

Novell Nterprise™ Linux* Services

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NOVELL IPRINT ADMINISTRATION GUIDE

December 19, 2003



Novell®

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Novell iPrint Administration Guide for Novell Nterprise Linux Services

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About This Guide

This guide describes how to install, configure, and customize Novell® iPrint on Novell Nterprise™ Linux Services. It is intended for network administrators and is divided into the following sections:

- ♦ **Chapter 1, “Overview,” on page 11:** Introduction to iPrint and its components.
- ♦ **Chapter 2, “Setting Up iPrint on Your Server,” on page 17:** Installing server software and configuring your print system.
- ♦ **Chapter 3, “Setting Up iPrint on Client Workstations,” on page 21:** Distributing and installing client software on workstations and using client utilities.
- ♦ **Chapter 4, “Customizing iPrint,” on page 31:** Designing custom Web pages that users will access to find and install printers.
- ♦ **Chapter 5, “Managing Your Print System,” on page 37:** Managing your iPrint components.
- ♦ **Chapter 6, “Setting Up a Secure Printing Environment,” on page 51:** Implementing SSL and access controls for your print system.
- ♦ **Appendix A, “Configuring the iPrint HTML Interface,” on page 57:** Customizing your HTML pages using the iPrint operations.

Documentation Updates

The latest version of this *Novell iPrint Administration Guide for Novell Nterprise Linux Services* is available on the [Novell documentation Web site \(http://www.novell.com/documentation/lg/nls\)](http://www.novell.com/documentation/lg/nls).

Documentation Conventions

In this documentation, a greater-than symbol (>) is used to separate actions within a step and items in a cross-reference path.

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When a single pathname can be written with a backslash for some platforms or a forward slash for other platforms, the pathname is presented with a backslash. Users of platforms that require a forward slash, such as UNIX*, should use forward slashes as required by your software.

1

Overview

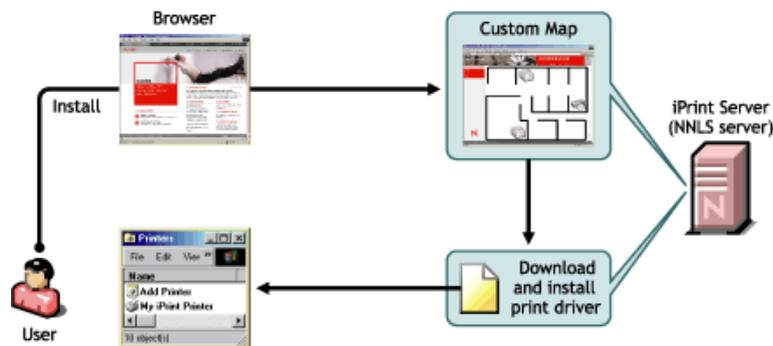
This chapter will help you understand the following:

- ♦ [What Is iPrint? \(page 11\)](#)
- ♦ [iPrint Component Overview \(page 12\)](#)
- ♦ [iPrint Solutions \(page 15\)](#)
- ♦ [What's Next \(page 16\)](#)

What Is iPrint?

iPrint lets mobile employees, business partners, and customers access printers from a variety of remote locations using existing Internet connections. Whether users are working in an office building, telecommuting from home, or attending a sales meeting in another country, iPrint ensures that they can print documents quickly, easily, and reliably.

Figure 1 Installing a Printer from a Custom Map



Using a Web browser, users point to a Web page that displays the available printers. By clicking a printer, the iPrint Client is installed (if not installed previously), the printer's driver is downloaded, and a printer is created in the user's Windows* Printers folder, enabling the user to send documents to the printer from any application on the desktop.

Using iPrint, mobile users no longer need to contact a busy network administrator to find out a printer's name, context, and the required printer driver. Instead, mobile users work within a Web browser to locate nearby printers using iPrint's default printer list or maps created by the administrator. Companies can also lower communication costs by reducing the need to fax documents between offices; instead, companies can use their existing Internet connections to print documents to remote printers.

iPrint Uses Industry Standards

iPrint uses the Internet Printing Protocol (IPP), an industry standard, to eliminate the complexities of printing over the Internet and to make location-based printing a reality.

The benefits of IPP include the following:

- ◆ Uses the IP protocol
- ◆ Provides broad vendor support
- ◆ Works over local networks and the Internet
- ◆ Provides for print data encryption (SSL, TLS)
- ◆ Provides a standard print protocol for all platforms (Windows*, Macintosh*, Linux, UNIX, etc.)

For more information about IPP, see the documents available on the [Printer Working Group \(http://www.pwg.org/ipp/index.html\)](http://www.pwg.org/ipp/index.html) Web site.

iPrint Benefits

In addition to the benefits of IPP, Novell's implementation of iPrint adds the following value:

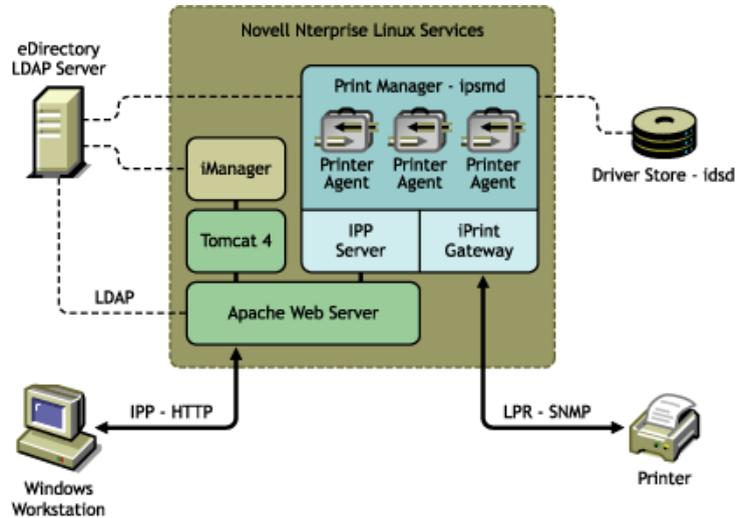
- ◆ Printer driver download and installation
- ◆ Location-based printing
- ◆ Browser-enabled printer installation interface
- ◆ Customizable user interface
- ◆ Secure information transfer

For secure printing needs, iPrint integrates with Novell® eDirectory™ to ensure that only authorized users can access the printer. Users are required to authenticate with their eDirectory username and password. Print data is also encrypted to ensure that sensitive print data is kept secure and unaltered.

iPrint Component Overview

iPrint consists of three main components: the iPrint Manager, the iPrint Driver Store, and the iPrint Client.

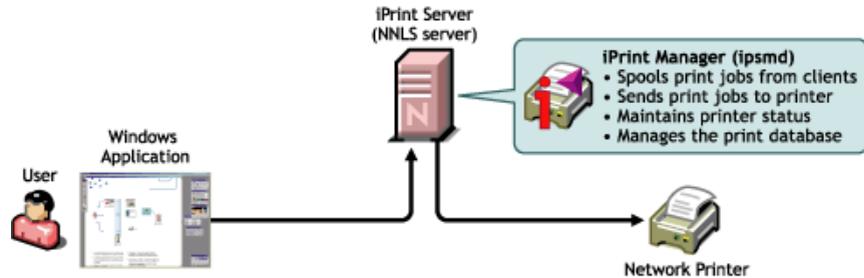
Figure 2 iPrint Component Overview



iPrint Manager

The iPrint Manager is an object in the eDirectory tree as well as software that runs on your Linux server. Print jobs are submitted to the iPrint Manager and then forwarded to the printer, when the printer is ready.

Figure 3 Print Job Flow through the iPrint Manager



A single iPrint Manager can handle print jobs for multiple printers. Depending on your network configuration (for example, remote locations) you can create additional iPrint Managers on other servers, but only one iPrint Manager can exist on any one server. Using access control, the iPrint Manager allows authorized users to print.

Printer Agent: The Printer Agent is an entry in the iPrint Manager database that represents the printer. The Printer Agent is automatically created in the database when you create a Printer object in eDirectory. The Printer Agent manages the processing of print jobs, answers queries from network clients about a print job or attributes of a printer, and generates event notification so that interested parties can be notified of printing problems and errors or changes in the status of a print job, document, or printer.

IPP server: The IPP server's main function is to handle IPP and IPPS requests from the Web server and deliver the requests to the iPrint Manager or to the iPrint Driver Store.

iPrint Gateway: The gateway maintains communication with the printers and forwards print jobs from the Print Manager to the printer using LPR over the TCP/IP protocol. Using SNMP, the gateway queries printers to get their status and other printer information.

iPrint Driver Store

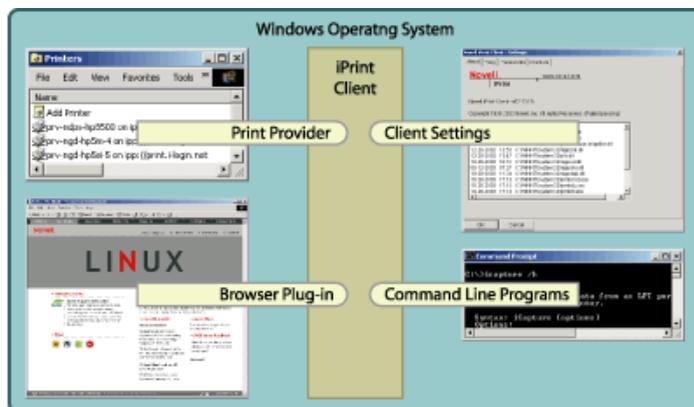
The iPrint Driver Store is a repository of printer drivers for your print system. When the first user of a printer installs that printer, the iPrint Manager requests the associated printer driver from the iPrint Driver Store and caches the printer driver for future uses. Periodically, iPrint Managers refresh their cached copies of printer drivers for the printers they are hosting with updated printer drivers from their associated Driver Store.

The iPrint Driver Store is an eDirectory object. Only one iPrint Driver Store is required on a network but, depending on your network configuration, you can create additional iPrint Driver Stores. The fewer Driver Stores running, the better because you will not have to track which Driver Store has which printer drivers.

iPrint Client

The iPrint Client is comprised of a print provider, browser plug-in, client configuration options, and command line utilities.

Figure 4 iPrint Client components



Print Provider: The iPrint Print Provider communicates directly with the Windows Spooler, which takes print jobs from applications and delivers them to a print provider. Upon start up, the iPrint Client ensures that the iPrint Print Provider is the first one in the list of providers. When a print job is destined for an iPrint printer, the iPrint Print Provider delivers the print job to the iPrint Manager.

Browser plug-in: The iPrint Client contains a browser plug-in for Internet Explorer. This OCX-based plug-in lets you install printers through your Web browser.

Client configuration: Through the iPrint Client configuration screen, you can take advantage of several advanced client features. For more information on each of these features, see the associated documentation. These features include the following:

- ◆ [Using a Proxy Server \(page 24\)](#)
- ◆ [Using the Novell iCapture LPT Port Redirector Utility \(page 25\)](#)

- ◆ [Setting Up iPrint on Terminal Servers \(page 25\)](#)
- ◆ [Managing Passwords \(page 26\)](#)

Command line utilities: The iPrint MS-DOS commands let you install iPrint printers without a Web browser and capture LPT ports to iPrint printers. These commands are useful when you have legacy applications that require output to an LPT port, or when you want to add printers through a login script.

For more information, see [“Implementing iPrint Using MS-DOS Commands” on page 26.](#)

Apache Web Server

Apache 2.0 is the Web server for iPrint. The Web server serves up HTML pages, handles secure (SSL) and nonsecure requests, and utilizes LDAP for authentication.

Novell iManager

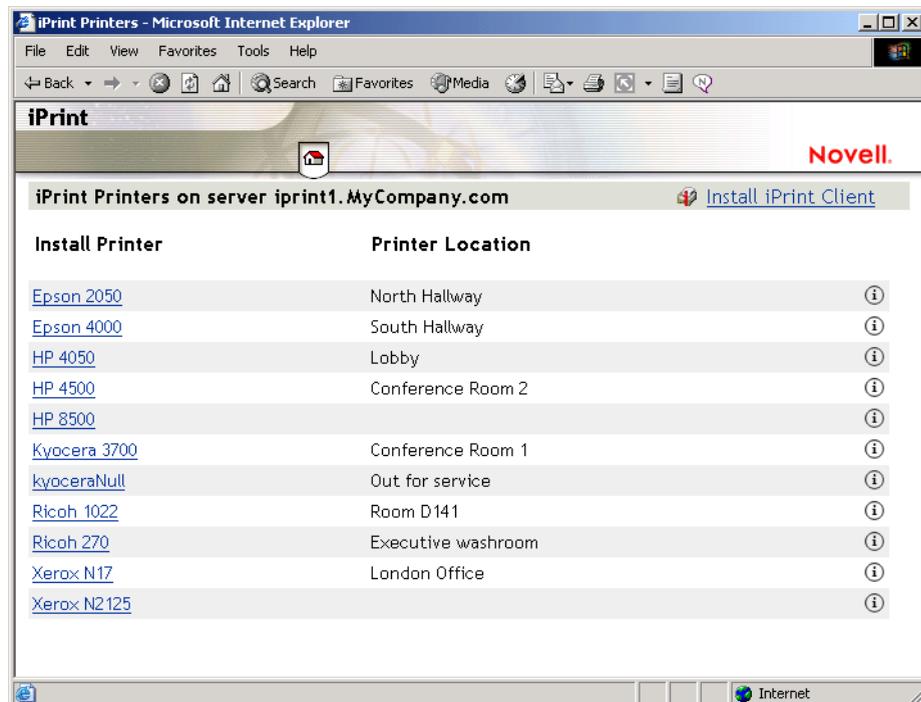
To manage iPrint, use Novell iManager. For more information, see the specific iPrint task or the [Novell iManager 2.0.x Administration Guide](#).

iPrint Solutions

Printing across the Internet

Juan is an employee working at home who wants to send a document to a printer at his office. Juan does not want to dial in to the company’s network, but he has access to the Internet.

1. Juan points his Web browser to the company’s print URL, <http://Printing.MyCompany.Com/ipp>.



2. From the Web page, Juan selects the printer to install. The iPrint Client is automatically downloaded and installed on his computer. The printer driver is also downloaded and the printer installed in his computer's Printers folder.
3. From any application on his home computer, Juan can now print to the company's printer.

Printing While Mobile

Olga is visiting her company's branch office in Paris. She needs to print a handout for an upcoming meeting. Olga knows she can print to the branch office printer, even though she does not know the printer's name, eDirectory context, make, model, or required printer driver.

1. Olga connects her laptop to the company network, clicks the iPrint link on the company's intranet Web page, then clicks a link for the branch office she is visiting. A map of the branch office and iPrint printers displays.
2. Olga locates the office she is using and clicks the icon for the printer just outside her office.
3. The printer driver is downloaded and a printer is created in her laptop's Printer folder. She didn't need to install the iPrint Client software again because she had used iPrint previously at a different branch office.
4. From her application, Olga prints her handouts for the upcoming meeting.

Printing Instead of Faxing

Dan has just returned to his hotel room in Chicago after visiting with some clients. While checking his e-mail, he is reminded that he needs to submit a report to his boss in the corporate office in New York. The report is due by 8 a.m. Although he could send the report by fax, he wants a high-quality printout in color and he does not want to incur long distance telephone charges.

1. Dan uses his laptop to dial in to a local Internet Service Provider.
2. Using his Web browser, Dan accesses the company's intranet Web page. Using the iPrint map pages, he locates an iPrint color printer adjacent to his boss' office.
3. After downloading and installing the printer driver, Dan uses his application to send the report to the printer.
4. Dan returns to the iPrint Web page and clicks the printer again to display printer management options. He monitors the printer job list to verify that his print job is completed.
5. Dan sends an e-mail to his boss telling him that the report is available at the printer.

What's Next

- ◆ **Chapter 2, "Setting Up iPrint on Your Server," on page 17:** Helps you install the server software and configure your print system.
- ◆ **Chapter 3, "Setting Up iPrint on Client Workstations," on page 21:** Helps you deploy the iPrint Client to workstations and explains the features of the client.
- ◆ **Chapter 4, "Customizing iPrint," on page 31:** With your print system set up and the client distributed to the workstation, you can focus on how your users can access and install iPrint printers.

2

Setting Up iPrint on Your Server

Complete the following tasks to create an iPrint print system:

1. **Install iPrint Software** (if not already installed).
2. **Set Up iPrint.**

Installing iPrint Software

If iPrint was selected during the Novell® Nterprise™ Linux Services (NNLS) installation, the iPrint software components were automatically installed on the server and you can skip to “**Setting Up iPrint**” on page 17.

If iPrint was not selected during the installation, you need to install the iPrint software by running the `install`. See “**Installing Nterprise Linux Services**” in the *Novell Nterprise Linux Services Installation Guide*. After the iPrint is installed on an existing Nterprise Linux server, restart Apache by entering the following command at a shell prompt: `/etc/init.d/novell-httpd restart`.

IMPORTANT: iPrint runs on Apache 2. By default, Apache has Access Logging turned on, which will log all printing-related access information. The Access Logging log files are stored in `var/opt/novell/httpd/logs`. The resulting log file might cause you to run out of disk space, causing printing to stop.

To avoid running out of disk space, periodically remove old log files, specify a different disk for the log file, or disable Access Logging. For more information, see the log directives on the [Apache Web site \(http://httpd.apache.org/docs/logs.html\)](http://httpd.apache.org/docs/logs.html).

For information on uninstalling iPrint or NNLS, see “**Uninstalling NNLS Components**” in the *Novell Nterprise Linux Services Installation Guide*.

Setting Up iPrint

After installing the Novell Nterprise Linux Services components on your server (including iPrint) you need to complete the following tasks to start and configure iPrint:

- Start Novell iManager:** iManager provides browser-based management of Novell eDirectory™. The iPrint plug-in for Novell iManager works only with Internet Explorer 5.5 with Service Pack 2 or later.

For more information, see the *Novell iManager 2.0.x Administration Guide*.

- Create an iPrint Driver Store:** An iPrint Driver Store is a service that stores printer drivers that are automatically distributed to iPrint Managers so they can be downloaded and installed on client workstations.

For more information, see “**Create a Printer**” on page 19.

- Add printer drivers:** To save an extra step when creating printers, you need to add printer drivers to the iPrint Driver Store before you create printers.

- ❑ **Create an iPrint Manager:** The iPrint Manager communicates print job information between users and printers while also providing print job management, security, and spooling.

For more information, see [“Creating Additional iPrint Managers” on page 44](#).

- ❑ **Create Printer objects:** Printer objects represent the printer in eDirectory. The Printer object lets you assign printer drivers for the printer.

For more information, see [“Creating Additional Printers” on page 45](#).

NOTE: When creating objects, use only the letters a-z, the numbers 0-9, hyphens (-), or underscores (_). Any extended characters are not permissible.

Create an iPrint Driver Store

You need only one iPrint Driver Store for your print system; however, depending on your network setup, you can add additional Driver Stores. The Driver Store must be running in order to create a Print Manager. See [“Creating Additional iPrint Driver Stores” on page 48](#) for more information about placing Driver Stores on your network.

1 In iManager, click iPrint > Create Driver Store.

2 Fill in the fields.

Click Help for explanations about the fields.

3 Click OK.

After the iPrint Driver Store is created, the daemon is loaded on the server, and you can start uploading drivers.

Add Printer Drivers

A printer driver is a software entity that directly supports a physical printer, enabling it to carry out its functions.

Hardware vendors develop printer drivers, which are specific to each printer. Most printers require different printer drivers for each operating system they interact with. You can view a complete list of printer drivers currently stored in an iPrint Driver Store, and you can add additional printer drivers from diskettes, CDs, and the workstation operating system.

Printer drivers cannot be installed from multiple diskettes. If a printer driver or other resource is shipped on more than one diskette, copy the files to a directory on a hard disk or network drive and install it from there.

The iPrint Driver Store daemon must be running to add printer drivers and the iPrint Client must be installed. To install the iPrint Client, go to http://server_IP_address/ipp and click the Install iPrint Client link. For more information on installing the client, see [Chapter 3, “Setting Up iPrint on Client Workstations,” on page 21](#).

To add printer drivers to the Driver Store:

1 In Novell iManager, click Manage Driver Store and then browse to and select the iPrint Driver Store you want.

2 Click Drivers and then select the client platform you want to work with.

3 Do one of the following:

- ◆ Click Add from file to add drivers from a printer driver .inf file

- ◆ Add from System to add drivers from the workstation you are running iManager from. The drivers installed on your workstation are made available for upload to the Driver Store. You can upload only drivers for the same platform as the workstation.
- 4 Select the driver you want, then Click OK.
 - 5 Click OK to save your changes.

Create a Print Manager

You need to create at least one Print Manager for your print system; however, depending on your network setup, you can create additional Print Managers. The Print Manager must be running in order to create printers. See [“Creating Additional iPrint Managers” on page 44](#) for more information about placing print managers on your network.

An iPrint Driver Store must exist before you can create a iPrint Manager. See [“Create an iPrint Driver Store” on page 18](#) for more information.

- 1 In iManager, click iPrint > Create Print Manager.

- 2 Fill in the fields.

Click Help for explanations about the fields.

- 3 Leave the Start Print Manager after Creation check box checked.

If you do not do this, you have to start the Print Manager by using Manage Print Manager > Manager Control in iManager or entering `/etc/init.d/novell-ipsmd start` at a command prompt.

- 4 Click OK.

After the iPrint Driver Store is created, the daemon is loaded on the server and you can start adding printer drivers. See [“Updating Printer Drivers” on page 50](#) for more information.

Create a Printer

A Print Manager must exist before you can create a Printer. See [“Create a Print Manager” on page 19](#) for more information.

- 1 In iManager, click iPrint > Create Printer.

- 2 Fill in the fields.

Click Help for explanations about the fields.

IMPORTANT: For the printer name, use only the letters a-z, the numbers 0-9, hyphens (-), or underscores (_). Any extended characters are not permissible.

- 3 Click Next, then select the drivers for this printer.

If the printer drivers for this printer are not listed, you can still create the printer. After the printer is created, add the printer drivers to the iPrint Driver Store and then associate the drivers to the printer by clicking Manage Printer > Drivers.

- 4 Click Next to create the printer.

What's Next

With iPrint now installed on your server, you need to distribute the iPrint Client to your Windows clients and determine how users will access the system.

- ◆ [Chapter 3, “Setting Up iPrint on Client Workstations,” on page 21](#): Helps you deploy the iPrint Client to workstations and explains the features of the client.
- ◆ [Chapter 4, “Customizing iPrint,” on page 31](#): With your print system set up and the client distributed to the workstation, you can focus on how your users can access and install iPrint Printers.

3

Setting Up iPrint on Client Workstations

In order for users to use iPrint, they need to install the Novell® iPrint Client software and a printer. When a user selects a printer to be installed by iPrint, iPrint checks to see if the Novell iPrint Client software is installed and then installs it if necessary. Then the printer driver is downloaded and the printer is installed in the user's Printer folder.

This chapter helps you with the following:

- ♦ [Installing the iPrint Client \(page 21\)](#)
- ♦ [Installing Printers \(page 23\)](#)
- ♦ [Updating the iPrint Client \(page 24\)](#)
- ♦ [Using the iPrint Client Settings \(page 24\)](#)
- ♦ [Implementing iPrint Using MS-DOS Commands \(page 26\)](#)
- ♦ [Manage Global Actions through Iprint.ini \(page 28\)](#)
- ♦ [Uninstalling the Novell iPrint Client \(page 30\)](#)

Installing the iPrint Client

In order for iPrint to work properly, a workstation must have the iPrint Client installed. You can distribute the client to your workstations in a variety of ways. Ensure your workstations meet the [iPrint Client Requirements](#).

- ♦ [Install the Client from iPrint Printer List Page \(page 22\)](#)
- ♦ [Deliver the Client Using Distribution Software \(page 23\)](#)

iPrint Client Requirements

Each workstation must meet the following requirements:

- Windows 95/98/ME or Windows NT*/2000/XP

IMPORTANT: To install a printer on Windows NT/2000/XP, you must have Administrator rights or be a Power User on Windows NT/2000.

- Microsoft* Internet Explorer 5.0 or later with JavaScript* enabled

Understanding the Client Installation Files

The iPrint Client is packaged in several different specialized installations. Depending on your distribution method or need, select the file you want. The following table compares the different types of installations. The client is located in `var/opt/novell/iprint/httpd/htdocs/ippdocs/`.

NOTE: Windows 9x users, you will have to restart their workstations. After the iPrint Client is installed, Windows NT/2000/XP users should not have to restart, unless they are using iPrint utilities to capture LPT ports.

iPrint Client Filename	Description
nipp.exe	Installst the iPrint Client and displays dialog boxes and progress windows that require user intervention. This is the default installation program.
nipp.zip	A WinZip version of the client that can be used with distribution software programs. After the file is unzipped, run setupipp.exe. For a list of the command line parameters that you can use with setupipp.exe, enter setupipp.exe /h at a command prompt.
nipp-s.exe	Installs the iPrint Client. A screen displays the progress of the install, but requires no user intervention. NOTE: Because Windows 9x users have to reboot their workstation after the client is installed, you should use nipp-sr.exe unless you are using a software distribution package that will reboot the workstation.
nipp-sr.exe	Installs the iPrint Client and reboots the workstation. A screen displays the progress of the install, but no user intervention required.
nipp-su.exe	Uninstalls the iPrint Client. A screen displays the progress of the uninstall, but requires no user intervention.
nipp-u.exe	Uninstalls the iPrint Client. The user confirms to uninstall the client, then a screen displays the progress of the uninstall.

Running a First-Time Client Setup

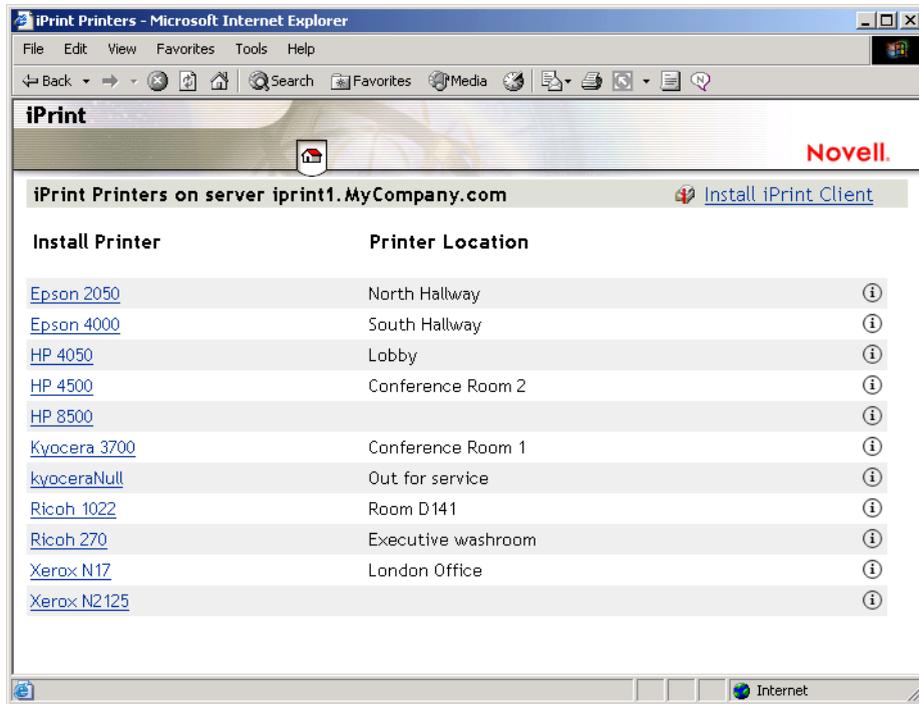
There are several ways you can deliver the iPrint Client to the workstations:

- ◆ [Install the Client from iPrint Printer List Page \(page 22\)](#)
- ◆ [Deliver the Client Using Distribution Software \(page 23\)](#)

NOTE: Windows 9x users, you will have to restart their workstations. After the iPrint Client is installed, Windows NT/2000/XP users should not have to restart, unless they are using iPrint utilities to capture LPT ports.

Install the Client from iPrint Printer List Page

You can download and install the iPrint Client from the Default Printer List Web page that resides on the server where the iPrint Manager is loaded. To reach the default page, enter the following URL in your Web browser address field: **http://server_IP_address_or_dns_name/ipp**.



For example, if the DNS name for printing is printing.mycompany.com, you would access iPrint from the following URL:

<http://printing.mycompany.com/ipp>

If you need to print through a secure port using SSL, you should use /ipps instead of /ipp in the URL. This requires you to authenticate using your eDirectory™ username and password. Using the above example, this URL would be the following:

<https://printing.mycompany.com/ipps>

Deliver the Client Using Distribution Software

When using distribution software like Novell's ZENworks®, you can use any of the iPrint Clients described in [“Understanding the Client Installation Files” on page 21](#). Most likely you will use the nipp.zip file to deliver the Client to the desktop and execute setupipp.exe with one of the command line parameters.

Installing Printers

Using the iPrint Printer List

iPrint generates a list of printers associated with a Print Manager that can be used to install the iPrint Client, install an iPrint printer, or check the status of a printer.

- 1 Enter the iPrint URL in your Web browser address field.

The Printer List Page is located at http://server_IP_address_or_dns_name/ipp.

- 2 (Conditional) If the iPrint Client is not installed, install it when prompted.
- 3 From the list of available printers, select the printer you want to install.

During the printer install, iPrint downloads and installs the printer driver, if one is associated with the printer, and adds the printer to the user's Printer Folder. The first time a printer is installed, printer drivers are forced to the workstation, even if the workstation contains a newer driver. Periodically, the iPrint Client checks to see if a newer driver is available. iPrint Managers refresh their cached copies of printer drivers for the printers they are hosting with updated printer drivers from their associated Driver Store.

Creating Location-based Printing Web Pages

Location-based printing lets users select printers based on locations by using a list view or a map. Using a list view, printer locations can be displayed using HTML pages broken down by building, office location, eDirectory context, etc. You configure the lists in a way that best suits the users' needs. For an example of using a list view, see `/var/opt/novell/iprint/httpd/htdocs/ippdocs/examples/example2/innerweb.htm`.

For more information, see [“Creating Printer Lists” on page 34](#).

Using the iPrint Map Designer, you can create maps of printer locations by using drag-and-drop technology. After the maps are created, they can be posted on a Web server for users to access. When users view the maps, they can find a printer close to their location and then click its icon. The client software (if not yet installed) and the printer are installed on their workstation. For an example of using a list view, see `/var/opt/novell/iprint/httpd/htdocs/ippdocs/examples/example1/innerweb.htm`.

For more information on using the iPrint Map designer, see [“Creating Location-Based Maps with iPrint Map Designer” on page 31](#).

Updating the iPrint Client

Periodically, users will need updates to the Novell iPrint Client. You will need to decide on how you want to manage this. You can allow iPrint to automatically update the clients or you can choose to distribute a newer client using a software distribution package like Novell's ZENworks®.

See [“Updating the iPrint Client Automatically” on page 28](#) for more information.

Using the iPrint Client Settings

Using a Proxy Server

A proxy server sits between a client and another server that the client is trying to communicate with. Often proxy servers are used in conjunction with a firewall to keep internal addresses private while exposing only the proxy server's address to external users. If you are using a proxy server and have users that need to submit print jobs through a proxy server, you can use the iPrint Client's Proxy setting. The client sends all print-related requests, like a print job, to the proxy server. The proxy server then redirects the print job to the correct iPrint server.

For example, Juan is a laptop user and has installed and printed to a variety of iPrint printers at the company's headquarters. While out on the road, Juan wants to submit a report to his boss. Rather than sending the report by e-mail or fax, Juan decides to send it to the printer near his boss. When he tries to send the report to the printer, he receives an error that the printer cannot be found. He knows that the company uses a firewall and a proxy server. He types the proxy server address in the iPrint Proxy settings, then tries to print the report again. This time the print job is accepted. The

print job travels from his laptop to the proxy server. The proxy server redirects the print job to the printer's iPrint Manager, where the print job is spooled and forwarded to the printer.

To set the proxy server address in iPrint:

- 1 Click Start > Programs > Novell iPrint > iPrint Client Settings > Proxy.
- 2 Check the Use a Proxy Server for Printing check box, then specify its URL.
- 3 Click OK.

To disable using a proxy server, uncheck the check box.

Setting Up iPrint on Terminal Servers

You can set up iPrint on a terminal server to allow terminal server clients to install and print to iPrint printers.

Installing the iPrint Client on a Terminal Server

- 1 Log in to the terminal server with Administrator or equivalent rights.
- 2 Install the iPrint Client.

The iPrint Client can be downloaded from the iPrint default page or by copying and executing `nipp.exe` from the iPrint server `/var/opt/novell/iprint/httpd/htdocs/ipdocs`.

NOTE: On terminal servers, the client auto update will not work. To update the client with a newer release, you must install it manually.

Configuring iPrint for Terminal Server Clients

You can configure iPrint to work in any of the following ways, depending on the rights the terminal server client has.

- ♦ **Install user printers only:** User printers can be installed and deleted only by the user who installed the printer. User printers are not available to other users on the workstation. This is the default
- ♦ **Install workstation printers only:** Workstation printers can be installed and deleted only by users with sufficient rights. After a workstation printer is installed, all users using the workstation can print to it.
- ♦ **Try to install workstation printer first:** If the user has insufficient rights to install the printer, the printer is installed as a user printer.

To configure the iPrint for terminal server clients:

- 1 Log in to the terminal server with Administrator or equivalent rights.
- 2 Click Start > Programs > Novell iPrint > iPrint Client Settings.
- 3 Click Terminal Server, then select the configuration option you want.
- 4 Click OK.

Using the Novell iCapture LPT Port Redirector Utility

The Novell iCapture LPT Port Redirector lets you capture LPT ports and redirect the output to iPrint printers. Novell iCapture is installed when you install the iPrint Client. Before using the LPT

Port Redirector, you must have iPrint printers installed on the workstation and the iPrint Manager and Printer Agents must be up and running. This feature is not available on terminal servers.

For example, Olga uses a legacy MS-DOS application to run reports. The application can print only to an LPT port. With the iPrint Client installed, Olga installs an iPrint printer on her workstation and uses Novell iCapture to capture an LPT port. iCapture redirects any data sent to the LPT to the iPrint printer. Olga can now run her MS-DOS application from his her Windows workstation and send print jobs to an iPrint printer.

- 1 Click Start > Programs > Novell iPrint > iPrint Client Settings > iCapture.
- 2 Select the port you want to capture.
- 3 Click Select Printer, select the iPrint printer you want, then click Capture.

If the printer you want is not listed, check to see that the Printer Agent is up and running and that the printer has been installed as an iPrint printer.

- 4 Click OK.

You can also use the LPT Port Redirector to end a printer capture by selecting the port and clicking End Capture.

IMPORTANT: Existing port assignments are not displayed, and iPrint port assignments will supersede all other port assignments. iPrint port assignments remain in effect, even after the workstation restarts, until you end the capture.

Managing Passwords

Use the Passwords tab to manage passwords for iPrint.

- 1 Click Start > Programs > Novell iPrint > iPrint Client Settings > Passwords.
- 2 Select the realms you want to change.

Realms are directories, trees, or servers that you logged in to while the workstation has been up.

- 3 Use the buttons to perform the desired action.
- 4 Click OK.

Implementing iPrint Using MS-DOS Commands

The following MS-DOS commands let you install iPrint printers without a Web browser and capture LPT ports to iPrint printers. These commands are useful when you have legacy applications that require output to an LPT port, or when you want to add printers through a login script.

- ♦ `icapture.exe`
- ♦ `iprintcmd.exe`

Using Icapture.exe to Capture Printer Ports

Icapture.exe is an MS-DOS command line utility that lets you capture LPT ports and redirect the output to iPrint printers. The utility is installed when you install the iPrint Client, and it can be used at a MS-DOS window command line, called from a batch files, or called from a login script.

IMPORTANT: Icapture.exe requires that the iPrint printer be installed before the command is run. You can install a printer from the MS-DOS window command line using `iprintcmd.exe`.

Use the following parameters when executing the `icapture.exe` command.

Parameter	Description
LPTx or L=x where <i>x</i> is the port number	The port you want to capture.
P= <i>printer_name</i>	The name of the printer that appears in the Printers Folder after the iPrint printer is installed.
EndCap	Ends the capture to the specified port. NOTE: Captured ports remain captured, even through a workstation restart, until you end the capture.
Show	Displays the status of currently captured ports and their associated printers.

Syntax

```
ipaptureparameters
```

Examples

For example, to capture a printer named Printer1 to port number 2, you would enter either:

```
icapture l=2 p=printer1
```

or

```
icapture lpt2 p=printer1
```

To end the capture, you would enter either:

```
icapture endcap l=2
```

or

```
icapture endcap lpt2
```

Using Iprntcmd.exe to Install iPrint Printers

If you need to install an iPrint printer but cannot use a Web browser, you can use the `iprntcmd.exe` command at a MS-DOS prompt. This command can install, remove, or set a printer as the default printer. It is most often used in login scripts in conjunction with the `icapture.exe` command. Use the following parameters when executing the `iprntcmd.exe` command.

Parameter	Description
add	Installs the specified printer.
default	Sets the specified printer as the default.

Parameter	Description
remove	Removes the specified printer.
temporary	Installs the specified printer for this session only. When the workstation is rebooted, the printer is removed.

Syntax

```
iprntcmd iprint_printer_url parameters
```

Examples

To install a printer named ColorPrinter1 and set it as the default printer, you would enter the following for nonsecure printing:

```
iprntcmd ipp://printing.mycompany.com/ipp/ColorPrinter1 /add /default
```

```
iprntcmd http://printing.mycompany.com:631/ipp/ColorPrinter1 /add /default
```

NOTE: When using the http://, you need to specify the port number.

To install a printer named ColorPrinter1 and set it as the default printer, you would enter the following for secure printing:

```
iprntcmd https://printing.mycompany.com/ipps/ColorPrinter1 /add /default
```

Manage Global Actions through Iprint.ini

A configuration file named `iprint.ini` file is located in `/var/opt/novell/httpd/htdocs/ippdocs/` on each server where iPrint is installed. This file controls the following actions:

- ◆ [Updating the iPrint Client Automatically \(page 28\)](#)
- ◆ [Creating an Installed Printer Name Profile \(page 29\)](#)
- ◆ [Installing User Printers \(page 29\)](#)
- ◆ [Setting Printer Persistence \(page 30\)](#)

Updating the iPrint Client Automatically

When a user starts his machine, iPrint checks the default printer to ensure the user is using the latest Novell iPrint Client. When needed, a newer client is installed. Using a configuration file, you can control how this update takes place.

An `iprint.ini` configuration file is located in `/var/opt/novell/iprint/httpd/htdocs/ippdocs/` on each server where iPrint is installed. This file controls whether the user is prompted before the updated client is installed or the updated client is installed without user intervention. When the client is installed without user intervention, the user still sees the installation program.

- 1** Using a text editor, edit the `var/opt/novell/iprint/httpd/htdocs/ippdocs/iprint.ini`.
- 2** Change the `AllowAutoUpdate` setting for the desired behavior.
- 3** Save the file.

IMPORTANT: The `iprint.ini` file should be synchronized across all servers where iPrint and an iPrint Manager are running.

- 4 (Optional) If you want to use one of the specialized iPrint Client installs, rename `/var/opt/novell/iprint/httpd/htdocs/ippdocs/nipp.exe` to `nipp.old` and then rename the specialized client install to `nipp.exe`.

For information on the different client installs, see [“Understanding the Client Installation Files” on page 21](#)

NOTE: After the iPrint Client is updated, Windows 9x users will have to restart their machines. Windows NT/2000/XP users should not have to immediately reboot, unless they are using iPrint utilities to capture LPT ports.

Creating an Installed Printer Name Profile

By default, the installed printer name on the client follows the full UNC/URL format: `\\ipp://dns_name\printer_name`. An example of a printer name in this format is `\\ipp://Printing.MyCompany.Com\ColorPrinter`. These printer names are often too long to fit in an application’s display field for the printer name. Using an Installed Printer Name Profile, you can replace the UNC server name (or `dns_name`) for all printers on an iPrint Manager with any name you want to be displayed. For example, if you want to display just the company name, the above example would display as `\\MyCompany\ColorPrinter`.

The Installed Printer Name Profile is available only on Windows NT, 2000, and XP workstations. When you implement an Installed Printer Name Profile, printers that are already installed are not affected. Only printers newly installed after the change will have the shortened name. For printers already installed, you have to delete and reinstall the printers to realize any changes to their names.

- 1 Open `/var/opt/novell/iprint/httpd/htdocs/ippdocs/iprint.ini` in a text editor.
- 2 Change the value of the `ShortInstallName` parameter to the value you want displayed.

```
ShortInstallName=your_name
```

where *your_name* is the value you want displayed. To reset the parameter to its default setting, use “default” as the value.

IMPORTANT: The `iprint.ini` file should be synchronized across all servers where iPrint and an iPrint Manager are running. The Installed Printer Name Profile affects all printers on an iPrint Manager except printers installed before the change.

Installing User Printers

To install an iPrint Printer and the associated printer driver, users must have Administrator or equivalent rights on Windows NT/2000/XP or Power User rights on Windows NT/2000. User Printers allows users to install a printer without having those rights, but the printer is available only to that individual user when he or she logs on to Windows. Changes to the printer settings affect the user’s printer only.

For example, three workers — Alberto, Juan, and Carla — share the same computer during the day. Alberto prints to an accounting printer, Juan prints to a plotter, and Carla prints to a printer in the CEO’s office. Using User Printers, each worker can install the printer he or she needs but cannot see printers installed by the other users.

To install User Printers, edit the `iprint.ini` file located in the `/var/opt/novell/iprint/httpd/htdocs/ippdocs` directory of the server where the iPrint HTML pages are installed by changing the value for `AllowUserPrinters = entry`. The `iprint.ini` file contains information about the different possible values for this entry.

Setting Printer Persistence

You might want printers to remove themselves automatically from a workstation. For example, if you have a printer in your lobby for customers to use, you would want the printer to be removed from the customer's laptop when the customer leaves. Setting the persistence of the printer lets you automatically remove the printer when the customer reboots the laptop.

To use Printer Persistence, you must use the iPrint Map Designer where you can specify a printer's default settings and set the persistence of a printer. The following table shows the different settings for persistence. For more information on the iPrint Map Designer, see [“Creating Location-Based Maps with iPrint Map Designer” on page 31](#).

Option	Description
persistent	The printer is not removed.
volatile-reboot	The printer is removed when the workstation reboots.
volatile-date-time	The printer is removed at the indicated time. Use the numerical format of year, month, day, hour, minute. For example, 8:16 pm on March 12, 2004, would be formatted as 2004,3,12,20,16

Uninstalling the Novell iPrint Client

To remove the iPrint Client, use the Add/Remove Programs option in the Windows Control Panel, or use client uninstall files, `nipp_u.exe` (with dialogs), `nipp_su.exe` (without dialogs), or `nipp.zip` with corresponding command line parameters in `var/opt/novell/iprint/httpd/htdocs/ippdocs/` to automate the uninstall. To see a list of the command line parameters, enter `nipp.zip /h` at an MS-DOS command prompt.

IMPORTANT: When you uninstall the iPrint Client, all iPrint printers are removed from the workstation.

What's Next

- ◆ [Chapter 4, “Customizing iPrint,” on page 31](#): With your print system set up and the client distributed to the workstation, you can focus on how your users can access and install iPrint Printers.
- ◆ [Chapter 5, “Managing Your Print System,” on page 37](#): Helps you monitor and maintain your print system.

4

Customizing iPrint

You can customize iPrint for your company by using the iPrint Map Designer to create a map of the printers in your office and by modifying the HTML pages and iPrint Client interface.

- ◆ [“Setting Up Location-Based Printing” on page 31](#)
- ◆ [“Customizing the iPrint HTML Interface” on page 34](#)
- ◆ [“Changing Printer Driver Default Install Options” on page 34](#)

Setting Up Location-Based Printing

When setting up location-based printing, you can use the iPrint Map designer to map the location of printers or create printer lists to help users find a printer closest to them.

- ◆ [“Creating Location-Based Maps with iPrint Map Designer” on page 31](#)
- ◆ [“Creating Printer Lists” on page 34](#)

Two examples of location-based printing are available by opening `/var/opt/novell/iprint/httpd/htdocs/ippdocs/examples/start.htm`. You can use the example files as templates to build similar pages by replacing the graphics and content with your own.

Creating Location-Based Maps with iPrint Map Designer

Using the iPrint Map Designer tool, you can quickly create a map showing printer locations. The tool lets you import floor plans, then you drag-and-drop printers onto the floor plans to show the actual locations of the printers. When you save the map, the tool generates an HTML page that contains the information required to install the printers. You then publish the HTML page with its supporting files in `/var/opt/novell/iprint/httpd/htdocs/ippdocs` to a Web server so users can install printers that are closest to their location.

After the map is created, you must use the iPrint Map Designer to modify or update it. Changes to a map file made outside of the iPrint Map Designer are not supported. If you need to add links to a map, you should create a frameset file and then display the map file in one frame and display your links in a different frame.

- ◆ [“Prerequisites” on page 32](#)
- ◆ [“Creating a Map for Printing” on page 32](#)
- ◆ [“Adding Printers from Different iPrint Managers” on page 33](#)
- ◆ [“Hosting Maps on a Web Server” on page 33](#)
- ◆ [“Modifying Printer Driver Defaults and Printer Persistence on a Map” on page 33](#)
- ◆ [“Using the Keyboard with iPrint Map Designer” on page 33](#)

Prerequisites

- Microsoft Internet Explorer 5.5 or later installed
- Novell® iPrint Client
- All of your background images (maps) are copied to `/var/opt/novell/iprint/httpd/htdocs/ippdocs/images/maps` on the server and any custom printer icon images are copied to `/var/opt/novell/iprint/httpd/htdocs/ippdocs/images/printers`

A default set of printer icons is included. These files are detected by iPrint Map Designer at startup. File types that can be used for background and printer icon images are JPEG, GIF, and BMP.

Creating a Map for Printing

- 1** To start iPrint Map Designer, open `http://server_address/ippdocs/maptool.htm` where *server_address* is the server's IP address or DNS name of the server where the iPrint Manager is running.
- 2** Select a map from the Background drop-down list.
- 3** Add a printer to the map.
 - 3a** In the Printer Icon field, select the type of printer and size.

Sizes range from 1 to 6, with 1 being the largest. Icons with a C indicate color printers.
 - 3b** Click the Printer icon and drag-and-drop it in the desired location on the map.
 - 3c** Next to the Printer List field, click the Browse icon and type the IP address or DNS name of the server where the iPrint Manager is running.
 - 3d** From the Printer list, select the Printer Agent you want associated with this Printer icon.

The Printer URL and Mouse Over Text is automatically filled in with the Printer Agent information.

Printer URL: The URL created for the printer when IPP is enabled for the printer. You should not need to change the URL.

Mouse Over Text: By default, displays the Printer Agent's name. You can override this information by typing the text you want displayed when a user moves the mouse over the Printer icon.
 - 3e** (Optional) In the Printer Caption field, type the information to display, using Enter to parse the information onto multiple lines.
 - 3f** (Optional) On the menu bar, click Driver Settings to set the installed driver settings for this printer.

These settings included paper size, orientation, copies, duplex, color, collate, and the option to remove the printer when the workstation is rebooted.

If you delete a Printer icon or change the Printer Agent assignment for a Printer icon, any driver settings are cleared for that icon.
 - 3g** (Optional) On the menu bar, click Font to change the base font, color, and size for text on the map.
- 4** (Optional) Edit a printer's information by clicking the desired printer's icon and then editing the printer information fields.

To deselect a Printer icon while in the map, click anywhere in the design area.

5 Click Save.

Unless you have set up a Samba share, you will have to save the map to a local drive. See [“Hosting Maps on a Web Server” on page 33](#) for information on making your new map available to your users.

WARNING: If you click Refresh or exit Internet Explorer without saving the map, all changes made since the last time the map was saved will be lost.

To retrieve and modify an existing map file, click Open on the menu bar and browse to the directory where the map is located.

Adding Printers from Different iPrint Managers

You can add printers from different iPrint Managers to the same map. First, add the printers from one iPrint Manager. Then click the Browse icon and select a different manager.

If you need to add or modify printers from a previously used iPrint Manager, click a Printer icon from that manager and the Printer List will be populated with printers from that manager.

Hosting Maps on a Web Server

After creating your maps, you need to post them on a Web server. Copy the contents of the `/var/opt/novell/iprint/httpd/htdocs/ippdocs` directory and its subdirectories to the Web server in order for your maps and iPrint to work properly. Copy your map to the `\ippdocs` directory on your Web server. You can link to your maps from your company’s internal Web page or send the URL out to your users.

You can use the NNLS server to host the map file by copying the map file to `/var/opt/novell/iprint/httpd/htdocs/ippdocs` and setting up a link to the map file.

Modifying Printer Driver Defaults and Printer Persistence on a Map

Using iPrint Map Designer, you can specify the printer driver defaults for a printer on the map. For example, if you use a specific printer for printing 8 1/2 x 14 documents in duplex mode, you can set the default paper size to Legal and turn on duplexing using the Printer Driver menu.

You can also set the persistence of a printer—in other words, set how long a printer should exist on a user’s workstation. This is useful if you have a printer in the lobby that is used primarily by mobile users that are visiting your company. When the user reboots his laptop, the printer is removed. To enable persistence, check the Remove Printer from Workstation on Reboot check box on the Driver Settings dialog box.

For more information on these settings, see [“Changing Printer Driver Default Install Options” on page 34](#) and [“Setting Printer Persistence” on page 30](#).

Using the Keyboard with iPrint Map Designer

You can use the keyboard to create maps using iPrint Map Designer. The following table lists the tasks to complete and the corresponding keystrokes required.

Task	Press
Move between fields	Tab

Task	Press
Insert Printer icon	Insert
NOTE: Before you can insert a printer, the design area must be selected.	
Move Printer icon within the design area	Arrow keys
Select a field	Enter

Creating Printer Lists

Printer lists allow users to select printers using categories that are meaningful to them. For example, you could create a list of printers by building location, department names, eDirectory™ context, etc. iPrint provides a default list of printers organized by iPrint Manager. To create a custom list, you must use an HTML editor and create links to the printer's IPP URL. This URL is displayed when you enable IPP for a printer.

To view a printer's URL:

- 1 In Novell iManager, click iPrint > Manage Printer.
- 2 Browse to and select the printer you want.
- 3 Click Client Support > IPP Support.

The printer's URL is displayed under Accepted IPP URL.

Customizing the iPrint HTML Interface

You can edit any of the HTML files provided or you can create your own files to customize iPrint for your environment. The HTML files are installed in the `/var/opt/novell/iprint/httpd/htdocs/ippdocs` directory. For information on the HTML interface, see [Appendix A, "Configuring the iPrint HTML Interface," on page 57.](#)

Changing Printer Driver Default Install Options

You can choose the default settings for a printer driver when it is installed on the workstation. For example, in a law office you might want the default paper size to be 8 1/2 x 14. This means every time the printer and corresponding driver are installed on a workstation, the paper size is set to 8 1/2 x 14.

To modify the printer's default settings, you must use the iPrint Map Designer where you can specify a variety of printer settings. The following table shows the different settings and corresponding values. For more information on the iPrint Map Designer, see ["Creating Location-Based Maps with iPrint Map Designer" on page 31.](#)

Printer Setting	Acceptable Parameter Values
collate	Yes or True = collate No = do not collate

Printer Setting	Acceptable Parameter Values
color	Yes = printer supports color No or False = printer is monochrome
copies	The number of copies you want printed.
duplex	simplex, horizontal, vertical
orientation	landscape, portrait
papersize	letter, lettersmall, tabloid, ledger, legal, statement, executive, A3, A4, A4small, A5, B4, B5, folio, quatro, 10x14, 11x17, note, env_9, env_10, env_11, env_12, env_14, csheet, dsheet, esheet, env_dl, env_c4, env_c5, env_c6, env_c3, env_c65, env_b4, env_b5, env_b6, env_italy, env_monarch, env_personal, fanfold_us, fanfold_std_german, fanfold_lgl_german, iso_b4, japanese_postcard, 9x11, 10x11, 15x11, env_invite, letter_extra, legal_extra, tabloid_extra, letter_transverse, A4_extra, letter_extra_transverse, a_plus, b_plus, letter_plus, A4_plus, A4_transverse, A5_transverse, B5_transverse, A3_extra, A5_extra, B5_extra, A2, A3_transverse, A3_extra_transverse

5

Managing Your Print System

The following sections will help you manage the different components of your iPrint system.

- ♦ “Managing the iPrint Manager” on page 37
- ♦ “Managing Printers” on page 45
- ♦ “Managing the iPrint Driver Store” on page 48

Managing the iPrint Manager

Although the default settings allow your users to print without further configuration being necessary, you will probably want to modify some of those settings so that you can manage your printing resources most effectively.

This section discusses the following:

- ♦ [Understanding the iPrint Manager Database \(page 37\)](#)
- ♦ [Understanding the Print Manager Configuration File \(page 37\)](#)
- ♦ [Changing the eDirectory Server Assignment \(page 38\)](#)
- ♦ [Using the iPrint Manager Health Monitor \(page 38\)](#)
- ♦ [Setting Up Printer Pooling \(page 40\)](#)
- ♦ [Using Print Auditing \(page 40\)](#)
- ♦ [Creating Additional iPrint Managers \(page 44\)](#)
- ♦ [Loading or Unloading the iPrint Manager \(page 45\)](#)

Understanding the iPrint Manager Database

The iPrint Manager uses a database to store information about the printers it controls. The database creates a backup when you create or delete a printer, and every night at midnight.

If the database fails to load through normal mechanisms, you can use the backup database by completing the following:

- 1** Rename `var/opt/novell/iprint/psmdb.*` to `psmdbold.*`.
- 2** Rename `var/opt/novell/iprint/psmdbsav.*` to `psmdb.*`.
- 3** Start the Print Manager.

Understanding the Print Manager Configuration File

When you create a Print Manager, a configuration file is created in `/etc/opt/novell/iprint`. The file name is `print_manager_name.ipsmdb.conf`. A separate file is created for each Print Manager that is

created and assigned to run on the same server. Only one Print Manager can run on the server at a time. For information about the entries in the configuration file, see `/etc/opt/novell/iprint/iprsm�-template.conf`.

The `iprsm�.conf` file links to the configuration file of the currently loaded Print Manager.

To load a different Print Manager on the server, use the Manage Print Manager > Manager Control page in iManager. If you attempt to load a Print Manager when one is already running, you will receive an error message instructing you to unload the current Print Manager before loading the new one.

Changing the eDirectory Server Assignment

If you need to change the eDirectory™ server assignment for the iPrint Manager or iPrint Driver Store, edit the `DSServer1=` entry in the corresponding configuration file located in `/etc/opt/novell/iprint/`.

NOTE: Up to two additional servers can be specified using `DSServer2` and `DSServer3`. `DSServer1` is considered the primary eDirectory server, whereas `DSServer2` and `DSServer3` are considered secondary servers.

Using the iPrint Manager Health Monitor

The iPrint Manager Health Monitor provides administrators with a global view of their print system. The Health Monitor shows you the current status of the iPrint Manager and the associated printers and lets you configure error threshold, customize some print system settings, and generate reports about your system. The following tasks are reviewed in this section:

- ◆ [Understanding the iPrint Manager Health Monitor \(page 38\)](#)
- ◆ [Accessing the iPrint Manager Health Monitor \(page 39\)](#)
- ◆ [Generating Reports \(page 39\)](#)
- ◆ [Configuring Health Monitor Settings \(page 39\)](#)
- ◆ [Posting Administrator Messages about a Printer \(page 39\)](#)

Understanding the iPrint Manager Health Monitor

The iPrint Manager Health Monitor is a powerful tool to manage and troubleshoot your print system. The following examples show some of the features and information available in the Health Monitor. The opening page of the Health Monitor shows all of your printers, their current state, and general statistics including the number of print jobs printed in the last hour, in the last day, and since the iPrint Manager was last started.

A quick look at these statistics will help you identify which printers are not printing due to errors or are not being used. By clicking a printer name, you can see additional details about the printer that can help you troubleshoot a reported printer error and why users are not using a printer.

For example, if the printer status shows `Error printing`, then click the printer for a list of known problems. If one of the known problems is `Printer not connected`, then use the IP address listed in the Load String field to ping the printer to determine if the IP address is valid.

By looking at the statistical information, you can correct printer problems or make decisions about redeploying underused printers to departments that print a lot.

Accessing the iPrint Manager Health Monitor

The Health Monitor can be accessed by entering the following URL: `https://server_address/psmstatus`, where `server_address` is the IP address or DNS name of the server where the iPrint Manager is running.

You can view current Printer Agent states, start up and shut down Printer Agents, and view other information about your print system.

Generating Reports

The report feature of the Health Monitor allows you to generate a report that can be displayed on the page or saved as a comma-separated-value (CSV) file that can be used in a spreadsheet program.

- 1** On the iPrint Manager Health Monitor main page, click Advanced iPrint Manager Information > Generate Report.
- 2** (Optional) To save the report as a file, click Write Results to File under the File Options heading.
The heading will specify the location and file name of the report.
- 3** Select the information you want included in the report by checking the corresponding check boxes.
- 4** Click Generate report.

The report is displayed on the screen, even if you selected to save the report to a file.

Configuring Health Monitor Settings

You can configure settings in the Health Monitor to control how the Health Monitor presents information when certain thresholds are met.

- 1** On the iPrint Manager Health Monitor main page, click Advanced iPrint Manager Information > Configure Settings and Error Thresholds.
- 2** Adjust the settings you want to change.

See the online help for more information about the available settings. For most print systems, the default settings are sufficient.

Posting Administrator Messages about a Printer

Suppose a printer has been taken offline and sent to the manufacture for repairs, but you keep getting phone calls from other administrators that the printer has an error in the Health Monitor. This can be resolved by leaving a message about the printer in Health Monitor. Users can see the message, but only administrators can edit it.

- 1** On the iPrint Manager Health Monitor main page, click the printer you want and then click Message from Admin.
- 2** Type the text you want displayed for this printer.
- 3** Click Apply.

To remove a message, follow the steps above but delete the text in **Step 2**.

Setting Up Printer Pooling

You can create a pool of printers to share the load of printing. Users install one of the printers in the pool. When a printer in the pool has a print job waiting, the iPrint Manager can redirect that print job to an idle printer in the pool. The iPrint Manager attempts to evenly distribute print jobs among all printers in a pool. For example, if four printers are in the pool and the first printer is printing a 100-page job, then the next print job will be sent to the second printer. If the second printer completes the print job and the first printer is still busy, the next print job will be sent to the third printer to distribute print jobs throughout the pool. Printer pools are specific to the iPrint Manager, and a printer pool cannot span multiple iPrint Managers.

Printers that are included in a pool should be the same model and use the same printer drivers. You can include only printers from the same iPrint Manager in a pool.

When you create a printer pool, the pool information resides in the iPrint Manager and can be viewed only using Novell iManager. Unlike the printers and the iPrint Manager, a separate eDirectory object for a printer pool is not created.

After you set up a printer pool, users install only one of the printers in the pool on their workstation. When a user submits a print job to the installed printer, the iPrint Manager uses the method above to send the print job to the next available printer in the pool. Users should be reminded that their print jobs might be printed by any printer in the pool. For this reason, the physical printers that are members of a printer pool should be located close to one another. You might also want to enable banner pages, depending on the type of documents being printed.

To set up printer pooling:

- 1** In Novell iManager, click iPrint > Printer Pool Configuration.
- 2** Select the Print Manager for this pool.
- 3** Select Create Pool from the Select an Operation list, then click OK.
- 4** Specify the name of the printer pool.
This name is used to identify the pool only within Novell iManager.
- 5** Select the printers you want included in the pool.
- 6** Click Next.

To modify or delete a pool, follow the above steps and select the desired action from the Select an Operation list in [Step 3](#).

Using Print Auditing

First you need to enable auditing for *each* printer you want to audit using Novell iManager or the iPrint Manager Health Monitor.

Using Novell iManager to Enable Auditing

- 1** In Novell iManager, click iPrint > Manage Printer.
- 2** Browse to and select the printer you want to enable auditing for.
- 3** Click Configuration > Auditing.
- 4** Check the Enable Auditing check box.

Using the Health Monitor to Enable Auditing

- 1 From a Web browser, load and log in to the iPrint Manager Health Monitor by entering **`https://server_address/psmstatus`**.
- 2 Click Configuration Options.
- 3 Check the Enable Auditing check box.

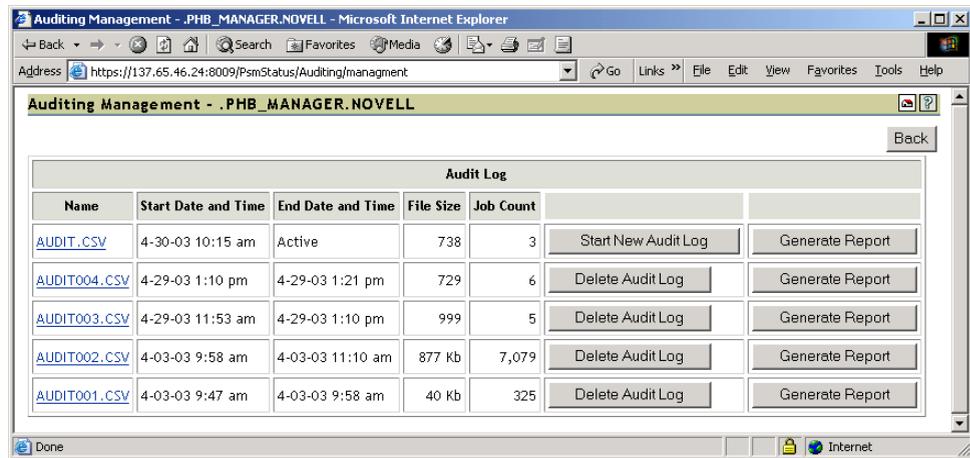
When auditing is enabled for a Printer Agent, a log file is created indicating who printed how many pages to which printer on a given date. The log file is in a comma-separated format (CSV). The data from this log file can be viewed from the Health Monitor, or downloaded into a spreadsheet. To access the Health Monitor, enter the following in a Web browser:

`http://iPrint_Manager_URL/psmstatus`

For example:

`http://printing.mycompany.com/psmstatus`

Figure 5 Auditing Management Page



From the Auditing Management page, you can complete the following tasks:

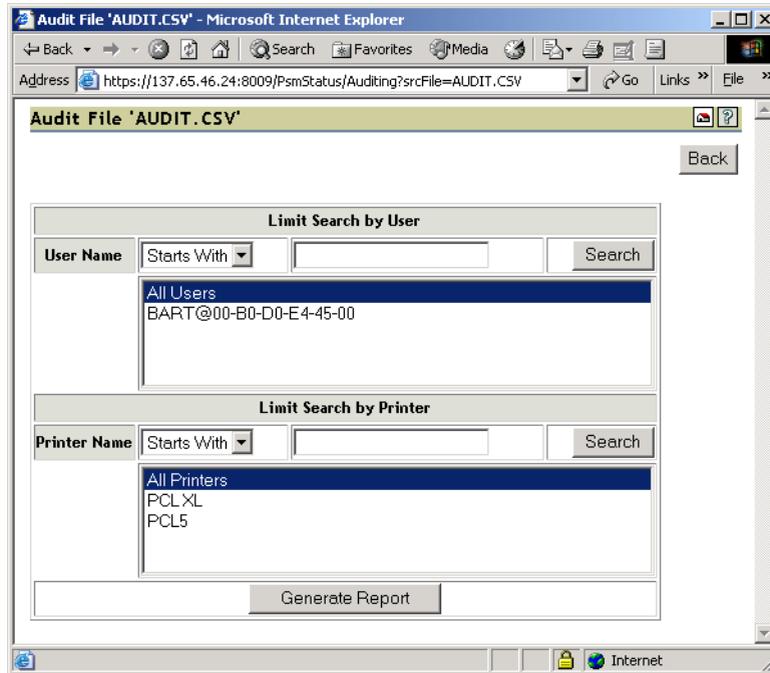
- ♦ [Viewing Auditing Information \(page 41\)](#)
- ♦ [Managing Audit Logs \(page 43\)](#)
- ♦ [Downloading an Audit Report \(page 44\)](#)

Viewing Auditing Information

You can generate an audit report that shows all print jobs, or you can filter the report based on a user or a printer or both.

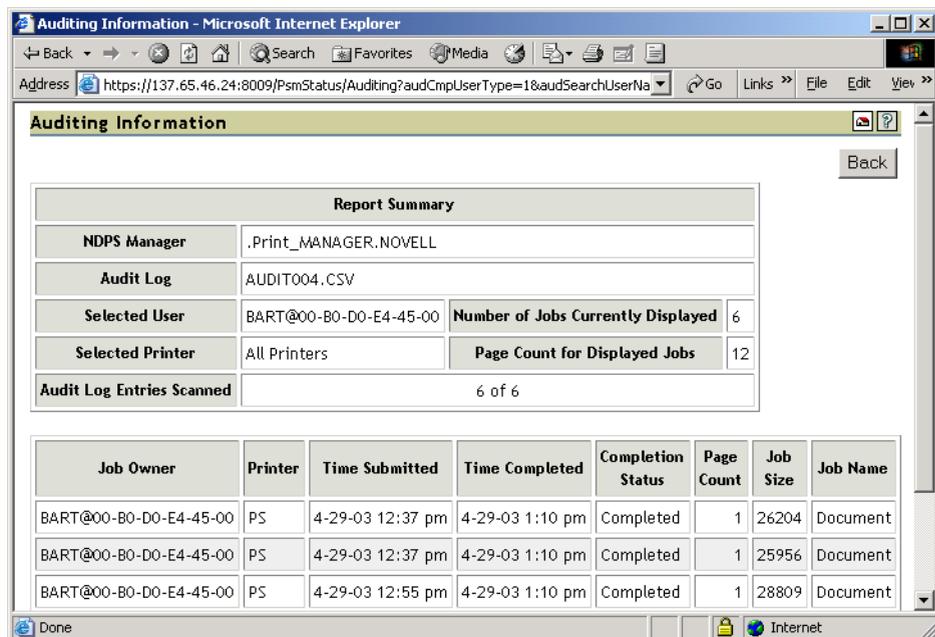
- 1 In the iPrint Manager Health Monitor, click Advanced iPrint Manager Information > Auditing > Generate Report.
If there is more than one audit log, click Generate Report for the audit log you want to view.
- 2 (Optional) Filter the search by using the Limit Search by User or Limit Search by Printer filters.

Figure 6 Auditing Generate Report Page



- 3 Click Generate Report to view the report with the specified filters.
Only 250 print jobs are listed at a time. To view more print jobs in the report, click Next.

Figure 7 Auditing Report



The following table explains the fields that are displayed under the Report Summary.

Field	Description
iPrint Manger	The iPrint Manager that the information is from.
Audit Log	The audit log filename that was used to create the report.
Selected User	Any user filter criteria that were used to create the report.
Selected Printer	Any printer filter criteria that were used to create the report.
Number of Jobs Currently Displayed	The number of jobs submitted by the indicated users and printers.

The following table discusses what is displayed in the body of the report.

Field	Description
Job Owner	The owner of the print job.
Printer	The printer the print job was sent to.
Time Submitted	The time the print job was submitted to the printer.
Time Completed	The time the print job was printed on the printer.
Completion Status	The completion status of the submitted print job. Completed, Cancelled by User, Cancelled by Operator, or Other (typically Other indicates the job was aborted by the system).
Page Count	Number of pages printed.
Job Size	The size of the print job (in bytes).
Job Name	The print job filename that was submitted and the type of print client that submitted the print job.

Managing Audit Logs

You can manage your audit logs by using the displayed buttons on the Audit page. When audit logs are no longer needed, you can delete them. On a daily, weekly, or monthly basis, you might want to save the current data in the audit.csv file into a separate audit log to keep the log file more manageable.

The active audit log file (audit.csv) logs data for all printers that have been enabled for auditing. You can generate a report from this file or you can move the data to a saved file using Start New Audit Log. You cannot download the audit.csv file. To download a file, it must be saved as a separate audit log. When you move the data to a saved audit log using the Start New Audit Log button, the log file is named auditxxx.csv, where xxx is the next sequential number of the log. After a log file is saved, you can download the file to your workstation and import it into a spreadsheet program.

Downloading an Audit Report

When the file is downloaded, you can open the report in a spreadsheet application to sort, view, and format the data to meet your needs. The active audit log, `audit.csv`, cannot be downloaded. You must first start a new audit log by clicking Start New Audit Log, then download the newly created audit log.

- 1** On the iPrint Manager Health Monitor main page, click Advanced iPrint Manager Information > Auditing.
- 2** Right-click the name of the audit log you want to download, then click Save Target As.
- 3** Follow the prompts and save the file to the desired location.

Creating Additional iPrint Managers

An iPrint Manager must be created as an object in the eDirectory tree before you can create and associate Printers. An iPrint Manager provides a platform for Printer Agents, a logical representation of printers that reside on the server. You can manually load iPrint Manager on a server.

Use the following guidelines to determine where and when to place an iPrint Manager:

- ◆ Only one Print Manager can be running on a server.
- ◆ Whenever possible, place the iPrint Manager and the printers it controls on the same LAN segment for optimal performance.
- ◆ Consider distributing your printers across multiple iPrint Managers so that if one manager goes down, not all of the Printer Agents are affected.

Ensure that you have the Supervisor right for the container where the iPrint Manager object will reside.

1 In iManager click iPrint > Create Print Manager.

2 Fill in the fields.

Click Help for explanations about the fields.

3 (Optional) Leave the Start Print Manager after Creation check box checked.

If another Print Manager is already loaded and you check this checkbox, you will receive an error message that the Print Manager was created but not loaded. To load the new Print Manager, you must first unload the currently running Print Manager.

4 Click OK.

After the Print Manager is created, the daemon is loaded on the server.

To modify the iPrint Manager properties, click Manage iPrint Manager and then select the Manager you want to modify.

For a discussion of Access Control roles, see [“Setting Access Control for Your Print System” on page 51](#).

Loading or Unloading the iPrint Manager

Using the Command Line

The iPrint Manager uses a Linux Standards Base (LSB) init script for starting and stopping the daemon. To load the iPrint Manager from the command line, enter `/etc/init.d/novell-ipsmd start`. The following init script actions are also valid:

Action	Description
start	Starts the daemon
stop	Stops the daemon
reload or force-reload	Stops and then starts the daemon
status	Displays the status of the daemon and the name of the iPrint Manager.

Using iManager

On the Manager Control Property page, you can view the Print Manager's status and unload or load the manager daemon.

- 1 In Novell iManager, click **iPrint > Manage Print Manager**.
- 2 Browse to and select the Print Manager you want to control.
- 3 Click **Manager Control > Shutdown** to stop iPrint Manager.
- 4 Click **OK**.

Managing Printers

Although the default settings allow your users to print without further configuration being necessary, you will probably want to modify some of those settings so that you can manage your printing resources most effectively. Although most tasks can be done in Novell iManager, some tasks will require you to use NetWare® Administrator.

This section discusses the following:

- ♦ [Creating Additional Printers \(page 45\)](#)
- ♦ [Managing Printers \(page 46\)](#)
- ♦ [Managing Print Jobs \(page 46\)](#)
- ♦ [Modifying the Printer's Gateway Load Commands \(page 47\)](#)

Creating Additional Printers

Prerequisites

- Have the Supervisor right for the destination container where its associated Printer object will reside
- Be designated as a manager of the iPrint Manager that will control this printer
- Have an iPrint Driver Store running

- ❑ Have an iPrint Manager running

Procedure

- 1** In Novell iManager, click iPrint > Create Printer.
- 2** Fill in the fields.
Click Help for explanations about the fields.
- 3** Click OK.
- 4** Click Next, then select the Drivers for this printer.

If the printer drivers for this printer are not listed, you can still create the printer. After the printer is created, you can add the printer drivers to the iPrint Driver Store and then associate the drivers to the printer by clicking Manage Printer > Drivers.

These drivers will be automatically downloaded to users' workstations when they install the printer in the future.

If you choose a Windows 3.x driver but not a Windows 95/98/ME or Windows NT/2000 driver, a 16-bit driver will be selected.

Because the list of printer drivers shipped with this product is limited, you can add drivers to the iPrint Driver Store. See [“Updating Printer Drivers” on page 50](#) for more information.

If you do not select a driver, users are prompted to provide a disk with the appropriate driver the first time they install this printer on their workstations.

- 5** Click Next to create the printer.

Managing Printers

Using iManager, you can manage Printer Agents. You can start up and shut down a Printer Agent, pause and resume input and output, view printer information, set configuration settings, and change the printer drivers.

- 1** In Novell iManager click iPrint > Manage Printer.
- 2** Browse to and select the printer you want to manage.
- 3** Use the tabbed property pages to complete the task you want.

Managing Print Jobs

The following sections provide specific information about the print job management features. Users designated as managers or operators for a printer can perform these tasks for all jobs routed to that printer; individual job owners can perform these tasks only for their own print jobs.

Viewing Print Job Information

You can view information about individual print jobs waiting to be processed by a specific printer.

- 1** In Novell iManager, click iPrint > Manage Printer.
- 2** Browse to and select the printer the job was sent to.
- 3** Click Printer Control > Jobs.

Information about print jobs for this printer are displayed.

Deleting Print Jobs

Administrators can delete any print job after it has been submitted if the job has not yet started printing. Users can delete only their own print jobs.

- 1 In Novell iManager, click iPrint > Manage Printer.
- 2 Browse to and select the printer the job was sent to.
- 3 Click Printer Control > Jobs.
- 4 Check the check box next to the job you want to delete.
- 5 Click Delete.

Changing the Order of Print Jobs

Occasionally, you might need to print a job sooner than other jobs that have already been submitted to a printer but have not yet started printing. Administrators, managers, and operators can move any job up or down the list. Users can move only their own jobs, and can move them only down the list.

- 1 In Novell iManager, click iPrint > Manage Printer.
- 2 Browse to and select the printer the job was sent to.
- 3 Click Printer Control > Jobs.
- 4 Check the check box next to the job you want to modify.
- 5 Click Promote to move a print job up the list.

Modifying the Printer's Gateway Load Commands

You can modify the Printer's gateway load commands by using iManager.

- 1 In Novell iManager, click iPrint > Manage Printer.
- 2 Browse to and select the printer you want to modify.
- 3 Click Configuration > Gateway.
- 4 Edit the gateway autoloading command.

Table 1 Gateway Load Parameters in Order

Parameter	Description
iprintgw	The gateway executable that is loaded for this Printer Agent.
PA=	The name of the printer that is to be loaded.
PORT=LPR <i>port_specific_parameters</i>	The type of port to be used. Supported values are LPR and NULL. The port value is followed by port-specific parameters. See Table 2 on page 48 .
HOSTNAME or HOSTADDRESS=	The hostname (DNS Name) or IP address of the printer.

Parameter	Description
PRINTERNAME=	Passthrough is used for most printers. If you are printing to a UNIX printer, use a UNIX-type printer or queue name.
GETCOMMUNITYSTRING=	Specifies the community string to be used for SNMP Get and GetNext requests.
NOQUERY	Prevents initialization queries on the server. This parameter is optional.
SETCOMMUNITYSTRING=	Sets the community string to be used for SNMP Get and GetNext requests.

Table 2 Port-Specific Parameters

Parameter	Description
JPOLL=	Sets the job polling interval (in seconds).
SPOLL=	The base SNMP polling interval (in seconds). Only select SMNP information, like the printer's alert table and display console, is gathered at this polling interval. Other information that changes less frequently, like the level of paper in a paper tray or the amount of toner, is gathered about every four polling intervals. Additional printer information, like printer memory, is gathered every 10 polling intervals.
VENDOR=	Indicates the printer vendor and is reserved for the vendor's use only.

5 Click OK to save the changes.

Managing the iPrint Driver Store

Although the default settings allow your users to print without further configuration being necessary, you will probably want to modify some settings so that you can manage your printing resources most effectively. This section discusses the following:

- ◆ [Creating Additional iPrint Driver Stores \(page 48\)](#)
- ◆ [Understanding the iPrint Driver Store Configuration File \(page 49\)](#)
- ◆ [Changing the eDirectory Server Assignment \(page 49\)](#)
- ◆ [Loading or Unloading the iPrint Driver Store \(page 49\)](#)
- ◆ [Updating Printer Drivers \(page 50\)](#)

Creating Additional iPrint Driver Stores

Although you can create additional iPrint Driver Stores, you only need one. The iPrint Manager will cache drivers that have been downloaded to a workstation. If the Print Manager does not have

a requested driver, it requests the driver from the iPrint Driver Store, and then caches the driver. This process is relatively quick for the first user to request a printer driver. We recommend that you have only one iPrint Driver Store to avoid synchronizing different printer drivers across multiple driver stores.

1 In Novell iManager, click iPrint > Create Driver Store.

2 Fill in the fields.

Click Help for explanations about the fields.

3 Click OK.

To modify the Driver Store properties or to add printer drivers, click Manage Driver Store and then select the Driver Store you want to modify.

Understanding the iPrint Driver Store Configuration File

When you create an iPrint Driver Store, a configuration file is created in `/etc/opt/novell/iprint`. The file name is `idsd.conf`. Each time you create an iPrint Driver Store object using iManager and assign it to the same server, a separate entry is added to `idsd.conf`. While you can have several iPrint Driver Stores assigned to a server, all printer driver files are stored in one file structure on the server. For information about the entries in the configuration file, see `/etc/opt/novell/iprint/idsd-template.conf`.

Changing the eDirectory Server Assignment

If you need to change the eDirectory server assignment for the iPrint Manager or iPrint Driver Store, edit the `DSServer1=` entry in the corresponding configuration file located in `/etc/opt/novell/iprint/`.

NOTE: Up to two additional servers can be specified using `DSServer2` and `DSServer3`. `DSServer1` is considered the primary eDirectory server, whereas `DSServer2` and `DSServer3` are considered secondary servers.

Loading or Unloading the iPrint Driver Store

Using the Command Line

The iPrint Manager uses a Linux Standards Base (LSB) init script for starting and stopping the daemon. To load the iPrint Manager from the command line, enter `/etc/init.d/novell-ipsmd start`. The following init script actions are also valid:

Action	Description
reload or force-reload	Stops and then starts the daemon.
start	Starts the daemon.
status	Displays the status of the daemon and the name of the iPrint Driver Store.
stop	Stops the daemon.

Using iManager

On the Driver Store Control property page, you can view the Driver Store's status and unload or load the Driver Store daemon.

- 1** In Novell iManager, click iPrint > Manage Driver Store.
- 2** Click Driver Store Control > Shutdown to stop the Driver Store process.
- 3** Click OK.

Updating Printer Drivers

To update printer drivers, follow the steps listed in [“Add Printer Drivers” on page 18](#).

6

Setting Up a Secure Printing Environment

This sections discusses setting up a secure printing environment using the following methods:

- ◆ [Setting Access Control for Your Print System \(page 51\)](#) lets you assign users to a User, Operator, or Manager role to control printers, iPrint Managers, and iPrint Driver Stores.
- ◆ [Using SSL for Secure Printing \(page 54\)](#) requires users to authenticate before installing and printing to a printer.

Setting Access Control for Your Print System

Your print system is designed to take full advantage of eDirectory™. You receive all the benefits of eDirectory security and ease of management provided by the industry's most advanced and robust directory service. The Access Control feature lets you specify the access that each User, Group, or Container object will have to your printing resources.

Access control roles are mutually exclusive, even though the same individual might need to perform tasks reserved for different roles. For example, only printer managers can add or delete printer operators or printer Users. In a similar way, managers and operators must also be designated as users for a printer before they can submit print jobs to it.

In actual implementation, the defaults prevent most problems that might occur from these distinctions. For example, a manager is automatically designated an operator and user as well, while an operator of a printer is automatically designated a user of that printer also. You cannot remove the user role from an operator, and you cannot remove the operator and user roles from a manager.

The creator of an object is automatically granted privileges for all available roles for the type of object being created.

The following sections illustrate some of the security issues and features you might find useful as you plan your print system setup:

- ◆ [“Setting Access Control for Printers” on page 51](#)
- ◆ [“Setting Access Control for the iPrint Manager” on page 53](#)
- ◆ [“Setting Access Control for the iPrint Driver Store” on page 54](#)

Setting Access Control for Printers

Printer security is ensured through the assignment of the manager, operator, and user access control roles and by the strategic placement of your printers and printer configurations.

You can assign multiple Printer objects to represent a single Printer Agent. You can then make different access control assignments to each Printer object. This can be an especially useful option

if you want to allow users in different containers to use the same printer, because each group of users can be given different rights to the printer.

The following sections discuss security options for printers in more detail:

- ◆ [“Printer Access Control Roles” on page 52](#)
- ◆ [“Assigning Printer Access Control Roles through Printer Objects” on page 53](#)
- ◆ [“Planning Your Printer Connections and Locations for Better Security” on page 53](#)

Printer Access Control Roles

Different User, Group, or container objects can have different access rights to the same printer. For example, if you want only certain users to be able to send jobs to a particular printer, you can specify which users should have access and what access roles each will have.

The following table describes the rights and privileges associated with each of the printer access control roles.

Role	Description
Manager	<p>Tasks performed exclusively by the Manager are those that require the creation, modification, or deletion of objects, as well as other eDirectory administrative functions. Managers are automatically designated as Operators and Users as well, so they can perform all tasks assigned to those operator roles. Typical manager functions include the following:</p> <ul style="list-style-type: none">◆ Modifying and deleting Printer objects◆ Adding or deleting operators and users for a printer◆ Adding other managers◆ Configuring interested-party notification◆ Creating, modifying, or deleting printer configurations
Operator	<p>Printer management tasks performed by the operator include the following:</p> <ul style="list-style-type: none">◆ Performing all of the functions available through the Printer Control page◆ Pausing, restarting, or reinitializing printers◆ Reordering, moving, copying, and deleting jobs◆ Setting printer defaults, including locked properties <p>Operators cannot create, modify, or delete eDirectory objects or perform other eDirectory administrative functions.</p>
User	<p>Tasks performed by users include the following:</p> <ul style="list-style-type: none">◆ Submitting print jobs◆ Managing print jobs they own (users cannot copy, move, reorder, or remove jobs they do not own) <p>To simplify administration, the container a printer resides in is automatically assigned as a user for that printer, so all users in that container and its subcontainers can use that printer without being added to the list. You can delete the container from the list if you want to limit access to certain users, groups, or roles.</p>

Assigning Printer Access Control Roles through Printer Objects

Different User, Group, or Container objects can have different access rights to the same printer. For example, if you want only certain users to be able to send jobs to a particular printer, you can specify which users should have access and what access roles each will be given.

- 1 In Novell iManager, click iPrint > Manage Printer.
- 2 Browse to and select the printer you want to enable Access Control for.
- 3 Click the Access Control tab.
- 4 Add or delete Users, Groups, or Container objects to the different access control roles.
- 5 Click OK.

Planning Your Printer Connections and Locations for Better Security

Depending on your organization's needs, the network administrator can attach printers directly to NetWare[®] servers or to the network. Both types of setup can provide security and administrative advantages. The ideal combination for each installation is different and will change as needs change. Be sure to consider the advantages of each approach when you set up your network.

Connecting the printer to the server places the two resources in close proximity to each other. If the server is in a secure location, this means that the printer is locked up with the server. This might be an advantage. For example, your company might use that printer to print confidential documents. Having the printer in a secure location protects these documents.

Because most printers are already networkenabled, the most common type of network setup includes printers attached directly to the network. This allows the printer to be placed in a convenient location for all users and places it away from the server for security reasons; users who use the printer normally will not have access to the server console. Security is still maintained by requiring users to use a password to log in to the network before they can use the printer.

Setting Access Control for the iPrint Manager

iPrint Manager security is ensured through the assignment of the manager access control role.

iPrint Manager Access Control Role

The only access control role available for the iPrint Manager is that of manager. The following table explains the tasks performed by the manager role.

Role	Description
Manager	<p>Tasks performed exclusively by the manager are those that require the creation, modification, or deletion of print system objects, as well as other eDirectory administrative functions. Typical manager functions include the following:</p> <ul style="list-style-type: none">♦ Creating Printer Agents and iPrint Manager objects♦ Adding or deleting operators and users for a printer♦ Adding other managers♦ Configuring interested-party notification♦ Creating, modifying, or deleting printer configurations

Assigning the Manager Role for iPrint Managers

- 1 In Novell iManager, click iPrint > Manage Print Manager.
- 2 Browse to and select the iPrint Manager you want to enable access control for.
- 3 Click the Access Control tab.
- 4 Add or delete Users, Groups, or containers to the manager role.
- 5 Click OK.

Setting Access Control for the iPrint Driver Store

The iPrint Driver Store security is ensured through the assignment of the manager access control role.

Print Driver Store Access Control Roles

The access control roles available to the iPrint Driver Store are manager and public access user. The following table explains these roles.

Role	Description
Manager	Tasks performed exclusively by the iPrint Driver Store manager are those that require the creation, modification, or deletion of Driver Store objects, as well as those that involve other eDirectory administrative functions. Typical manager functions include the following: <ul style="list-style-type: none">♦ Creating, modifying, and deleting Driver Store objects♦ Adding other managers♦ Adding resources to the Driver Store
Public Access User	A public access user is a role assigned to all entities on the network which are users of resources provided by the Driver Store. This role is assigned by default and does not require specific administrative action by the Driver Store manager. Typically, iPrint Managers refresh their cached copies of printer drivers for the printers they are hosting with updated printer drivers from the Driver Store.

Assigning Managers for the iPrint Driver Store

- 1 In Novell iManager, click iPrint > Manage Driver Store.
- 2 Browse to and select the Driver Store you want to enable access control for.
- 3 Click the Access Control tab.
- 4 Add or delete Users, Groups, or Containers to the manager role.
- 5 Click OK.

Using SSL for Secure Printing

Secure printing takes advantage of SSL, which requires users to authenticate using their eDirectory usernames and passwords. Users authenticate once per eDirectory tree per session. The print data is encrypted from the client to the server, and all print communication uses port 443. The print data

is not encrypted between the server and the printer. Without secure printing, the printer is available to anyone inside the firewall on the network and the print data is not encrypted.

Considerations When Changing Printer Security

Consider the following when making changes to SSL:

- ♦ **Enabling SSL Changes the Printer URL:** When you check the Requires Security check box, the URL for the associated printer will change. Users who have already installed this printer must delete and reinstall the printer in order to use the updated URL.
- ♦ **Enabling SSL Uses LDAP for Authentication:** When you enable SSL, iPrint uses LDAP to authenticate users. When a user authenticates, LDAP begins searching for the user beginning at the root of the eDirectory tree by default. If this search method becomes an issue, you might want to change the starting point for the search to a container closer to the users. The starting point for the search can be changed by editing `/etc/opt/novell/iprint/httpd/conf/ipp.conf` and changing the value for the `AuthLDAPURL` parameter. See Apache's [AuthLDAPURL Directive \(http://httpd.apache.org/docs-2.1/en/mod/mod_auth_ldap.html\)](http://httpd.apache.org/docs-2.1/en/mod/mod_auth_ldap.html) for more information.

Enabling SSL

- 1** In Novell iManager, click `iPrint > Manage Printer`.
- 2** Browse to and select the Printer object you want to modify.
- 3** Click `Client Support > IPP Support`.
- 4** Check the Requires Security check box.
- 5** Click `Apply` or `OK` to update the printer settings.

Saving Passwords for Secure Printers

When users print to a secure printer, they are prompted for the eDirectory username and password. Users can select to have their workstations remember their password for printing. For Windows NT/2000/XP users, passwords are saved on a per-user basis. See [“Managing Passwords” on page 26](#) for more information.

A

Configuring the iPrint HTML Interface

This appendix discusses the HTML parameters and operations used in the iPrint interface. This information is provided to give administrators insight into how to customize their HTML files.

Using this information, HTML developers can create and edit iPrint Web pages to customize them for their companies.

The iPrint HTML files are located in the `/var/opt/novell/iprint/httpd/htdocs/ippdocs` directory.

The following sections will help you customize the HTML interface:

- ◆ “iPrint Client HTML Interface Description” on page 57
- ◆ “HTML Parameters” on page 58
- ◆ “Supported Operation Strings” on page 61

iPrint Client HTML Interface Description

The list of operations and identifiers is the same for each browser. The printer name and the operation to be performed are required parameters for all operations except `op-client-interface version` (page 62) and `op-client-version-info` (page 62). All other parameters are operation-specific or optional. Operation-specific parameters that are used out of context are ignored.

If the desired output from the plug-in is HTML, a frameset needs to be used. This is to prevent some browsers from failing when they try to write to the document that invoked the plug-in. The name of the frame to receive the HTML page generated by the plug-in can be passed in using the target frame option. This target frame needs to be a named frame in the same frameset as the frame invoking the plug-in.

Internet Explorer Browser Customization

- ◆ “HTML Script Example” on page 57
- ◆ “HTML Code Example” on page 58

HTML Script Example

The `ExecuteRequest()` entry point simplifies HTML coding when working with Internet Explorer. It lets you pass/get information from the iPrint without having to reload a Web page.

A result type called *object* is implemented and should be used only in conjunction with `ExecuteRequest()`. You can use `ExecuteRequest()` and have it return results via HTML, URL, message box, or cookie. All data can be passed via the `ExecuteRequest()` second parameter. The first parameter is the operation. Both of the parameters are strings.

Syntax: `variable=variable.ExecuteRequest("operation_string",additional_operation_strings);`

```

<object ID=iPrintAccess classid=clsid:36723f97-7aa0-11d4-8919-ff2d71d0d32c>
</object>
<script Language="javascript1.1">
var pStatus;
var params;
params = "printer-url=" + printerNameHere + "&result-type=object"
pStatus=iPrintAccess.ExecuteRequest("op-printer-get-status", params);
alert(pStatus);
</script>

```

HTML Code Example

The following example defines the interface between HTML pages and the browser plug-in. The HTML element <OBJECT> is used to invoke the Internet Explorer plug-in (ienipp.ocx).

```

<OBJECT ID=TESTID
    CLASSID="clsid:36723f97-7aa0-11d4-8919-FF2D71D0D32C"
    CODEBASE=v:\ipp\ieNIpp\final\novipp.ocx>
    <PARAM NAME=operation VALUE=op-printer-get-status>
    <PARAM NAME=printer-url VALUE=http://172.16.123.25/ipp/lpr>
    <PARAM NAME=result-type VALUE=html>
    <PARAM NAME=target-frame VALUE=displayFrameName>
</OBJECT>

```

HTML Parameters

The following parameters can be used to enhance the iPrint HTML pages. They are used in the HTML files as PARAM NAME=*parameter* VALUE=*identifier* statements.

- ◆ [call-back-url \(page 59\)](#)
- ◆ [debug \(page 59\)](#)
- ◆ [driver-options \(page 59\)](#)
- ◆ [error-type \(page 59\)](#)
- ◆ [file-path-name \(page 59\)](#)
- ◆ [job-list \(page 60\)](#)
- ◆ [job-list-options \(page 60\)](#)
- ◆ [persistence \(page 60\)](#)
- ◆ [printer-url \(page 61\)](#)
- ◆ [result-type \(page 61\)](#)
- ◆ [target-frame \(page 61\)](#)

call-back-url

Targets the results from the onchange JavaScript function associated with selecting jobs from the job list. The JavaScript function causes the browser to reload the indicated control frame passing the list of selected jobs as a parameter.

Example:

```
PARAM NAME=call-back-url VALUE=CONTROL.HTM
```

debug

If set to True, displays message boxes with debug and profiling information.

Example:

```
PARAM NAME=debug VALUE=true
```

driver-options

As a printer is being installed, the plug-in can optionally set some default driver options. For a list of driver options, see [“Changing Printer Driver Default Install Options” on page 34](#).

Example:

```
PARAM NAME=driver-options VALUE=papersize:A4;duplex:vertical;color:false
```

error-type

Determines how the plug-in reports errors associated with the requested operation. The plug-in has the ability to return the errors.

Option	Description
cookie	Puts the error information in a cookie.
html	Displays results as an HTML page generated by the plug-in.
msgBox	Displays results in a message box.
none	No response.
url	Passes the results as a URL parameter.

The plug-in defaults to the same reply mechanism that is specified in [results-type](#) if [error-type](#) is not specified.

Example:

```
PARAM NAME=error-type VALUE=html
```

file-path-name

Specifies a printer-ready file that can be passed to the plug-in for printing. This mechanism bypasses the print provider and the printer driver. The printer does not need to be installed on the workstation to use this operation.

Example:

PARAM NAME=file-path-name VALUE=*directory path\filename*

job-list

The plug-in can perform several operations on jobs. The job-list parameter is a comma-delimited string of job IDs that indicates which jobs to operate on. A job list with the job ID of -1 is equivalent to selecting all jobs

Example:

PARAM NAME=job-list VALUE=3,5,7

job-list-options

When the plug-in creates the HTML for job-list, it can add buttons to allow the user to hold, resume, delete, or display information for selected jobs. The *job-list-options* parameter specifies which of the following possible buttons to display and support:

- ◆ [op-job-cancel \(page 63\)](#)
- ◆ [op-job-get-info \(page 63\)](#)
- ◆ [op-job-hold \(page 63\)](#)
- ◆ [op-job-release-hold \(page 63\)](#)

Example:

PARAM NAME=job-list-options VALUE=op-job-hold,op-job-release-hold, op-job-cancel, op-job-get-info

persistence

Printer installation can be temporary or permanent. If not specified, persistence defaults to persistent. The persistence parameter specifies how long the printer is to be installed for. The choices include the following:

Option	Description
persistent	Printer is not removed.
volatile-date-time	Printer is removed at the indicated time (year, month, day, hour, minute).
volatile-reboot	Printer is removed when the workstation reboots.

Examples:

PARAM NAME=persistence VALUE=volatile-reboot

PARAM NAME=persistence VALUE=volatile-date-time:2004,3,22,8,30

printer-url

Indicates which printer the operation should be directed to.

Example:

```
PARAM NAME=printer-url VALUE=ipp://MyPrinter.com/ipp/Printer1
```

result-type

Determines how the plug-in reports the results of the requested operation. The plug-in has the ability to return the results in any of the following ways:

Option	Description
cookie	Puts the results in a cookie.
html	Displays results as an HTML page generated by the plug-in.
msgBox	Displays results in a message box.
none	No response.
url	Passes the results as a URL parameter.

The plug-in defaults to none if **results-type** is not specified.

Example:

```
PARAM NAME=result-type VALUE=html
```

target-frame

Specifies the name of the frame to put the results or error information into. If the operation results type is url, the target frame will be the one reloaded with the indicated URL.

Example:

```
PARAM NAME=target-frame VALUE=FrameName
```

Supported Operation Strings

All requests to the plug-in have two required parameters. The first is operation, and the second is result-type. All operations except **op-client-interface-version** and **op-client-version-info** require the parameter **printer-url**. All requests support the optional parameter **error-type**.

With the exception of **op-printer-send-test-page** and **op-printer-remove**, the printer does not need to be installed to use the following operations:

- ♦ **op-client-interface version** (page 62)
- ♦ **op-client-is-printer-installed** (page 62)
- ♦ **op-client-version-info** (page 62)
- ♦ **op-job-cancel** (page 63)
- ♦ **op-job-get-info** (page 63)

- ◆ [op-job-hold](#) (page 63)
- ◆ [op-job-release-hold](#) (page 63)
- ◆ [op-printer-get-info](#) (page 64)
- ◆ [op-printer-get-status](#) (page 64)
- ◆ [op-printer-install](#) (page 64)
- ◆ [op-printer-list-all-jobs](#) (page 64)
- ◆ [op-printer-pause](#) (page 65)
- ◆ [op-printer-purge-jobs](#) (page 65)
- ◆ [op-printer-remove](#) (page 65)
- ◆ [op-printer-resume](#) (page 65)
- ◆ [op-printer-send-file](#) (page 65)
- ◆ [op-printer-send-test-page](#) (page 66)

op-client-interface version

Description:	Determines a version associated with the plug-in's HTML interface. Can also determine if a client upgrade needs to be invoked for any other client plug-in/HTML file compatibility issues.
Required information:	None
Supported return types:	URL, Cookie, Object

op-client-is-printer-installed

Description:	Determines if the indicated printer is installed on the workstation.
Required information:	Printer URL
Supported return types:	URL, Cookie, Object

op-client-version-info

Description:	Determines the version of the Novell® iPrint Client files running on the workstation.
Required information:	None

Supported return types:	Cookie, URL, Object
-------------------------	---------------------

op-job-cancel

Description:	Deletes the indicated jobs.
Required information:	Printer URL, job-list
Supported return types:	None, Message box, HTML, URL, Cookie

op-job-get-info

Description:	Gets job information for indicated jobs. The information returned depends on the printer's capabilities. This information can include job name, ID, owner, size, bytes processed, hold until, priority, time created, time started printing, and time finished printing.
Required information:	Printer URL, job-list
Supported return types:	Message box, HTML, URL, Cookie

op-job-hold

Description:	Puts a hold on the indicated jobs. A job that is printing might not be held.
Required information:	Printer URL, job-list
Supported return types:	None, Message box, HTML, URL, Cookie

Supported parameter is indefinite.

op-job-release-hold

Description:	Removes the hold on the indicated jobs.
Required information:	Printer URL, job-list
Supported return types:	None, Message box, HTML, URL, Cookie

op-printer-get-info

Description:	Gets additional information about the printer. The information returned depends on the printer's capabilities. This information can include printer location, printer make and model, and supported document formats (PDLs).
Required information:	Printer URL
Supported return types:	Message box, HTML, URL, Cookie

op-printer-get-status

Description:	Gets status information from the indicated printer. The information returned depends on the printer's capabilities. Status can include printer state, printer state reasons, printer state message, printer accepting jobs, and printer job count.
Required information:	Printer URL
Supported return types:	Message box, HTML, URL, Cookie

op-printer-install

Description:	Installs the indicated printer to this workstation.
Required information:	Printer URL
Optional information:	driver-options, persistence
Supported return types:	None, Message box, HTML, URL, Cookie

op-printer-list-all-jobs

Description:	Lists jobs for this printer.
Required information:	Printer URL
Supported return types:	Message box, HTML, URL, Cookie

op-printer-pause

Description:	Pauses the printer. If results are requested for this operation, the op-printer-get-status operation is executed to provide the new printer status.
Required information:	Printer URL
Supported return types:	None, Message box, HTML, URL, Cookie

op-printer-purge-jobs

Description:	Deletes all jobs for this printer.
Required information:	Printer URL
Supported return types:	None, Message box, HTML, URL, Cookie

op-printer-remove

Description:	Deletes the indicated printer from this workstation.
Required information:	Printer URL
Supported return types:	None, Message box, HTML

op-printer-resume

Description:	Resumes the printer. If results are requested for this operation, the op-printer-get-status operation is executed to provide the new printer status.
Required information:	Printer URL
Supported return types:	None, Message box, HTML, URL, Cookie

op-printer-send-file

Description:	Sends a printer-ready file to this printer.
--------------	---

Required information:	Printer URL, file-path-name
Supported return types:	None, Message box, HTML, URL, Cookie

op-printer-send-test-page

Description:	Sends a test page to this printer.
Required information:	Printer URL
Supported return types:	None, Message box, HTML, URL, Cookie
