). A plug-in memory module holding all the chips needed to add 256K or 1M of random access memory (RAM) to a computer.

shipping spacers. Any of several kinds of materials used to secure parts of the printer during shipping.

side output tray. When open, a tray that receives printouts faceup. The side output tray holds approximately 20 sheets of plain paper at 80 g/m².

simplex printing. Printing or reproducing in which only one side of the page is printed or reproduced.

small computer system interface (SCSI). A standard for attaching peripheral hardware to computers.

soft font. A printer font that must be transferred from a computer's or printer's hard disk to the printer's random access memory (RAM) before the printer can use the font. Also called *downloadable font*.

solenoid. An electrical conductor wound as a helix with a small pitch or as two or more coaxial helices.

solid-color style. A rendering style that maps unprintable colors to the closest printable colors when color accuracy is crucial. See also *color-rendering style*, *photographic rendering*, and *presentation rendering*.

Spooler utility. See *IBM Color Spooler*.

spooling. The use of auxiliary storage as buffer storage to reduce processing delays when transferring data between peripheral equipment and the processors of a computer.

spot color. Individual colored inks formulated to match a specified color exactly. See also *process color*.

star network. A local area network (LAN) with a centralized topology and the physical layout of a star. See also *Ethernet*, *token-ring network*.

status message. An operator message that you see on the display panel reporting on the current state of the printer.

subnet mask. A filter for Internet protocol (IP) addresses that allows those addresses local to the network to be visible to the printer.

supplies replacement log. A form provided in the *Operator's Guide* on which you note printer supplies you replace and the date and print count at the time you replace them.

SyQuest. A hard disk with removable media that is useful for the rapid transfer of large files between systems.

T

tagged image file format (TIFF). A bitmapped graphics format for scanned images of up to 300 dpi.

TCP/IP transmission control protocol/Internet protocol. The standard used by the Internet for transmitting information.

telnet. In TCP/IP, an application protocol that allows a user at one site to access a remote system as if the user's computer were locally attached. Telnet uses TCP as the underlying protocol. See also *TCP/IP*.

test mode. The operational mode in which the printer can produce print samples, accept configuration changes, and control traces.

test page. A page you can print to see samples of color and grayscale on the printer.

text orientation. The position of text as a combination of print direction and baseline direction. See also *orientation*.

thermistor. A semiconductor device whose electric resistance is dependent on temperature.

token. In a local area network (LAN), a message or bit pattern that signifies permission to transmit. The token is passed successively from one workstation to another to indicate the workstation temporarily in control of the transmission medium. See also *token-ring network*.

token-ring network. A local area network (LAN) with an architecture that combines token-passing with a hybrid star-and-ring topology. See also *Ethernet*, *star network*, *token*.

toner. In color printing, the material that forms an image on paper. Toner adheres to the exposed areas on the photoconductor drum during the developing process and is then transferred to the paper to form the developed image on the paper.

toner cartridge. A cylindrical unit that supplies the toner for one of the four colors (cyan, magenta, yellow, and black) used for color printing. Four toner cartridges fit in the printer's turret. See also *turret*.

toner cartridge position mark. A mark on the printer's turret that you use to align with the arrow on a toner cartridge.

toner projection development. The process in which, when the area on the printer's photoconductor drum cartridge that is irradiated by the laser beam comes close to the negatively charged toner on the cylinder, the difference in potential causes the toner to jump across and adhere to the drum surface.

topology. The geometric arrangement of nodes and cable links in a local area network (LAN).

top output tray. When the side output tray is closed, a tray that receives printouts facedown. The top output tray holds approximately 20 sheets of plain paper at 80 g/m².

torque. A force that produces rotation or torsion.

trailing edge. The edge of the paper that goes into the printer last as it is inserted by the paper feeder.

transceiver chip. Semiconductor material used for transmitting and receiving signals.

transfer drum. The part of the printer where a toned image on the photoconductor drum is transferred to the paper.

transfer sheet. A special plastic-like material that surrounds the transfer drum and can maintain an electrical charge for paper attraction and image transfer. See also *transfer drum*.

transmission control protocol/Internet protocol (TCP/IP). The standard used by the Internet for transmitting information.

transparency. An acetate sheet that holds information to be shown by an overhead projector.

transparency film. See *transparency*.

tray. A receptacle to store paper or transparencies for printing. The printer has three trays: tray 1 used for paper, tray 2 used for paper, and an auxiliary tray used for paper and transparencies.

TrueType. A font technology that offers scalable fonts to Macintosh and Windows systems for display on monitors and for use on printers.

turret. A rotating device in the printer that positions a selected toner cartridge for transferring toner to the photoconductor drum.

turret rotation knob. The knob on the printer's turret that you push and turn to replace a toner cartridge.

U

universal paper cassette. A receptacle that fits into the printer's tray 1 paper feeder or optional tray 2 paper feeder. The universal paper cassette accepts Letter, Legal, A4, and JIS B5 paper sizes, and holds about 250 sheets (at 80 g/m²) of plain paper.

used-toner bottle. A bottle on the inside of the printer's front door that receives excess toner not fused during the print cycle.

V

vector. Absolute coordinate points and lines in space. PostScript files can hold vector graphics (also called *object-oriented artwork*). Vector files are converted to rasters in a raster image processor (RIP) during printing, giving the vector graphics device independence.

vector image. Graphics created on computers in which the pixels are defined mathematically as lines or curves between points. Graphics created in illustration and page layout applications are also vector images.

W

warning message. An operator message that causes the **Attention** light to flash to alert you to an upcoming problem. You press ENTER to see the message on the display panel. See also *error message*, *status message*.

wire cleaner. A small metal tool stored inside the printer and used to clean the separation corona wire and the window of the density detection sensor.

workstation. In a local area network (LAN), a desktop computer that runs application programs

and serves as an access point to shared network resources.

Z

zone. In a local area network (LAN), a subgroup of networked workstations set aside and named by the network administrator to be treated as a group.

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