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Open Enterprise Server

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Contents

About This Guide

This guide describes how to install, configure, and customize Novell® iPrint on Novell Open Enterprise Server for Linux.

Audience

This guide is intended for anyone involved in installing, managing, and using iPrint or NDPS for their print system.

Feedback

We want to hear your comments and suggestions about this manual and other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation, or go to www.novell.com/documentation/feedback.html and enter your comments there.

Documentation Updates

For the latest version of *Novell OES iPrint Administration Guide for Linux*, visit the Novell Open Enterprise Server documentation Web site (http://www.novell.com/documentation/oes).

Additional Documentation

Novell iPrint also is available for NetWare®. For more information, see *OES iPrint Administration Guide for NetWare*.

Documentation Conventions

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

A trademark symbol (®, ™, etc.) denotes a Novell trademark. An asterisk (*) denotes a third-party trademark.

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.

Overview

<div style="text-align:right; font-size:3em;">1</div>

1.1 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 1-1   *Installing a Printer from a Custom Map*
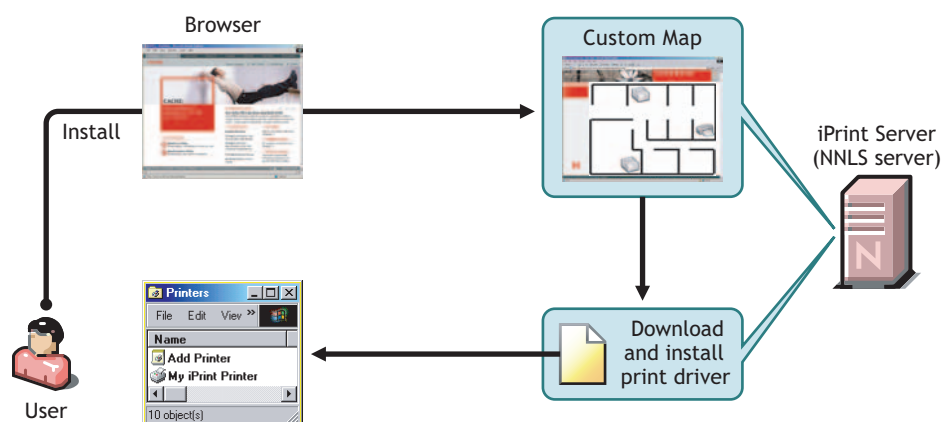
Using a Web browser, users point to a Web page that displays the available printers to install. By clicking a printer, the iPrint Client is installed (if not installed previously), the printer's driver is downloaded, and a printer is created on the user's workstation, enabling the user to send documents 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 familiar Web browser to locate nearby printers using iPrint's Printer List Web page 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 (Linux, Macintosh*, Windows*, etc.)

For more information about IPP, see the documents available on the Printer Working Group (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.

1.2 iPrint Component Overview

iPrint consists of three main components: the Print Manager, the Driver Store, and the iPrint Client. Other supporting components include Apache Web Server, Novell iManager, and eDirectory.

Figure 1-2 *iPrint Component Overview*
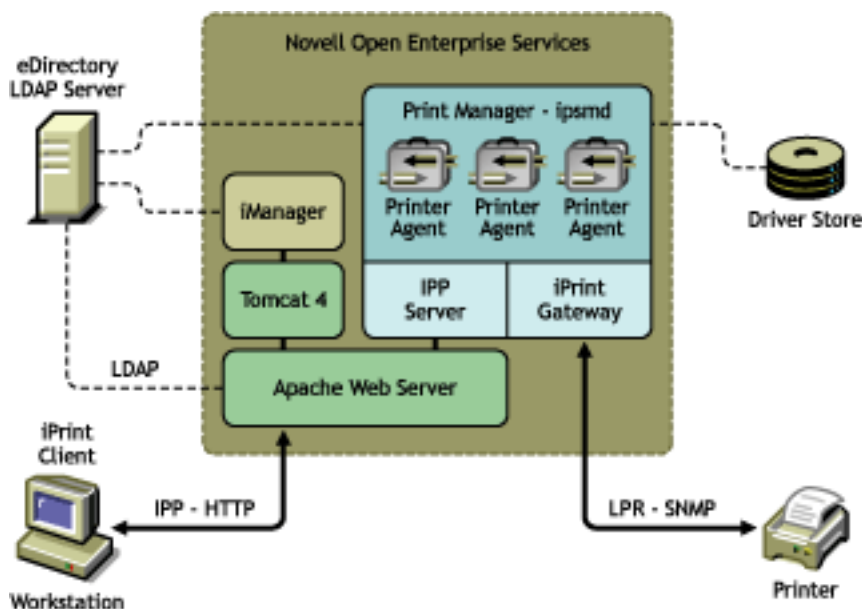
1.2.1 Print Manager

The Print Manager is an object in the eDirectory tree as well as software that runs on a NetWare®
server. The Print Manager provides a platform for Printer Agents to reside on the server. Printer
Agents are representations of actual printers. As print jobs are submitted to the Print Manager, the
print job is forwarded to a printer, when the printer is ready.

Figure 1-3   *Print Job Flow through the Print Manager*
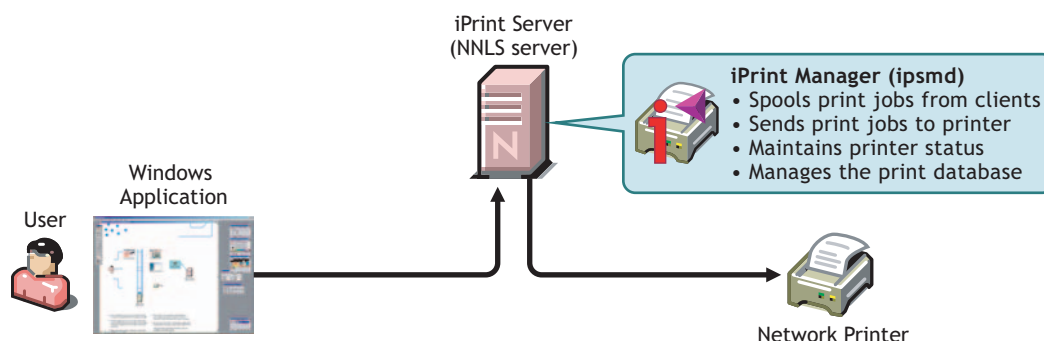
A single Print Manager can handle print jobs for multiple printers. Depending on your network
configuration (for example, remote locations), you can create additional Print Managers on other
servers, but only one Print Manager can exist on any one server. Using access control, the Print
Manager allows authorized users to print.

Printer Agent: The Printer Agent is an entry in the Print Manager database that represents the
physical printer. When you create a printer, a Printer Agent is created in the Print Manager's
database and a Printer object is added to 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
provides SNMP information that is displayed in the Print Manager Health Monitor.

IPP server: The IPP server's main function is to handle IPP requests from the Web server and
deliver the requests to the Print Manager or to the Broker.

iPrint Gateway: The gateway maintains communication with the printers. When a printer is ready,
the gateway requests print jobs from the Print Manager for the printer. The print jobs are sent to the
printer using LPR over the TCP/IP protocol. Using SNMP, the gateway also queries printers to get
their status and other printer information.

1.2.2 Driver Store

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

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

1.2.3 iPrint Client

The iPrint Client is available on the following platforms:

- Linux
- Macintosh
- Windows

Linux iPrint Client

This client lets Linux workstations install iPrint clients and includes the following components:

- **Browser plug-in:** The iPrint Client contains a browser plug-in for Mozilla-based browsers. This plug-in lets you install printers through your Web browser.
- **Console utility:** The Linux iPrint client includes the iprntcmd utility that lets you install printers, print test pages, and upload drivers to a driver store from a console prompt. For more information, see Section 4.5, "Using iprntcmd on Linux and Macintosh," on page 37.
- **CUPS Integrator:** The client integrates with the CUPS back end and uses the CUPS local spooler to send print jobs to the Print Manager.

For more information, including client requirements, see Section 4.1.1, "Linux: iPrint Client," on page 27.

Macintosh iPrint Client

The Macintosh iPrint Client contains a browser plug-in for the Safari Web browser that lets you install printers through your Web browser.

The client integrates with the CUPS back end and uses the CUPS local spooler to send print jobs to the Print Manager.

For more information, including client requirements, see Section 4.1.2, "Macintosh: iPrint Client," on page 31.

Windows iPrint Client

The Windows iPrint Client lets you install iPrint printers and configure iPrint on your workstation and includes the following 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 startup, 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 Print Manager.
- **Browser plug-in:** The iPrint Client contains a browser plug-in for Mozilla-based browsers and Internet Explorer. The Internet Explorer plug-in is an 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 40)

- **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 Section 4.6.4, "Implementing iPrint Using DOS Commands," on page 44.

For more information, including client requirements, see Section 4.1.3, "Windows: iPrint Client," on page 32.

1.2.4 Apache Web Server

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

1.2.5 Novell iManager

Use Novell iManager to create, configure, and manage your iPrint system. For complete management, including uploading printer drivers and PPD files, you need to access iManager from a workstation with the iPrint Client installed. For more information, about iPrint tasks in iManager, see Chapter 3, "Setting Up iPrint on Your Server," on page 21 and Chapter 6, "Managing Your Print System," on page 57. For more information about Novell iManager, see the *Novell iManager 2.5 Administration Guide*.

1.3 Understanding Port Usage

iPrint can use any port specified on Apache; however, iPrint defaults to two primary ports:

- **Port 443:** All secure printing occurs over port 443 using SSL.
- **Port 631:** All non-secure printing occurs over port 631.

  The iPrint Client also supports TLS. If your system is configured to use TLS including the client, all secure and non-secure printing occurs over port 631.

  During the OES install of the iPrint software, the CUPS back-end components are disabled on the server to avoid port 631 conflicts. Since iPrint uses CUPS to render print jobs before sending the print job to the Print Manager, printing from the server itself using CUPS or iPrint is not available.

1.4 iPrint Solutions

The following examples demonstrate how iPrint solves current business needs.

1.4.1 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.My_Company.Com/ipp.
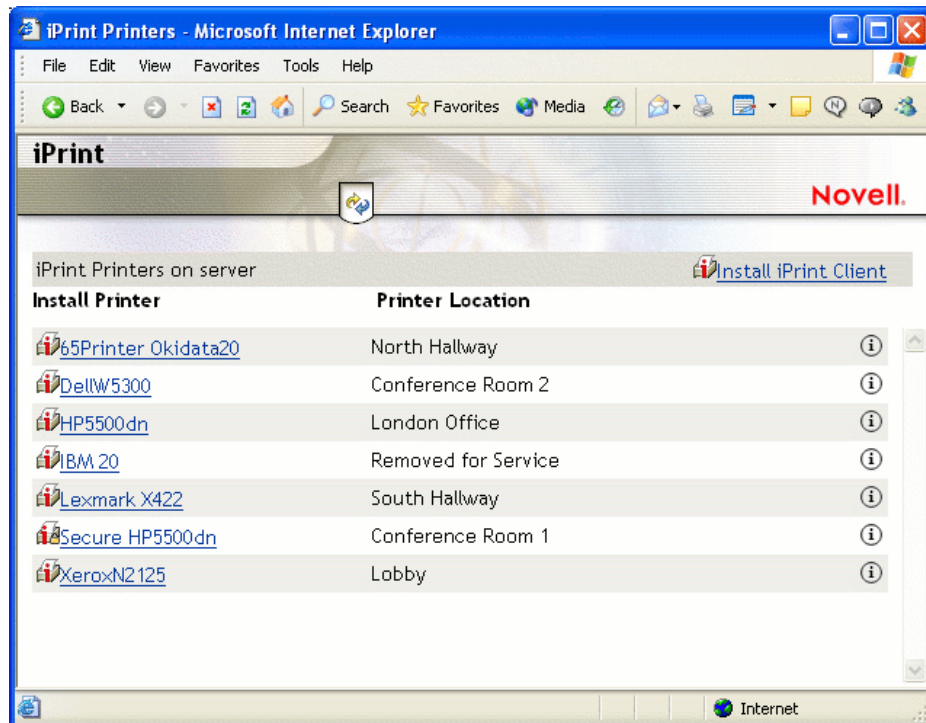
2. From the Web page, Juan selects the printer to install. The iPrint Client is automatically downloaded and is installed on his computer. The printer driver is also downloaded and the printer is installed on his computer.

3. From any application on his home computer, Juan can now print to the company's printer.

1.4.2 Printing While at a Remote Office

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.

1.4.3 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 8:00 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.

1.5 What's Next

- Chapter 3, "Setting Up iPrint on Your Server," on page 21: Helps you install the server software and configure your print system.

- Chapter 4, "Setting Up iPrint on Client Workstations," on page 27: Helps you deploy the iPrint Client to workstations and explains the features of the client.

- Chapter 5, "Customizing iPrint," on page 51: 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.

What's New

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The following changes and enhancements were added to iPrint for OES Support Pack 1:

2.1 Enhancements for Open Enterprise Server Support Pack 2

- Beginning with the iPrint Client v4.15, iprintcmd on Linux was renamed to iprntcmd. The options for iprntcmd on both Linux and Windows are now similar so that they can be used more effectively in login scripts. For more information see, Section 4.5, "Using iprntcmd on Linux and Macintosh," on page 37 and "Using iprntcmd.exe to Install iPrint Printers" on page 45.

- Beginning in Support Pack 2, the low security iPrint Client for Linux is the default client on the iPrint Printer List Web page instead of the high security client.

2.2 Enhancements for Open Enterprise Server Support Pack 1

- iPrint Direct Printing lets you install an iPrint printer and submit the print job directly to the printer, bypassing the Print Manager.

- The iPrint Printer List Web page can be sorted by the printer name.

- When installing a printer from a map or the iPrint Printer List Web page, you can set it as the default printer.

- You can automatically create new audit logs based on time, number of entries, or log size.

- Printer Driver Profiles is supported for Windows clients.

- Secure printing is supported on Linux and Macintosh clients.

- Firefox Web browser is supported on Macintosh iPrint clients.

- Migration from NDPS® or iPrint on NetWare® to iPrint on Linux.

- Migration from Windows Print Services to iPrint on Linux.

Setting Up iPrint on Your Server

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- Installing iPrint Software (page 21) (if not already installed).
- Setting Up iPrint (page 21)
- Upgrading to Novell iPrint (page 24)

3.1 Installing iPrint Software

If iPrint was selected during the Novell® Open Enterprise Server installation, the iPrint software components were automatically installed on the server and you can skip to Section 3.2, "Setting Up iPrint," on page 21. While the CUPS software is installed, CUPS is disabled to avoid port 631 conflicts.

For information on uninstalling iPrint or Open Enterprise Server, see ""Removing OES Linux Components" in the *OES Linux Installation Guide*.

iPrint installs the following RPMs:

Table 3-1   *iPrint RPM list*

RPM Name	Description
`novell-iprint-server`	Contains the core print manager, driver store, and other iPrint components.
`novell-iprint-client`	Contains the iPrint Clients for Linux, Macintosh, and Windows.
`novell-iprint-iprntman`	Contains Web-Based Enterprise Management (WBEM) system for managing core iPrint components.
`novell-iprint-management`	Contains the Novell iManager plug-in.
`novell-iprint-welcome`	Contains the HTML Welcome pages for iPrint that are accessed by entering the server IP address in a Web browser.

3.2 Setting Up iPrint

After installing the Open Enterprise Server 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™. You can access iManager from a Linux workstation running a Mozilla-based browser or from a Windows workstation using a Mozilla-based browser or Internet Explorer 5.5 with Service Pack 2 or later. For complete management, including uploading printer drivers and PPD files, you need to access iManager from a workstation with the iPrint Client installed.

For a review of supported browsers and iPrint operations, see Appendix A, "Supported Browsers for iPrint," on page 85.

NOTE: You cannot administer iPrint from iManager running on a Windows, Solaris*, or HP-UX* server platform.

For more information, see the *Novell iManager 2.5 Administration Guide*.

❑ Create a Driver Store: A Driver Store is a repository where administrators add printer drivers and PPD files used for their print system.

For more information, see Section 3.2.1, "Creating a Driver Store," on page 22.

❑ Add printer drivers and PPD files: To save an extra step of associating driver files when creating printers, you should add printer drivers to the Driver Store before you create printers.

❑ Create a Print Manager: The Print Manager communicates print job information between users and printers while also providing print job management, security, and spooling.

For more information, see "Creating Additional Print Managers" on page 67.

❑ Create Printers: This task helps you create printers for your system and associate printer drivers.

For more information, see Section 6.4.1, "Creating Additional Printers," on page 69.

3.2.1 Creating a Driver Store

You need only one Driver Store for your print system; however, depending on your network setup, you can add additional Driver Stores. A Driver Store must be created in order to create a Print Manager. See "Creating Additional Driver Stores" on page 76 for more information about placing Driver Stores on your network.

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

2 Fill in the fields.

Click the help for explanations about the fields.

3 Click *OK*.

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

3.2.2 Adding Printer Drivers

A printer driver or PostScript* Printer Description (PPD) file is a software entity that directly supports a physical printer, enabling it to carry out its functions.

Hardware vendors develop printer drivers and PPD files, which are specific to each printer. Most printers require different printer drivers for each operating system they interact with. You can view a list of printer drivers and PPD files you have uploaded to the Driver Store using iManager. You can add printer drivers and PPD files from diskettes, CDs, and the workstation operating system.

The Driver Store daemon must be running in order to add resources, and the iPrint Client must be installed on a Linux or Windows workstation. To install the client, go to http://*server_IP_address*/ipp and click the Install iPrint Client link. For more information on installing the client, see Chapter 4, "Setting Up iPrint on Client Workstations," on page 27. For a review of supported browsers and driver upload operations, see Section A.2, "Supported Browsers with the iPrint Plug-in and Novell iManager," on page 85.

To add printer resources to the Driver Store:

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

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

3 Do one of the following:

- Click *Add from File* to add printer resources from a printer driver `.inf` file or PPD file.
- Click *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.

You can also install driver files from a Linux console prompt using iprntcmd command. See Section 4.5, "Using iprntcmd on Linux and Macintosh," on page 37 for more information.

3.2.3 Creating 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, for example, across a WAN link. The Print Manager must be running in order to create printers. See "Creating Additional Print Managers" on page 67 for more information about placing print managers on your network.

IMPORTANT: The Print Manager creates a URL for each printer based on the print manager configuration. When you create the print manager, you can specify an IP Address or DNS name for the iPrint Service. You should always use a DNS name because using an IP address causes users to delete and reinstall printers if the IP address changes.

A Driver Store must exist before you can create a Print Manager. See Section 3.2.1, "Creating a Driver Store," on page 22 for more information.

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

2 Fill in the fields.

   Click the help for explanations about the fields.

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

   If you do not do this, you must 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 Driver Store is created, the daemon is loaded on the server and you can start adding printer drivers. See "Updating Printer Drivers" on page 77 for more information.

3.2.4 Creating a Printer

Before you can create a printer, you must first create a Print Manager on your server. See Section 3.2.3, "Creating a Print Manager," on page 23 for more information.

1 In iManager, click *iPrint > Create Printer*.

2 Follow the prompts and fill in the fields.

Click the help for explanations about the fields.

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 Driver Store and then associate the drivers to the printer by clicking Manage Printer > Drivers.

4 Click *Next* to create the printer.

3.3 Upgrading to Novell iPrint

Depending on your current print system, you can upgrade to iPrint running on Linux by using one of the following methods:

- "Upgrading Existing OES Linux iPrint Systems" on page 24
- Section 3.3.2, "Migrating iPrint on NetWare to OES Linux," on page 24
- "Migrating an Existing NDPS Print System to iPrint on OES Linux" on page 25
- Section 3.3.4, "Replacing an Existing Windows Print System with iPrint," on page 25

3.3.1 Upgrading Existing OES Linux iPrint Systems

To upgrade iPrint on an existing OES Linux server, apply the latest Support Pack patches.

IMPORTANT: When you upgrade or apply a support pack, the existing `iprint.ini` file is overwritten by the one in the update. If you made changes to the `iprint.ini` file, you should back up the file before installing the updates, and then copy your old one over the new file. If you want new functionality included with the latest iprint.ini, you should duplicate the settings in `iprint.bak` in the new `iprint.ini`.

3.3.2 Migrating iPrint on NetWare to OES Linux

1. Run the Server Consolidation Utility.

   For more information, see "Consolidating NDPS Printer Agents" in the *Novell Server Consolidation and Migration Toolkit Administration Guide*.

2. Reconfigure DNS to point to the new server.

3.3.3 Migrating an Existing NDPS Print System to iPrint on OES Linux

To migrate your existing NDPS® print system serviced by NetWare to an OES Linux server, complete the following tasks:

1. Set up DNS for your existing system.

   For more information, see "Setting Up DNS for the Print Manager" in the *OES iPrint Administration Guide for NetWare*.

2. Upgrade your NDPS Print system to iPrint.

   For more information, see "Upgrading from NDPS to iPrint" in the *OES iPrint Administration Guide for NetWare*.

3. Distribute the iPrint Client.

   For more information, see "Windows: Distributing the iPrint Client" in the *OES iPrint Administration Guide for NetWare*.

4. Edit the UpgradeNDPSPrinters entry in `iprint.ini`.

   For more information, see "Upgrading NDPS Printers to iPrint Printers" in the *OES iPrint Administration Guide for NetWare*.

5. Run the Server Consolidation Utility.

   For more information, see "Consolidating NDPS Printer Agents" in the *Novell Server Consolidation and Migration Toolkit Administration Guide*.

6. Reconfigure DNS to point to the new server.

3.3.4 Replacing an Existing Windows Print System with iPrint

To replace an existing Windows Print System with an OES Linux iPrint server, use the iPrint Migration Utility for Windows Printing (http://support.novell.com/tools/csp), which is available separately. See the documentation included with the Migration Utility for more information.

3.4 What's Next

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

- Chapter 4, "Setting Up iPrint on Client Workstations," on page 27: Helps you deploy the iPrint Client to workstations and explains the features of the iPrint Client.
- Chapter 5, "Customizing iPrint," on page 51: 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.

Setting Up iPrint on Client Workstations

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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. If the iPrint Client software is already installed then the printer driver is downloaded and the printer is installed on the user's workstation.

4.1 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, including the iPrint Printer List Web page, distribution software like ZENworks®, login scripts, etc. Three clients are available.

The clients are located in the following directories:

OES Linux	`/var/opt/novell/iprint/htdocs`
OES NetWare	`sys:\apache2\htdocs\ippdocs`

4.1.1 Linux: iPrint Client

Linux: iPrint Client Requirements

In order for iPrint to work properly, workstations should have the following:

❑ Novell Linux Desktop or SUSE® 9.2 Professional

> **IMPORTANT:** To install the client, you must have the root password or rights as root.

❑ A Mozilla-based browser such as Epiphany, Firefox*, or Galeon

> **NOTE:** If the iPrint server is busy when your installed printer attempts to communicate, CUPS moves the printer into an error state and holds all print jobs. To release print jobs, use the printer management utility to restart the printer.

Linux: Controlling Access to the Workstation Print System

The Linux iPrint Client is packaged in two different, specialized installations that control access to the workstation's print system. The following table explains the differences between the two clients.

Table 4-1   *iPrint Client for Linux RPM list*

Client File Name	Workstation Access	Description
`novell-iprint-xclient-sh-version.i586.rpm`	Security high. Limited access to the print system.	This client requires workstation users to be defined with `lppasswd` to install, delete, or administer printers on the workstation. When performing one of these print operations, the user is challenged for a password.
`novell-iprint-xclient-sl-version.i586.rpm`	Security low. Unlimited access to the print system.	This client allows all users of the workstation to install, delete, or administer printers and print jobs on the workstation, including printers and print jobs of other users. By default, the iPrint Printer List Web page installs this rpm.

The above clients do not affect installation of the iPrint Client, just access to the workstation print system. To install the iPrint Client you still need root permissions. Also, these clients do not limit printing capabilities.

> **IMPORTANT:** To install the iPrint Client you need root permissions. To upload drivers from the system, you need to be defined with `lppasswd` or know the root password; otherwise, when you attempt to add drivers from the system, the driver list is blank. To define a user to be part of `lppasswd`, you can use the following command:
>
> `lppasswd -a linux_user_account -g sys`

Printing to Secure printers

When installing a secure iPrint printer, you might be prompted twice for your username and password. First, you are prompted to provide your network credentials to verify that you have access

to the printer (it would be no use installing a printer that would not allow you to print). The second prompt is for CUPS, to ensure you have rights to install printers on the client machine. You need to provide the root password or be defined in the CUPS `lppasswd`.

Printing to secure printers is supported only when you are logged in to the desktop. If for any reason the CUPS iPrint back end cannot deliver the job to a secure printer, the job is requeued on the client with a hold. You can then see the held job and release it after you log in to the desktop.

NOTE: This client does not support printing from text logins such as SSH, unless the GUI is running on the host workstation.

Linux: Distributing the iPrint Client

Use one of the following methods to install the iPrint Client on users' workstations:

Linux: Install the Client from iPrint Printer List Web Page

You can download and install the iPrint Client from the iPrint Printer List Web page that resides on the server where the Print Manager is loaded. By default, the link is set to install the novell-iprint-xclient-sl-*version*.i586.rpm high security client. You can change this by creating a symbolic link in `/var/opt/novell/iprint/htdocs` using the following command:

```
ln -sf client novell-iprint-xclient.i586.rpm
```

where *client* is the client filename noted above.

To reach the Web page:

1 Enter the iPrint server 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.my_company.com, you would access iPrint from the following URL:

http://printing.my_company.com/ipp
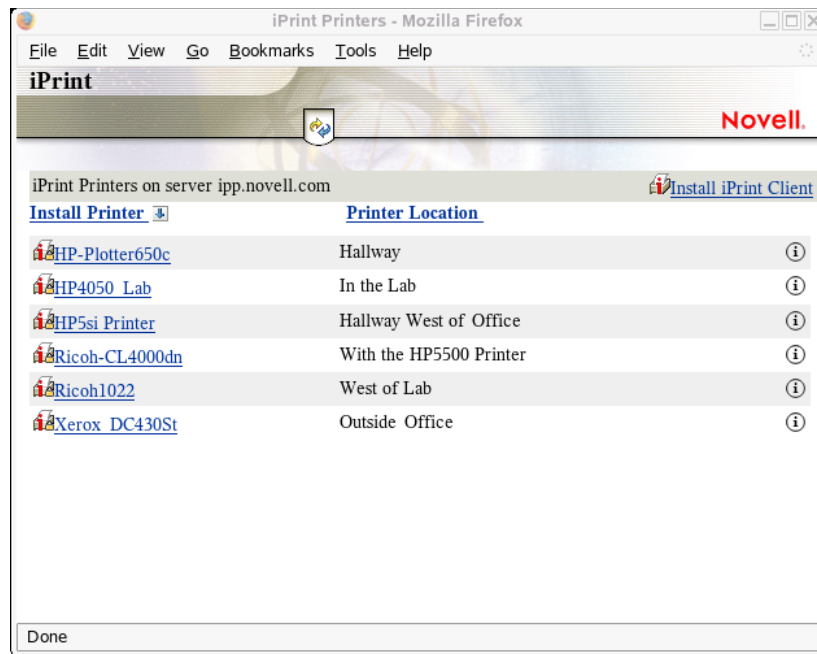
2 Click the printer you want to install.

If the iPrint Client is not yet installed on your workstation, you are prompted to install it.

3 When prompted, save the iPrint Client RPM to your desktop or home directory.

4 Install the iPrint Client RPM by double-clicking the RPM. If a file association for the RPM does not exist, use an RPM installer program.

5 Exit and restart your Web browser before installing printers.

6 (Conditional) If using the KDE desktop and printing to secure printers, re-login as a user (not root) to start the iPrint listener or run the following command to manually load the listener:

`/opt/novell/iprint/bin/iprint-listener`

For GNOME* users, you must load the iPrint listener manually or configure GNOME to load the it. See "Additional Configuration for Secure Printers with GNOME" on page 30.

If you are using a non-standard installation of a browser, and the plug-in does not appear, create a symbolic link in the browser's plug-in directory using the following command:

`ln -s opt/novell/iprint/plugin/npnipp.so`

Deliver the Client Using Distribution Software

Using client distribution software (such as ZENworks), you can also deliver the iPrint Client and possibly printers to your client workstations. For more information, see the documentation for your distribution software.

Additional Configuration for Secure Printers with GNOME

Users of the GNOME desktop that are printing to secure printers (printers that require you to authenticate) must add `iprint-listener` to the list of applications launched at login; otherwise, print jobs are not submitted to the secure printer.

NOTE: This does not apply to the KDE Desktop or GNOME running on the Novell Linux Desktop. This also does not apply when printing to nonsecure printers.

1 On the GNOME desktop, click *System > Personal Settings*.

2 Under the System section, click *Sessions*.

3 Click *Startup Programs > Add*.

4 For the Startup Command, enter `/opt/novell/iprint/bin/iprint-listener`.

5 Click *OK > Close*.

6 Load `iprint-listener` by either running the command in or by logging out and logging in again.

The next time you log in, `iprint-listener` is automatically loaded.

If `iprint-listener` is not running, jobs submitted to secure iPrint printers are held in the local client queue. To release the jobs, start `iprint-listener` and then resume the job on the printer.

4.1.2 Macintosh: iPrint Client

Macintosh: iPrint Client Requirements

❑ MacOS 10.2 or later

❑ Firefox 1.0.*x* or Safari Browser 1.2

NOTE: If the iPrint server is busy when your installed printer attempts to communicate, CUPS moves the printer into an error state and holds all print jobs. To release print jobs, use the printer management utility to restart the printer.

Macintosh: Distributing the iPrint Client

Use one of the following methods to install the iPrint Client on users' workstations:

Macintosh: Install the Client from iPrint Printer List Web Page

You can download and install the iPrint Client from the iPrint Printer List Web page that resides on the server where the Print Manager is loaded. To reach the page

1 Enter the iPrint server 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.my_company.com, you would access iPrint from the following URL:

http://printing.my_company.com/ipp
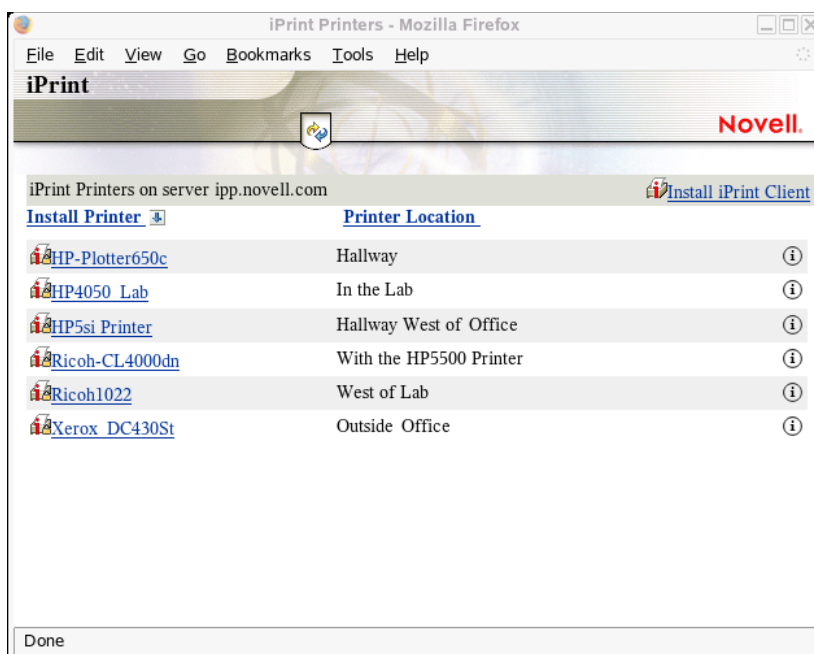
2 The disk image file is downloaded, the install package extracted, and the disk image file is move to the trash. Then the iPrint Client install is launched.

Click the printer you want to install.

2a If the iPrint Client is not yet installed on your workstation, follow the prompts to install the client.

The disk image file is downloaded, the install package extracted, and the disk image file is moved to the trash. Then the iPrint Client install is launched.

2b After installing the client, restart your Web browser in order for the browser to recognize the iPrint Client plug-in.

3 After installing the client, restart your Web browser in order for browser to recognize the iPrint Client plug-in.

4 (Optional) PostScript Printer Description (PPD) files that use Foomatic filters should be running the latest Foomatic filter script and ESP Ghostscript, which are available from Linux Printing.org (http://www.linuxprinting.org/macosx/hpijs).

Deliver the Client Using Distribution Software

Using client distribution software (such as ZENworks), you can also deliver the iPrint Client and possibly printers to your client workstations. For more information, see the documentation for your distribution software.

4.1.3 Windows: iPrint Client

Windows: iPrint Client Requirements

❑ Windows 95/98/ME or Windows NT*/2000/XP Professional

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

❑ Web browser with JavaScript* enabled *and*

- Microsoft Internet Explorer 5.5 or later
- Mozilla-based Web browser

NOTE: The iPrint Client for Windows uses ActiveX controls when using Internet Explorer. By default, Internet Explorer's Run ActiveX Controls and Plug-ins are enabled. However, if this has been changed, you need to reenable it for iPrint to work correctly. This setting is found in Tools > Internet Options > Intranet > Custom Level. You need to enable the setting on the Internet page, if you are running across the Internet

Windows: iPrint Client Installation Files

The Windows 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.

Table 4-2 *iPrint Clients for Windows*

iPrint Client Filename	Description
nipp.exe	Installs 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 installation, but requires no user intervention.
	NOTE: Because Windows 9*x* users must reboot their workstations after the client is installed, you should use `nipp-sr.exe` unless you are using a software distribution package that reboots the workstation.
nipp-sr.exe	Installs the iPrint Client and reboots the workstation. A screen displays the progress of the installation, 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.

NOTE: Windows 9*x* users must restart their workstations. After the iPrint Client is installed, Windows NT/2000/XP users do not need to restart, unless they are using iPrint utilities to capture LPT ports.

Windows: Distributing the iPrint Client

Use one of the following methods to install the iPrint Client on users' workstations:

NOTE: Windows 9*x* users must restart their workstations. After the iPrint Client is installed, Windows NT/2000/XP users do not need to restart, unless they are using iPrint utilities to capture LPT ports.

Windows: Install the Client from iPrint Printer List Web Page

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

Figure 4-1   *iPrint Printer List Web Page*
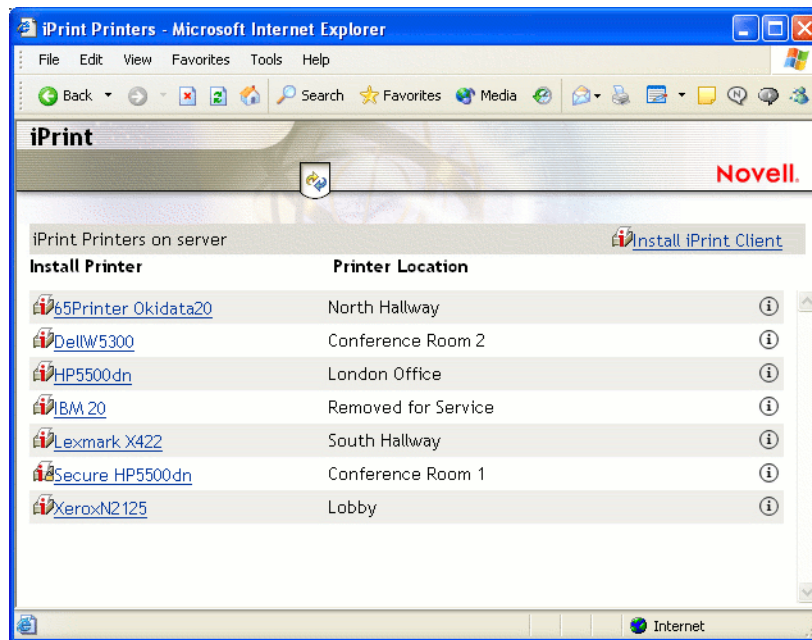
For example, if the DNS name for printing is printing.my_company.com, you would access iPrint from the following URL:

http://printing.my_company.com/ipp

Deliver the Client Using Distribution Software

Using client distribution software (such as ZENworks), you can also deliver the iPrint Client and possibly printers to your client workstations. For more information, see the documentation for your distribution software.

For example, when using Novell's ZENworks, you can use any of the iPrint Clients described in "Windows: iPrint Client Installation Files" on page 33 to deliver the Windows iPrint Client. Most likely you need to use the `nipp.zip` file to deliver the client to the desktop and execute `setupipp.exe` with one of the command line parameters.

4.2 Installing Printers

You can install and distribute iPrint printers in the following ways:

- Section 4.2.1, "Using the iPrint Printer List Web Page," on page 35
- "Creating Location-Based Printing Web Pages" on page 35

NOTE: If you are running Windows XP Service Pack 2 or other browsers with pop-up blocking, you might encounter problems with pop-up windows. To manage iPrint in iManager and to install printers with iPrint Clients, turn off pop-up blocking or allow the URL.

4.2.1 Using the iPrint Printer List Web Page

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 and configuration of a printer including a list of print jobs.

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

The iPrint Printer List 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 and follow the prompts.

During the printer installation, iPrint downloads and installs the printer driver, if one is associated with the printer, and installs the printer on the user's workstation. The first time a printer is installed, printer drivers are forced to the workstation, even if the workstation contains a newer driver. Print Managers refresh their saved copies of printer drivers for the printers they are hosting with updated printer drivers from the associated Driver Store.

4.2.2 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 organized 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 Customized Printer Lists" on page 53.

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 workstations. 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 51.

4.2.3 Removing iPrint Printers

Removing iPrint printers is dependent on your workstation's operating system.

- "Linux: Deleting iPrint Printers" on page 36
- "Macintosh: Deleting iPrint Printers" on page 37
- "Windows: Deleting iPrint Printers" on page 37

Linux: Deleting iPrint Printers

To remove iPrint printers, use the CUPS management utility included with your Linux distribution.

GNOME users of Novell Linux Desktop (NLD) running SUSE 9 cannot delete printers. If security is not an issue and you are running the low-security iPrint Linux Client, you can use the following instructions to configure GNOME so that all desktop users can add and delete printers.

WARNING: The following procedure should be implemented only if security is not an issue because it lets all users of the desktop access the print system.

---

1 On the NLD workstation, log in as root.

2 Edit `/etc/sudoers` and add the following line to the end of the file:
`ALL ALL = NOPASSWD: /opt/gnome/bin/gnome-cups-manager`

3 Edit `/opt/gnome/share/control-center-2.0/capplets/printconf.desktop` by making the following changes:

Existing line: `TryExec=gnome-cups-manager`

Modified line: `TryExec=gnome-cups-manager-root`

Existing line: `Exec=gnome-cups-manager`

Modified line: `Exec=gnome-cups-manager-root`

4 Create a text file with the following:

```
#!/bin/bash
sudo /opt/gnome/bin/gnome-cups-manager
```

5 Save the file as `/opt/gnome/bin/gnome-cups-manager-root`.

6 Open a terminal as user root and change the permissions of the file `/bin/gnome-cups-manager-root` by executing the following command: `chmod 755 /opt/gnome/bin/gnome-cups-manager-root`

To test the new settings

1 Log in to GNOME as a normal user, not as root.

2 Click *System > Personal Settings*.

3 Double-click *Printers*.

4 From the *Printers Folder*, right-click a printer.

If the *Remove* menu item is listed, then the procedure worked correctly. If the Remove item is not listed, repeat the procedure again.

Macintosh: Deleting iPrint Printers

Use the print list management utility included with the operating system.

Windows: Deleting iPrint Printers

Use the printer folder to delete printers installed on your system.

4.3 Updating the iPrint Client

Periodically, users need updates to the Novell iPrint Client. You need to decide how to manage this. You can allow iPrint to automatically update the clients, see "Updating the iPrint Client Automatically" on page 47, or you can choose to distribute a newer client using a software distribution package such as Novell ZENworks.

4.4 Managing Print Jobs from the Client

Users can monitor and manage their own print jobs from their workstations.

Linux: To manage print jobs or delete printers, use the CUPS management utility included with your Linux distribution.

Macintosh: To manage print jobs or delete printers, use the print list management utility included with the operating system.

Windows: To manage print jobs or delete printers, use the Windows printers folder on the Start menu or in the Control Panel. To monitor the status of the last 10 print jobs, right-click the iPrint icon in the system tray and select Document Status.

4.5 Using iprntcmd on Linux and Macintosh

The Linux and Macintosh iPrint Clients include the `iprntcmd` utility that performs the same functions as `iprntcmd` in the Windows iPrint Client. In addition, you can use `iprntcmd` to upload PPD drivers to a Driver Store from the Linux iPrint Client. `iprntcmd` is located in `/opt/novell/iprint/bin/iprntcmd` on Linux and in `/usr/bin` Macintosh.

Use the following parameters when executing the `iprntcmd` command.

Table 4-3 *Parameters used with* `iprntcmd`

Parameters	Description
-a or --addprinter *printer_uri*	Installs the specified printer.
-d or --delprinter *printer_uri*	Removes the specified printer.

Parameters	Description
-g or --getdefault	Displays the default printer installed on the workstation.
-h or --help	Displays help for the command.
-j or --listjobs *printer_uri*	Lists the print jobs for the specified printer that are on the server in a pending or printing state.
-l or --listlocalprinters	Lists printers installed on the workstation.
-L or --listprintersonserver *psm-hostname or psm-address*	Lists iPrint printers on the specified Print Manager where *psm-hostname* or *psm-address* can be a DNS name or IP address.
-p or --printfile *printer-uri file path*	Sends a printer-ready file to the specified iPrint printer.
-P or --ppdlist	Lists the PPDs installed on this workstation.
-s or --setdefault *printer_uri*	Sets the specified printer as the default.
-t or --testpage *printer_uri*	Prints a test page to the specified printer.
-u or --upload *ids_uri ids_user ppd*	Uploads the specified PPD files to the indicated driver store where *ids_uri* is the IP Address or DNS name for the driver store, *ids_user* is the username with rights to add drivers to the driver store, and *ppd* is the directory path and filename to the PPD files. You can use wildcards in the PPD filename.
-U or --upload RMS *rms_uri rms_user rms_address ppd*	Uploads the specified PPD files to the indicated Broker where *rms_uri* is the IP Address or DNS name for the Broker's associated print manager, *rms_user* is the username with rights to add drivers to the broker, *rms_address* is the IP address or DNS name of the broker, and *ppd* is the directory path and filename to the PPD files. You can use wildcards in the PPD filename.
-v or --version *server_uri server_user*	Displays the server platform and version information where *server_uri* is the URI for the server and *server_user* is a valid user for the server.

Syntax

```
iprntcmd parameters
```

You must use quotes around parameter information that contains a space, such as printer names and printer drivers.

Example

To install a printer named Color Printer 1 and set it as the default printer, you would enter the following for nonsecure printing

```
iprntcmd -a "ipp://printing.my_company.com/ipp/Color Printer 1"
```

You should use ipp:// instead of http:// or https://.

4.6 Windows Client: Using Additional Features

4.6.1 Updating the iPrint Client

Periodically, users need updates to the Novell iPrint Client. You need to decide how 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 47 for more information.

4.6.2 Using the iPrint Client Tray Icon

On Windows workstations, the iPrint Client adds an icon to the system tray. The iPrint icon lets you receive notification when a job has printed and access iPrint client settings quickly. Right-clicking the icon displays the following menu options:

iPrint Settings: Opens the iPrint Client Settings.

Document Status: Lets you check the status and other information for the last 10 documents printed.

Launch Printer Folder: Opens the Windows printer folder.

Find/Install Printers: (Optional) Opens a browser window to the Menu Link URL specified on the Tray Icon tab.

Close: Removes the iPrint icon from the System Tray until the next reboot. To make the icon reappear in your system tray, click *Start > Programs > Novell iPrint > iPrint Client Settings > Tray Icon* and deselect the *Enable the iPrint icon in the system tray*. Click *OK*. Then repeat to enable the icon.

To permanently remove the tray icon, see "Managing iPrint's System Tray Icon" on page 40.

4.6.3 Configuring 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 only exposing 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 Clients 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 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 Print 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 Settings > Proxy*.

2 To use a proxy server, check the check box and then specify the URL for the proxy server.

3 Click *OK*.

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

Managing Passwords for Remote iPrint Servers

You can manage passwords for print services that you indicated should be remembered by your workstation. The ability to delete passwords is useful if you are connected to a print service that you no longer use.

To manage passwords for print services:

1 Click *Start > Programs > Novell iPrint > iPrint Settings > Passwords*.

2 Select the password you want to remove, and then click *Clear Password*.

Managing iPrint's System Tray Icon

The iPrint icon in the system tray lets you receive notification when a job has printed and view a list of print jobs that you have submitted.

1 Click *Start > Programs > Novell iPrint > iPrint Settings > Tray Icon*.

2 Modify the settings.

For more information about the settings, see Section 4.6.2, "Using the iPrint Client Tray Icon," on page 39.

Managing Print Job Notifications

iPrint can notify you when your document has printed or needs attention by way of a pop-up message in the system tray.

To turn iPrint notification on or off:

1 Click *Start > Programs > Novell iPrint > iPrint Settings > Notifications*.

2 Select or deselect the check box as indicated.

NOTE: If you close the iPrint applet running in the system tray, you do not receive notifications. To restart the applet, see Using the iPrint Client Tray Icon.

Password Management Enhancements

Beginning with iPrint Client v4.16 for Windows, the following enhancements were made:

- Using Novell Client Credentials (page 41)
- Maintaining Grace Login Balance (page 41)
- Formatting Login Credentials (page 41)

Using Novell Client Credentials

If the Novell Client is installed and was used to authenticate to eDirectory, the iPrint Client retrieves the username and password from the Novell Client and uses the credentials to authenticate to secure printers. Depending on your configuration, NetIdentity might no longer be needed to share credentials.

Maintaining Grace Login Balance

Depending on your configuration, the iPrint Client will attempt to maintain the grace logins by failing all secure printing requests that would use a grace login. To print, a user must change their password to eliminate the grace login condition. Use of this feature requires the following:

- The user is authenticated to a tree where the print service is running.
- The tree is using grace logins.
- The user must be using the Novell Client for Windows

Grace login checking is enabled by default. To disable grace login checking, edit the HKEY_LOCAL_MACHINE\SOFTWARE\Novell-iPrint\Settings\GraceLoginsOn registry entry. Change the value to 0 to turn off grace login checking.

Formatting Login Credentials

The iPrint Client caches the credentials entered in the iPrint Printer Authentication dialog in the appropriate eDirectory or LDAP style for use with any of the iPrint back-end services (NetWare 6.5 and earlier or Open Enterprise Server.)

For example, entering `user.novell` in the login dialog is cached as follows:

- `user.novell` for eDirectory credential
- `CN=user,O=novell` for LDAP_DN credentials

- `user` for the LDAP credential

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.

You can download the iPrint Client from the iPrint Printer List or you can copy and execute `nipp.exe` from the iPrint server in `sys:\apache2\htdocs\ippdocs`.

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

Configure 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 only be installed and deleted by the user who installed the printer. User printers are not available to other users on the workstation.
- **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 iPrint for terminal server clients:

1 Log in to the terminal server with Administrator or equivalent rights.

2 Click *Start > Programs > Novell iPrint > iPrint 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 Print 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 the LPT port. iCapture redirects any data sent to the LPT port to the iPrint printer. Olga can now run her MS-DOS application from her Windows workstation and send print jobs to an iPrint Printer.

To run the utility:

1 Click *Start > Programs > Novell iPrint > iPrint 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 supersede all other port assignments. iPrint port assignments remain in effect, even after the workstation restarts, until you end the capture.

Controlling iPrint Settings through the Windows Registry

You can control the availability of the iPrint Tray Icon in the Windows System Tray and some of the iPrint Settings attributes using the associated registry entries. Depending on the version of the iPrint Client, the registry keys are located in one of the following locations:

Table 4-4   *iPrint Client Registry Key Locations*

iPrint Client Version	Registry Location
4.15 and earlier	HKEY_CURRENT_USER\Printers
4.16 and later	HKEY_CURRENT_USER\Software\Novell-iPrint

Regardless of the iPrint Client version, the same registry entries are used. The numeric values use hexadecimal.You can also change the text that should be displayed. For example, you can change the URL associated with the Find/Install Printers link in the Tray Icon Menu to one that your company uses by editing the value of the Tray Icon Link entry.

Table 4-5   *iPrint Client Registry Entry Settings*

Registry Entry	Description	Values
Job Notify Setting	Pop-up messages in the System Tray about the status of a print job.	0 = Off 1 = On The default is 1.
Proxy Server URI	URL to be used for a proxy server	User defined. Use a URL such as http://*ProxyServer_Or_Addr:port_number*
Proxy Server ZEN URI	This entry is modified by ZENworks.	WARNING: Modifying this setting outside of ZENworks might cause ZENworks to fail.

Registry Entry	Description	Values
Proxy Settings	Enable/disable the use of the Proxy Server URI	10000 = Off 10001 = On The default is 10000.
Tray Icon Link	URL associated with the Find/Install Printers link in the Tray Icon Menu.	User defined. The default is myurls.com.
Tray Icon Setting	Enables/disables the tray icon in the system tray. To receive notifications, the tray icon must be enabled (On).	0 = Off 1 = On The default is 1. Requires a workstation restart to take affect.

NOTE: All changes take affect immediately except the Tray Icon Setting, which requires you to logout and log back in or restart the workstation before for the changes to take affect.

4.6.4 Implementing iPrint Using DOS Commands

The following 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
- Iprntcmd.exe

Using Icapture.exe to Capture Printer Ports

`Icapture.exe` is a 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 from a DOS-box command line, called from a batch file, or called from a login script. `Icapture.exe` is compatible with Windows NT/2000/XP/2003.

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

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

Table 4-6 Parameters used with `icapture.exe`

Parameter	Description
LPT*x* or L=*x* where *x* is the port number	The port you want to capture.
P=*printer_name*	The name of the printer that appears in the Printers Folder after the iPrint printer is installed.

Parameter	Description
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

```
icapture parameters
```

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 DOS prompt. The iprntcmd.exe command can install, remove, or set a printer as the default printer. This command is most often used in login scripts in conjunction with the icapture.exe command.

Use the following parameters when executing the iprntcmd command.

Table 4-7 *Parameters used with* `iprntcmd`

Parameters	Description
-a or --addprinter *options printer_uri*	Installs the specified printer. You can replace *options* with any or all of the following: • no-gui: Does not display the printer installation dialog box when installing a printer. • default: Installs the specified printer as the default printer. • temp: The installed printer is removed when the workstation is rebooted. **NOTE:** These options are available on the Windows Client only.
-d or --delprinter *printer_uri*	Removes the specified printer.
-g or --getdefault	Displays the default printer installed on the workstation.
-h or --help	Displays help for the command.
-j or --listjobs *printer_uri*	Lists the print jobs for the specified printer that are on the server in a pending or printing state.
-l or --listlocalprinters	Lists printers installed on the workstation.
-L or --listprintersonserver *psm-hostname or psm-address*	Lists iPrint printers on the specified Print Manager where *psm-hostname* or *psm-address* can be a DNS name or IP address.
-p or --printfile *printer-uri file path*	Sends a printer-ready file to the specified iPrint printer.
-P or --ppdlist	Lists the PPDs installed on this workstation.
-s or --setdefault *printer_uri*	Sets the specified printer as the default.
-t or --testpage *printer_uri*	Prints a test page to the specified printer.
-v or --version *server_uri server_user*	Displays the server platform and version information where *server_uri* is the URI for the server and *server_user* is a valid user for the server.

Syntax

```
iprntcmd parameters
```

Example

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

```
iprntcmd -a -d ipp://printing.my_company.com/ipp/ColorPrinter1
```

4.6.5 Using iPrint with NetIdentity

The NetIdentity agent works with eDirectory™ authentication to provide background authentication to Windows Web-based applications that require eDirectory authentication. iPrint supports the NetIdentity agent included with the Novell Client 32 running on Windows NT/2000/XP only. If the NetIdentity agent is installed on the workstation, iPrint uses NetIdentity when authenticating. For more information on using NetIdentity, see the *NetIdentity Administration Guide for NetWare 6.5*.

4.6.6 Manage Global Actions through Iprint.ini

A configuration file named `iprint.ini` is located on each server where an Print Manager is running. The `iprint.ini` file should be synchronized across all servers where iPrint and a Print Manager are running. The `iprint.ini` file can be found in the following locations

Linux	`/var/opt/novell/iprint/htdocs/`
NetWare	`sys:\apache2\htdocs\ippdocs\`

The file controls the following tasks:

- "Updating the iPrint Client Automatically" on page 47
- "Creating a Short Printer Name Profile" on page 48
- "Installing User Printers" on page 48

IMPORTANT: When you apply a support pack, the existing `iprint.ini` file is saved as `iprint.bak` and a new `iprint.ini` is copied over. If you made changes to the `iprint.ini` file, you must delete the new `iprint.ini` file from the support pack and rename `iprint.bak` to `iprint.ini`. If you want new functionality included with the latest `iprint.ini`, you should duplicate the settings in `iprint.bak` in the new `iprint.ini`.

Updating the iPrint Client Automatically

When a workstation boots up, iPrint checks the default printer to ensure the workstation 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 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 `iprint.ini`.

Linux	`/var/opt/novell/iprint/htdocs/`
NetWare	`sys:\apache2\htdocs\ippdocs\`

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 Print Manager are running.

After the iPrint Client is updated, Windows 9*x* users must restart their machines. Windows NT/2000/XP users do not need to immediately reboot, unless they are using iPrint utilities to capture LPT ports.

Creating a Short 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.My_Company.Com\ColorPrinter. These printer names are often too long to fit in an application's display field for the printer name. Using a Short Printer Name Profile, you can replace the UNC server name (or *dns_name*) for all printers on a Print 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 \\My_Company\ColorPrinter.

NOTE: You should keep the UNC path and printer name to less than 32 characters.

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

1 Edit `iprint.ini` in a text editor.

Linux	`/var/opt/novell/iprint/htdocs/`
NetWare	`sys:\apache2\htdocs\ippdocs\`

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 a Print Manager are running. The Installed Printer Name Profile affects all printers on a Print Manager.

Installing User Printers

To install an iPrint Printer and the associated printer driver users, you must have Administrator or equivalent permissions on Windows NT/2000/XP or Power User permissions on Windows NT/2000. User Printers let you control what permissions are required to install a printer. To implement User Printers, edit the `iprint.ini` file and change the value for AllowUserPrinters = *entry* to one of the following:

Table 4-8 *User Printer Settings*

Value	Description
0	Follow Windows standards and only let users with sufficient permissions to install the printer to the desktop. This allows ALL USERS to see and use this printer. This is considered a global or Workstation Printer.
1	If the current user does not have permissions to add a Workstation Printer (option 0), automatically add the printer so that only the current user can install, view, modify, or delete this printer. This is considered a private or User Printer.
2	Only add User Printers. All users (including Administrator or power user) that add a printer can install, view, modify, or delete the printer they installed. All printers are private or User Printers.
3	Only add Workstation Printers. No permissions required. All users have rights to install, view, modify, or delete iPrint printers even if the Windows workstation has been locked down. Non-iPrint printers are not affected.

For example, three workers—Albert, Juan, and Carla—share the same computer during the day. Albert prints to an accounting printer, Juan prints to a plotter, and Carla prints to a printer in the CEO's office. The administrator set AllowUserPrinters = 2. Each worker can install the printer they need but cannot see printers installed by the other users.

4.7 Uninstalling the Novell iPrint Client

Uninstalling the Novell iPrint Client is dependent on your workstation's operating system.

4.7.1 Removing the Linux iPrint Client

You can remove the Linux iPrint Client RPM from a terminal prompt. Depending on the Client installed use one of the following commands.

```
rpm -e novell-iprint-xclient-sh-version.i586.rpm

rpm -e novell-iprint-xclient-sl-version.i586.rpm
```

NOTE: When you uninstall the Linux iPrint Client, all iPrint printers remain installed on the workstation and the user can still print to the printers until the printer is deleted on the workstation.

4.7.2 Removing the Macintosh iPrint Client

 1 Open the MacOSX folder.

 2 Click *Application*, then double-click *Unistall iPrint.pkg*

 3 Follow the prompts to uninstall the client.

The uninstall program runs an installation script. Even though the last screen says the installation is successful, the uinstall was successful.

NOTE: When you uninstall the Macintosh iPrint Client, all iPrint printers remain installed on the workstation and the user can still print to the printers until the printer is deleted on the workstation.

4.7.3 Removing the Windows iPrint Client

To remove the Novell iPrint Client, use *Remove Programs* option in the Windows Control Panel.

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

4.8 Printing from LPR Print Systems to iPrint

The implementation of LPR printing in UNIX systems and other systems varies greatly. Typically, UNIX or LPR users know how to set up LPR Printing (BSD-style printing) on their system. In order to complete the configuration, users need to know the *LPR Host* and the *LPR Printer/Queue* information, which is the Printer Agent name, provided in Novell iManager. The iPrint Client is not required to print using LPR.

To set up an iPrint printer to accept LPR print jobs, you need to enable LPR/LPD printing for the printer. See "Configuring LPR Printers" on page 75 for more information

4.9 What's Next

- Chapter 5, "Customizing iPrint," on page 51: With your print system set up and the client distributed to the workstation, you can focus on how your users can browse to and install iPrint Printers using their Web browser.
- Chapter 6, "Managing Your Print System," on page 57: Helps you monitor and maintain your print system.

Customizing iPrint

5

This section describes how to customize iPrint for your company by using the iPrint Map Designer and modifying the HTML pages and iPrint Client interface.

5.1 Setting Up Location-Based Printing

When setting up location-based printing, each Print Manager creates an iPrint Printer List that users can access by entering http://*server_DNS_or_IP_address*/ipp. You can make installing printers even easier by creating customized Web pages that link the iPrint Printer lists together or use the iPrint Map designer to create a map showing the location of printers.

5.1.1 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 as background images that can be used to drag-and-drop printers onto actual locations. These maps are then published on a Web server so users can install printers that are closest to their location.

Prerequisites

❑ Windows 9x/NT/2000/XP operating system

❑ Microsoft Internet Explorer 5.5 or later

❑ Novell® iPrint Client installed on the workstation

After the map is created, you must use the iPrint Map Designer to modify or update it. Changes to a map file that are 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.

Creating a Map for Printing

Before creating the map, ensure the following:

❑ `ippsrvr.nlm` must be loaded.

NOTE: If you run the map tool using HTTP and `ippsrvr.nlm` is not loaded, then you will receive a 503 Service not available error. To resolve this, you need to enable iPrint on one of the printers so that `ippsrvr.nlm` automatically loads.

❑ All of your background images (maps) are copied to the server:

NetWare Server: `sys:\apache2\htdocs\ippdocs\images\maps`

Linux Server: `/var/opt/novell/iprint/htdocs/images/maps`

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

❑ All of your custom printer icons are copied to the server

NetWare Server: `sys:\apache2\htdocs\ippdocs\images\printers.`

Linux Server: `/var/opt/novell/iprint/htdocs/images/printers`

1 To start iPrint Map Designer, open http://*server_address*:/maptool.htm in Internet Explorer, where *server_address* is the server's IP address or DNS name of the server where the iPrint Manager is running.

If you want to save the map to this server, you need to be authenticated to the server.

On NetWare you can also start the iPrint Map Designer using a mapped drive. Open `sys:\apache2\htdocs\ippdocs\maptool.htm` in Microsoft Internet Explorer.

2 Select a map from the *Background* drop-down list.

3 (Optional) Add a printer to the map.

   3a From the *Printer Icon* field, select the type of printer and icon size you want.

   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 the printer to the desired location on the map.

   3c Next to the *Printer List* field, click the *Browse* icon and enter the IP address or DNS name of the server where the Print 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 entering the text you want to display when a user moves the mouse over the Printer icon.

   3e (Optional) In the *Printer Caption* field, enter the information to display, using Enter to parse the information onto multiple lines.

   3f (Optional) From 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* and save the map.

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

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

Adding Printers from Different Print Managers

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

If you need to add or modify printers from a previously used Print Manager, click a Printer icon from that manager and the Printer List is 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 \ippdocs directory and its subdirectories to the Web server in order for your maps and iPrint to work properly. You can link to your maps from your company's internal Web page or send the URL out to your users.

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.

Table 5-1 *Keyboard Shortcuts*

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

5.1.2 Creating Customized Printer Lists

Printer lists let users 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 generates an iPrint Printer List for each Print Manager. To create a custom list, you must use an HTML editor and create links to the different generated lists or create a Web page using the printer's IPP URL. This URL is displayed when you enable IPP for a printer.

To view a printer's URL:

1 From Novell iManager, click *iPrint > Manage Printer*.

2 Browse to and select the printer you want.

3 Click Client *Support* > *iPrint Support*.

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

5.2 Customizing the iPrint HTML Interface

You can edit any of the HTML files provided or you can create your own to customize iPrint for your environment. The HTML files are installed in the `sys:\apache2\htdocs\ippdocs` directory. For information on the HTML interface, see Appendix C, "Configuring the iPrint HTML Interface," on page 89.

Some examples of ways to present printers to users are located in the `sys:\apache2\htdocs\ippdocs\examples` directory:

- Example 1 shows a fully graphical interface for locating and installing printers using standard HTML. This type of approach can also be created using the iPrint Map Designer. For more information, see "Creating Location-Based Maps with iPrint Map Designer" on page 51.

  Using your Web browser, view this example from
  `sys:\apache2\htdocs\ippdocs\examples\example1\innerweb.htm`

- Example 2 shows a lower maintenance approach for locating and installing printers using standard HTML.

  Using your Web browser, view this example from
  `sys:\apache2\htdocs\ippdocs\examples\example2\innerweb.htm`

5.3 Installing Printer as Default on Windows

When installing a printer on a Windows workstation from the iPrint Printer List Web Page, users can choose to set the printer they are installing as the default printer by selecting the Set Printer as Default check box in the Printer Is Not Installed dialog. When the this option is selected, the printer is installed and set as the default printer. When it is not selected, the printer is installed and no change is made to the default printer.

This feature has three settings:

- Set Printer as Default is automatically selected
- Set Printer as Default is not selected
- Hide the Set Printer as Default setting.

To modify this feature:

1 Edit setdef.htm, located in one of the following directories:

NetWare Server: `sys:\apache2\htdocs\ippdocs`

Linux Server: `/var/opt/novell/iprint/htdocs`

2 Modify the var defTypeGbl = setting to one of the following:

Setting	Description
DEF_TYPE_OPTION_YES	Displays the Set as Default check box, which is selected.
DEF_TYPE_OPTION_NO	Displays the Set as Default check box, which is not selected.
DEF_TYPE_OPTION_NONE	Hides the Set as Default check box, which is not selected.

3 Save the file.

When the file is saved, the change is effective immediately.

Managing Your Print System

6

- Using Web-Based Enterprise Management (page 57)
- Understanding and Managing Certificates (page 57)
- Managing the Print Manager (page 58)
- Managing Printers (page 69)
- Managing the Driver Store (page 76)
- Configuring LDAP (page 77)

To manage your print system, use Novell® iManager. The iPrint plug-in for Novell iManager works with workstations running Mozilla-based browsers or Internet Explorer 5.5 with Service Pack 2 or later. For a review of supported browsers, see Appendix A, "Supported Browsers for iPrint," on page 85.

NOTE: If you are running Windows XP Service Pack 2 or other browsers with pop-up blocking, you might encounter problems with pop-up windows. To manage iPrint in iManager and to install printers with iPrint clients, turn off pop-up blocking or allow the URL.

- To manage iPrint running on Linux, you must access iManager installed on a Linux server. To manage iPrint on NetWare, you must access iManager installed on a NetWare server.
- You cannot administer iPrint from iManager installed on a Windows, Solaris, or HP-UX server platform.
- You cannot administer iPrint from a Macintosh computer.

For more information iManager, see the *Novell iManager 2.5 Administration Guide*.

6.1 Using Web-Based Enterprise Management

This release includes a Web-Based Enterprise Management (WBEM) system for the core iPrint components. You can use the iPrint WBEM command `iprntman` in scripts or at a console prompt to create, modify, and manage Print Managers, Printers, Driver Stores, and print jobs. For more information on using `iprntman`, see the MAN page or go to `/usr/share/doc/packages/novell-iprint-iprntman/readme`.

6.2 Understanding and Managing Certificates

When managing print managers, driver stores, and printers that are running on a different server than the server running iManager, you might receive a certificate error, meaning that the host name or IP address of the server where you are managing the print object does not match any of the certificates on the server where iManager is running. If you receive the error, do the following:

1 Click the *iPrint Certificate Manager* link in the error.

2 Review the certificate information for accuracy.

3 Select the correct action.

   In order to manage the print object, you must accept the certificate.

4 Click OK.

You might need to scroll down in order to click OK to accept the certificate.

5 Restart your task.

Certificates are accepted on a per user basis.

You can remove accepted certificates by deleting `/var/opt/novell/imanager/npis/portal/modules/iprintx/certstore`. Deleting this file removes all accepted certificates.

6.3 Managing the Print Manager

Although the default settings lets users print without additional configuration, you probably want to modify some of those settings so that you can manage your printing resources most effectively.

- Understanding the Print Manager Database (page 58)
- Understanding the Print Manager Configuration File (page 58)
- Changing the eDirectory Server Assignment (page 59)
- Using the Print Manager Health Monitor (page 59)
- Setting Up Printer Pooling (page 61)
- Using Print Auditing (page 62)
- Creating Additional Print Managers (page 67)
- Loading or Unloading the Print Manager (page 68)

NOTE: Printer driver profiles do not exist on print managers running on Linux.

6.3.1 Understanding the Print Manager Database

The Print 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 also every night at midnight. The last four backups are saved. When a new backup file is created, the oldest of the four stored files is deleted. If the oldest backup file is older than four days, then the Print Manager creates a new backup.

If the database fails to load through normal mechanisms, you can use the backup database by doing 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.

6.3.2 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*`.ipsmd.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/ipsmd-template.conf`.

The `ipsmd.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.

6.3.3 Changing the eDirectory Server Assignment

If you need to change the eDirectory™ server assignment for the Print Manager or Driver Store, edit the DSServer1= entry in the corresponding configuration file, `print_manager_name_ipsmd.conf` or `idsd.conf`, 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; DSServer2 and DSServer3 are considered secondary servers.

6.3.4 Using the Print Manager Health Monitor

The Print Manager Health Monitor provides you with a global view of your print system. The Health Monitor shows you the current status of the Print Manager and the associated printers and lets you configure error threshold, customize some print system settings, and generate reports about your system.

Understanding the Print Manager Health Monitor

The Print 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 Print Manager was last started.

A quick look at these statistics helps 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 the 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 Print Manager Health Monitor

The Health Monitor can be accessed by entering the following URL:

http://*server_address*/psmstatus

where *server_address* is the IP address or DNS name of the server where the Print 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 Print Manager Health Monitor main page, click *Advanced Print 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 specifies the location and filename 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.

The following are some common reports that you might want to generate.

Printer Configurations. To determine what features are enabled for each Printer Agent, select the following:

- SSL Required for iPrint Access
- Auditing Enabled

Printer's Current State. To view the states of the printers and any printer console messages, select the following:

- Printer Agent Status
- Printer Agent State Reasons
- Printer Console

Printing Statistics. To view statistics about your print system, select the following:

- Jobs Printed Ever
- Jobs Printed Since Load
- Jobs Printed Today
- Average Job Size Since Load
- Average Job Size Today

Gateway Information. To view information about a gateway associated with the Printer Agents, including the gateway's IP address, select the following:

- Gateway Load String

Printer Driver Associations. To view the printer drivers associated with each printer, select the following:

- Windows 95/98 Driver
- Windows NT4 Driver
- Windows 2000/XP Driver
- Win XP Driver
- Linux Driver

Printer and Printer Agent Associations. Because a Printer Agent can service more than one printer, use the Associated NDS® Printers option to view the number of printers serviced by each Printer Agent.

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 Print 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 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 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 Print Manager Health Monitor main page, click the printer you want, 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 and delete the text in the message box (Step 2).

6.3.5 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 Print Manager can redirect that print job to an idle printer in the pool. The Print 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 is sent to the second printer. If the second printer completes the print job and the first printer is still busy, the next print job is sent to the third printer to distribute print jobs throughout the pool. Printer pools are specific to the Print Manager, and a printer pool cannot span multiple Print 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 Print Manager in a pool.

When you create a printer pool, the pool information resides in the Print Manager and can be viewed only using Novell iManager. Unlike the printers and the Print 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 Print Manager uses the method described in the example 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*, then *OK*.

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

6.3.6 Using Print Auditing

To use print auditing, you first need to enable auditing for *each* printer you want to audit using Novell iManager or the Print Manager Health Monitor.

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.

Figure 6-1   *Auditing Management Page*
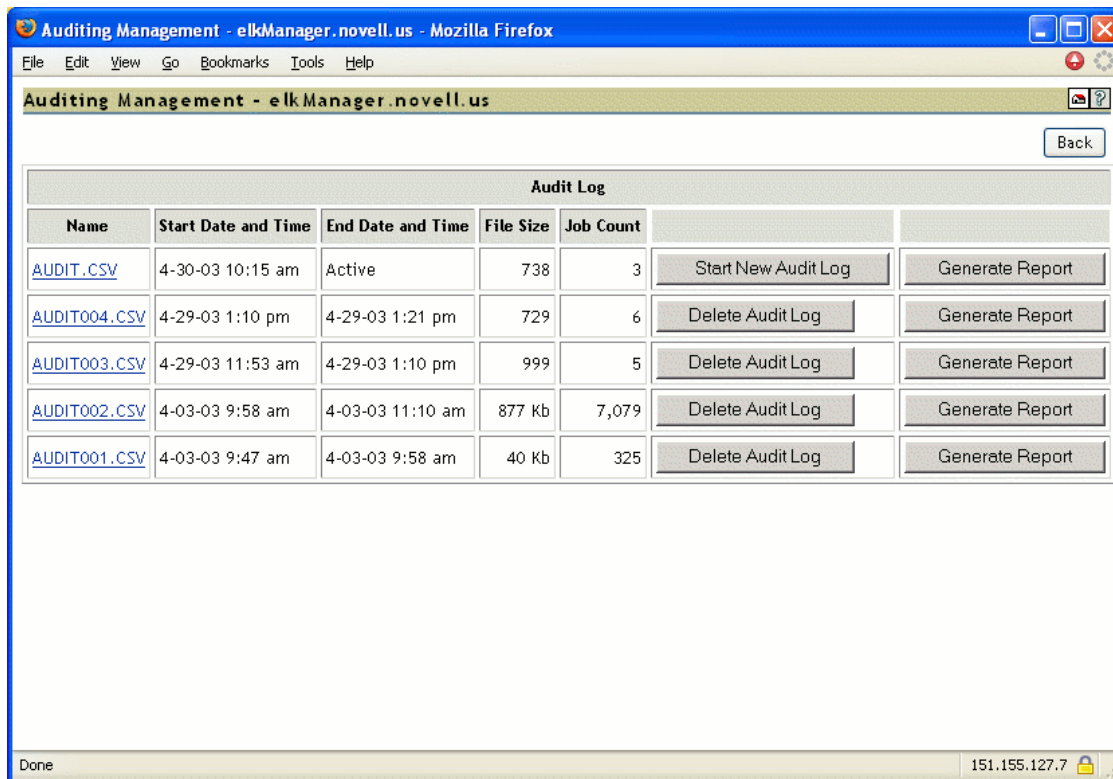
From the Auditing Management page you can complete the following tasks:

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 To access the Print Manager Health Monitor, open http://*server_IP_address*/psmstatus in a Web browser.

For example: http://printing.my_company.com/psmstatus

2 Click *Configuration Options*.

3 Check the *Enable Auditing* check box.

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 Print 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.
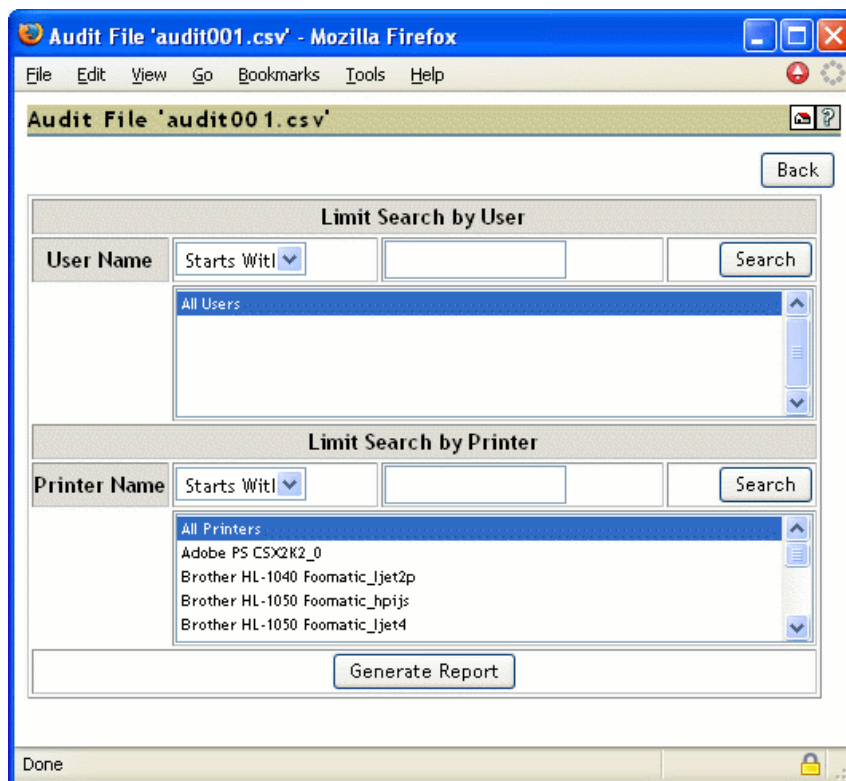
3 Click *Generate Report* to view the report with the specified filters.

Only 250 print jobs are listed at a time. To view more print jobs in the report, click *Next*.
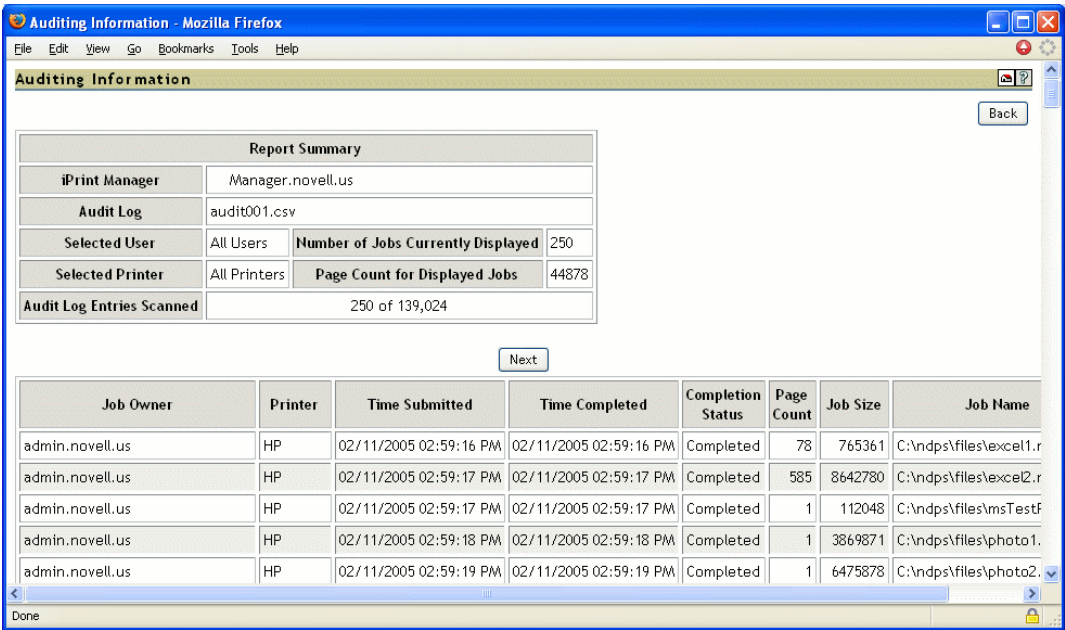
The following table explains the fields that are displayed under the Report Summary.

Table 6-1   *Report Summary Description*

Field	Description
iPrint Manger	The Print 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.

Table 6-2   *Report Description*

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.

Field	Description
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	The 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 Auditing Management page. When audit logs are no longer needed, you can manually delete them. To automatically save and create new logs, see .

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.

Configuring Automatic Log Rotation

Audit Log Rotation automatically creates a new log when certain criteria are met.

1 In the Print Manager Health Monitor, click *Advanced iPrint Manager Information > Auditing > Configure Log Rotation*.

2 Select *Enable Audit Log Rotation*.

3 Specify the number of logs to keep.

When the number of logs to keep is reached, the oldest log is deleted when the next log is created. When setting this number, take in to account the criteria you are using to create new log files. If you want a year's worth of logs, set the number of audit logs to keep to 12 and then select the By Date and By Month options.

4 Specify the criteria used for log rotation.

By Job Count: Specify the maximum number of print jobs that an audit log can contain before a new log is created.

By Date: Select when you want the audit logs to rotate.

- Day: The log rotates each day at midnight.
- Week: The log rotates each Sunday. If the Print Manager is not loaded on Sunday, the log is rotated the next time the Print Manager starts.
- Month: The log rotates at midnight on the first day of the month.

NOTE: If you select Day or Week, ensure that the Maximum Number of Audit Logs to Keep entry is large enough so that logs are not rotated before you need the data.

By File Size: Specify the maximum file size (in KB) before a new log is created. The maximum file size is 4 GB.

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 Print 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.

6.3.7 Creating Additional Print Managers

A Print Manager must be created and running before you can create and associate Printers. A Print Manager provides a platform for Printer Agents, a logical representation of printers that reside on the server. You can manually load Print Managers on a server.

Use the following guidelines to determine where and when to place a Print Manager.

- Only one Print Manager can be running on a server.
- Whenever possible, place the Print Manager and the printers it controls on the same LAN segment for optimal performance.
- Consider distributing your printers across multiple Print 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 Print Manager object is to reside.

1 In iManager click *iPrint > Create Print Manager*.

2 Fill in the fields.

Click the 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 Print Manager properties, click *Manage Print Manager*, then select the Manager you want to modify.

For information about Access Control roles, see .

6.3.8 Loading or Unloading the Print Manager

You can start and stop the Print Manager in 2 ways:

Using the Command Line

The Print Manager uses init scripts for starting and stopping the daemon. To load the Print Manager from the command line, enter

```
/etc/init.d/novell-ipsmd start
```

The following init script actions are also valid:

Table 6-3 *Print Manager Actions*

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 Print 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 Print Manager.

4 Click *OK*.

6.3.9 Moving Print Managers to Another Linux Server

Sometimes it is necessary to move the Print Manager from one server to another. If you assigned a DNS name to the Print Manager, you should update the DNS entry with the new IP Address that the Manager is running on when the move is completed; otherwise, you cannot manage the Print Manager and users are cannot print.

WARNING: The URLs generated by iPrint are based on the server's IP address or a DNS name. If you move a Print Manager to a server that has a different IP address or a different DNS name than is currently being used, a new URL is generated for each printer. Users must delete and reinstall their iPrint printers. If you are using NDPS® Printers, printing is not affected.

1 In iManager, click *iPrint > Manage Print Manager*.

2 Browse to and select the Print Manager you want to move, then click *OK*.

3 Click *Shutdown*.

> **WARNING:** All printing associated with this Print Manager ceases and waiting print jobs is lost.

4 On the Manager Control page, click *Move*.

5 Complete the fields:

- **Target Server:** Enter the DNS name or IP address for the server that is to host the Print Manager.

  For example, 192.0.34.166 or print.my_company.com

- **eDir Server:** Specify an eDirectory server that you want the Print Manager to communicate with.

- **iPrint Service Name:** Displays the IP address or DNS name for the iPrint service.

> **NOTE:** If you are using a DNS name, you must be update your DNS host tables to reflect the move.

6 Click *OK* to move the print manager.

The print manager is moved and loaded on the destination server.

6.4 Managing Printers

Although the default settings lets users print without additional configuration, you might want to modify some of those settings so that you can manage your printing resources most effectively.

- Creating Additional Printers (page 69)
- Managing Printer Agents (page 70)
- Section 6.4.4, "Enabling iPrint Direct," on page 71
- Managing Print Jobs (page 71)
- Modifying the Printer's Gateway Load Commands (page 74)

6.4.1 Creating Additional Printers

Before creating additional printers, ensure you meet the following prerequisites:

❑ Have the Supervisor right for the destination container where its associated Printer object is to reside.

❑ Be designated as a manager of the Print Manager that controls this printer.

❑ Have a Driver Store running.

❑ Have an Print Manager running.

To create additional printers

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 Driver Store and then associate the drivers to the printer by clicking *Manage Printer > Drivers*.

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

Because the list of printer drivers included with this product is limited, you can add drivers to the Driver Store. See "Updating Printer Drivers" on page 77 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.

6.4.2 Managing Printer Agents

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.

6.4.3 Using Printer Driver Profiles

Printer driver profiles let you set the driver defaults for a Windows printer driver. Then you associate the printer driver profile to a printer so that when the printer is installed, it is configured with the settings you want.

For example, in a law office you might want the default paper size to be legal size. This means every time the printer and corresponding driver are installed on a workstation, the paper size is set to legal size.

Creating, Modifying, and Deleting a Printer Driver Profile

When creating a printer driver profile, you work directly with a platform-specific printer driver; therefore, you must create and modify profiles from the same operating-specific platform as the printer driver. For example, to create or modify a Windows 2000 printer driver profile, you must access iManager and complete the task from a Windows 2000 workstation.

1 In Novell iManager, click *iPrint > Printer Driver Profile*.

2 Browse to and select the Print Manager where you want the driver profile stored and made available to the printers on that manager.

3 Select an operation, and then click *OK*.

- **Create Printer Driver Profile:** Creates a new printer driver profile.

- **Delete Printer Driver Profile:** Deletes an existing driver profile.

- **Modify Printer Driver Profile:** Changes the settings of an existing printer driver profile.

After creating a printer driver profile, you need to associate it with a printer.

Associating a Printer Driver Profile with a Printer

1 In Novell iManager, click *iPrint > Manage Printer*.

2 Browse to and select the printer you want to modify.

3 Click *Drivers > printer_driver_operating_system*.

4 Select the printer driver from the list of *Available Drivers*.

5 Select the profile you want associated with this printer from the list of *Available Driver Profiles for Selected Driver*.

> If you do not want a profile associated, select None.

6 Click *OK* to save the changes.

6.4.4 Enabling iPrint Direct

Users of an iPrint Direct-enabled printer send print jobs directly to the printer instead of sending the job to the Print Manager first. The job is sent to the printer in LPR or raw 9100 format, depending on the setting gateway autoload command for the printer. Although this greatly reduces server communication, the ability to audit print jobs is lost. iPrint Direct still supports driver updates, and printer information is gathered directly from the printer using SNMP.

1 In Novell iManager, click *iPrint > Manage Printer*.

2 Browse to and select the printer you want to enable iPrint Direct printing for.

3 Click *Client Support > iPrint Direct*.

4 Select the *Enable iPrint Direct Printing* option.

6.4.5 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 is 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 ahead of 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.

6.4.6 Using Printer Banner Pages

Banner pages create a cover sheet for each print job that a printer produces. Using the Printer Banner Configuration task, you can customize the information printed on a banner to your needs. If you select eDirectory information such as the eDir e-mail address, the Print Manager needs rights to read these attributes. Follow the steps in "Using eDirectory Attributes with Custom Banners" on page 73.

Configure a Custom Banner

1 In Novell iManager, click *iPrint > Printer Banner Configuration*.

2 Browse to and select the Print Manager you want.

3 Select an operation and click *OK*.

- **Create Custom Banner:** Lets you create a new custom banner.
- **Delete Custom Banner:** Lets you delete an existing banner.
- **Modify Custom Banner:** Lets you edit the settings of an existing custom banner profile.

4 Complete the fields with the information you want. If you create multiple banners, you should use banner names that are descriptive enough to identify them when you associate the banner to a printer.

5 Select the *Banner Text Location*.

This is where the banner option information appears on the banner page. The banner information is grouped together and then placed as a chunk either starting at the top of the page, centered on the page, or starting at the bottom of the page.

6 Select the banner options you want and the font size you want to use to display the information.

7 Click *OK* to save the changes.

Associate a Custom Banner to a Printer

1 In Novell iManager, click *iPrint > Printer Banner Configuration*.

2 Browse to and select the Print Manager where the printer agents are hosted.

3 Select *Assign Custom Banner*, then click *OK*.

4 From the *Custom Banner* drop-down list, select the banner you want.

5 Check the check box next to each printer you want this banner associated with.

When you check the check box, the banner name appears in the *Assign Banner* field. To associate a different banner, select the desired banner from the *Custom Banner* drop-down list, and select the check box for the printer you want to change. If you do not want a banner to be used, select *None*.

You can also assign banners when using the Manage Printer task.

1 In Novell iManager, click *iPrint > Manage Printer*.

2 Browse to and select the printer you want to modify.

3 Click *Configuration > Custom Banners*.

4 In *Available Banners*, select the banner that you want this printer to use.

5 Click *OK* to save the changes.

If you select eDirectory information such as the eDir e-mail address, the Print Manager needs rights to read these attributes. Follow the steps in .

Using eDirectory Attributes with Custom Banners

Custom banners lets you select the information you want displayed on the banner page. Some of the banner options are information contained in eDirectory. In order for the Print Manager to obtain this information, you must modify the trustee rights and give the Print Manager read rights to these properties. Because rights flow down the eDirectory tree, you can assign the trustee right at a container level above the users, or to the tree.

1 In iManager, click *Rights > Modify Trustee Rights*.

2 Select the container or tree where you want to modify the rights.

3 Click *Add Trustee*, then select the Print Manager object.

4 Click *Add Property*, then select the *Show All Properties in Schema* check box.

5 Select the following attributes:

Banner Option	eDirectory Property
eDir mail stop	mailstop
eDir e-mail address	EMail Address
eDir location	L
eDir telephone number	Telephone Number
eDir user first name	Given Name
eDir user full name	Full Name
eDir user last name	Surname

6 Click *OK*.

7 Ensure that at least the Read right is selected.

8 Click *Done*.

6.4.7 Modifying the Printer's Gateway Load Commands

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 autoload command.

The following tables describe the gateway load commands and parameters that can be used.

Gateway Load Parameters	Description
iprintgw	The gateway executable that is loaded for this Printer Agent.
PA=	The printer agent name that is to be loaded.
PORT=*port_value port_specific_parameters*	The type of port to be used. Supported values are LPR, RAW and NULL. Most printers use LPR. Some printers use RAW, which defaults to PORT 9100. Other ports can be used by appending :port_number to the HOSTNAME or HOSTADDRESS. For example, 129.63.47.78:9101. The port value is followed by port-specific parameters. See the Port-Specific Parameters in the table below
HOST= or HOSTADDRESS=	The hostname (DNS Name) or IP address of the printer.
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.
SETCOMMUNITYSTRING=	The community string to be used for SNMP Get and GetNext requests.
NOSNMP	No SNMP traffic is generated by the gateway, and printer status information such as the information displayed on the printer, is not gathered.

Port-Specific Parameters	Description
JPOLL=	Sets the job polling interval (in seconds).

Port-Specific Parameters	Description
SPOLL=	The base SNMP polling interval (in seconds). Only select SNMP information, such as the printer's alert table and display console, is gathered at this polling interval.
	Other information that changes less frequently, such as the level of paper in a paper tray or the amount of toner, is gathered about every four polling intervals; additional printer information, such as 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.

6.4.8 Configuring LPR Printers

UNIX, Macintosh, and other LPR clients can print to iPrint printers using LPR.

IMPORTANT: In order for LPR to work, the printer agent name cannot contain spaces. If it does, you need to recreate the printer agent or select a different printer.

1 In Novell iManager, click *iPrint > Manage Printer*.

2 Browse to and select the printer you want to enable LPR printing for.

3 Click *Client Support > LPR Support*.

4 Check the *Enable LPR/LPD Client Support* check box.

The *LPR Host* and *LPR Printer/Queue* fields display information required when setting up printing for Macintosh, UNIX, or other LPR clients.

LPR Host: The server name where the Print Manager is running.

LPR Printer/Queue: The same as the printer agent's name. The printer agent name cannot contain any spaces; otherwise, LPR does not work properly.

5 (Optional) Enable the following options:

Filter All LF to CRLF and Append FF to Jobs: Selecting this check box changes bytes in the LPR data stream of all incoming LPR print jobs from Line Feeds to Carriage Returns with Line Feeds and appends a Form Feed to the end of the print job. Typically, these changes are made at the LPR client; however, if you are sure of your users' configurations, you can implement this option.

Address Ranges: Add an address range only if you want to restrict access to this printer to LPR clients within the address range. When the list is empty, all addresses are allowed to print (default).

6 Click *Apply* or *OK* to update the printer settings.

7 From the UNIX, Macintosh or other LPR client, set up a printer using the LPR Host and LPR Printer/Queue information displayed in Step 4.

6.5 Managing the Driver Store

Although the default settings lets users print without additional configuration, you might want to modify some settings so that you can manage your printing resources most effectively.

6.5.1 Creating Additional Driver Stores

Although you can create additional Driver Stores, you only need one for your iPrint system because the Print Manager saves the downloaded drivers files to disk. If the Print Manager does not have a requested driver, it copies the driver from the Driver Store and then saves it to disk. This process is relatively quick, even for the first user to request a printer driver. We recommend that you have only one Driver Store to avoid tracking which Driver Store contains what printer drivers. Periodically, the Print Manager checks the Driver Store for updated printer drivers.

If you configure multiple Driver Stores that run on the same server, they all point to the same repository of printer drivers. This can be useful because each Driver Store has its own eDirectory object, and you can distribute the objects in your eDirectory tree.

To create a driver store:

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

2 Fill in the fields.

   Click the help for explanations about the fields.

3 Click *OK*.

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

6.5.2 Understanding the Driver Store Configuration File

When you create a Driver Store, a configuration file is created in `/etc/opt/novell/iprint`. The file name is idsd.conf. Each time you create a Driver Store object using iManager and assign it to the same server, a separate entry is added to `idsd.conf`. Although you can have several 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.conf`.

6.5.3 Changing the eDirectory Server Assignment

If you need to change the eDirectory™ server assignment for the Print Manager or Driver Store, edit the DSServer1= entry in the corresponding configuration file, *print_manager_name*_ipsmd.conf or idsd.conf, 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; DSServer2 and DSServer3 are considered secondary servers.

6.5.4 Loading or Unloading the Driver Store

You can start and stop the Print Manager in two ways:

-
-

Using the Command Line

The Driver Store uses init scripts for starting and stopping the daemon. To load the Driver Store from the command line, enter

`/etc/init.d/novell-idsd start`

The following init script actions are also valid:

Table 6-4 *Driver Store Actions*

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 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*.

6.5.5 Updating Printer Drivers

To update printer drivers, follow the steps listed in .

6.6 Configuring LDAP

iPrint uses LDAP to verify rights to perform various iPrint operations, including authenticating users for printing and performing management tasks such as uploading drivers. During the installation of the iPrint software, iPrint attempts to identify the top-most container of the eDirectory tree and sets

the basedn to this container for the AuthLDAPURL entry in `/etc/opt/novell/iprint/httpd/conf/ipp_ssl.conf`. For most installations this is adequate because users are often distributed across containers. However, if you have mutliple peer containers at the top of your eDirectory tree, you might need to modify the basedn entry so the LDAP search begins at the root of the eDirectory tree.

Here is the syntax for the AuthLDAPURL entry:

```
ldap://host:port/basedn?attribute?scope?filter
```

Here is an example of a typical AuthLDAPURL entry where the basedn is set to a container called DivisionA:

```
"ldaps://server1.my_company.com/C=DivisionA???(objectClass=user)"
```

Here is an example of a modified AuthLDAPURL entry where the basedn is removed so the search begins at the root of the eDirectory tree:

```
"ldaps://server1.my_company.com/???(objectClass=user)"
```

TIP: For fault tolerance, you can specify additional LDAP servers in the event an LDAP server is unavailable. Additional servers use the attributes prescribed on the first server. An AuthLDAPURL entry specifying multiple LDAP servers appears like "ldaps://server1.my_company.com/C=DivisionA???(objectClass=user) ldaps://server2.my_company.com"

Setting Up a Secure Printing Environment

7

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

- Setting Access Control for Your Print System (page 79) lets you assign users to a User, Operator, or Manager role to control printers, Print Managers, and Driver Stores.
- Using SSL/TLS for Secure Printing (page 83) requires users to authenticate before installing and printing to a printer.

NOTE: Currently, access control and printing using SSL or TLS is only supported with the Windows iPrint Client.

7.1 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 has to your printing resources. Currently, access control for printers is only supported on the Windows iPrint Client.

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, and an operator of a printer is automatically designated a user of that printer. 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 describe 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 79
- "Setting Access Control for the Print Manager" on page 81
- "Setting Access Control for the Driver Store" on page 82

7.1.1 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.

NOTE: Currently, access control is only supported with the Windows iPrint Client.

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

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 user should have.

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

Table 7-1   *Printer Access Control Roles*

Role	Description
Manager	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, so they can perform all tasks assigned to those operator roles. Typical manager functions include the following: • 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	Printer management tasks performed by the operator include the following: • 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 Operators cannot create, modify, or delete eDirectory objects or perform other eDirectory administrative functions.

Role	Description
User	Tasks performed by users include the following:

> • Submitting print jobs
>
> • Managing print jobs they own (users cannot copy, move, reorder, or remove jobs they do not own)
>
> 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.

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 user should 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*.

7.1.2 Setting Access Control for the Print Manager

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

Print Manager Access Control Role

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

Table 7-2 *Print Manager Access Control Role*

Role	Description
Manager	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:

> • Creating Printer Agents and Print 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 Print Managers

To make Manager assignments for your Print Manager objects

1 In Novell iManager, click *iPrint > Manage Print Manager*.

2 Browse to and select the Print 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*.

7.1.3 Setting Access Control for the Driver Store

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

Driver Store Access Control Roles

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

Table 7-3 *Driver Store Access Control Roles*

Role	Description
Manager	Tasks performed exclusively by the 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: • 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, Print 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 Driver Store

To make Manager assignments for your Driver Store objects:

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*.

7.2 Using SSL/TLS 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. Between the client and the Print Manager, the print data is encrypted and all print communication uses port 443. Without secure printing, the printer is available to anyone inside the firewall on the network and the print data is not encrypted. Secure printing works in conjunction with the security level set for the printer.

If you are using the latest iPrint Client and server software, iPrint attempts to use TLS for printing on port 631 automatically. TLS printing supports encrypted and non-encrypted print communication through port 631. Whether or not encryption is used is dependent on the secure printing setting of the Printer Agent. If secure printing is enabled on a printer, the user is required to authenticate, and the print data is encrypted. If secure printing is not enabled, the user does not authenticate and the print data is not encrypted.

Beginning with Open Enterprise Server and the iPrint Client v4.05, both nonsecure and secure printing URLs use ipp://.

Prior to Open Enterprise Server, printer URLs were based on http:// and https://. When a nonsecure printer using an http:// URL changes to a secure printer, the URL changes to https:// or ipp:// and users must delete the printer and reinstall the new secure printer.

7.2.1 Enabling SSL/TLS

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 Select the *Enable Secure Printing* check box.

5 Click *Apply* or *OK* to update the printer settings.

7.2.2 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 users, passwords are saved on a per-user basis.

7.2.3 Configuring TLS Printing with Proxies

To use a proxy with secure printing:

1 Create a file in `/etc/opt/novell/httpd/conf.d` named `mod_proxy.conf`

2 Add the following lines to the file

```
LoadModule proxy_module  /usr/lib/apache2-worker/mod_proxy.so
LoadModule proxy_connect_module  /usr/lib/apache2-worker/
mod_proxy_connect.so
LoadModule proxy_http_module  /usr/lib/apache2-worker/
mod_proxy_http.so

# This is the port the proxy will listen on
```

```
Listen 8080

ProxyRequests On
ProxyVia On
<Proxy *>
    Order deny,allow
    Allow from All
</Proxy>
AllowCONNECT 631 443
```

3 Set the proxy port on the client to 8080.

4 Restart Apache.

To set up a Squid proxy:

IMPORTANT: Implementing the following changes lets your users print using TLS; however, there are security risks involved. Contact your Security Administrator before completing these steps.

---

1 Rename the Squid configuration file using the following command:

```
mv /etc/squid/squid.conf /etc/squid/squid.conf.orig
```

2 Create a new /etc/squid/squid.conf file.

3 Add the following lines to the file:

```
http_port 3128

acl all src 0.0.0.0/0.0.0.0
acl manager proto cache_object
acl localhost src 127.0.0.1/255.255.255.255
acl to_localhost dst 127.0.0.0/8
acl SSL_ports port 80 443 563 631
acl Safe_ports port 80          # http
acl Safe_ports port 21          # ftp
acl Safe_ports port 443 563 631 # https, snews
acl Safe_ports port 70          # gopher
acl Safe_ports port 210         # wais
acl Safe_ports port 1025-65535  # unregistered ports
acl Safe_ports port 280         # http-mgmt
acl Safe_ports port 488         # gss-http
acl Safe_ports port 591         # filemaker
acl Safe_ports port 777         # multiling http
acl CONNECT method CONNECT

acl ipp_access port 631

http_access allow all
miss_access allow all
http_access allow CONNECT ipp_access
http_reply_access allow all
icp_access allow all
miss_access allow all
```

4 Set the proxy port on the client to 3128.

5 Restart Squid.

Supported Browsers for iPrint

A

The section provides information on which Web browsers are supported for different iPrint tasks and operations.

- iPrint Client Supported Browsers (page 85)
- Supported Browsers with the iPrint Plug-in and Novell iManager (page 85)
- Supported Browsers for the iPrint Map Designer (page 86)

A.1 iPrint Client Supported Browsers

The following table indicates which browsers are supported with the various iPrint Client platforms:

Table A-1 *iPrint Client Supported Browsers*

iPrint Client Platform	Supported Browsers
Linux	• Mozilla-based browsers such as Epiphany, Firefox, or Galeon
Macintosh	• Safari 1.2
	• Firefox
Windows	• Microsoft Internet Explorer 5.0 or later
	• Netscape* 4.76 (iPrint is not supported on Netscape 6)
	• Mozilla-based Web browsers such as Epiphany, Firefox, or Galeon

A.2 Supported Browsers with the iPrint Plug-in and Novell iManager

The iPrint plug-in with Novell iManager supports the following browsers:

- Internet Explorer 5.5 with Service Pack 2 or later
- Mozilla-based browsers

NOTE: If you are running Windows XP Service Pack 2 or other browsers with pop-up blocking, you might encounter problems with pop-up windows. To manage iPrint in iManager and to install printers with iPrint clients, turn off pop-up blocking or allow the URL.

When uploading printer drivers and PPD files, you should use the following browsers for the operations indicated:

A.2.1 Uploading PPD Files Using iManager

Table A-2 *Supported Browsers for Uploading PPD Files*

iPrint Client platform	Supported Browser	Upload PPD file to Driver Store on Linux	Upload PPD file to Broker on NetWare
Linux	Mozilla-based browsers	Supported Upload is supported using only the *Add from System* button.	Not Supported
Windows	Internet Explorer 5.5 or later	Supported	Supported

A.2.2 Uploading Windows Printer Drivers Using iManager

Table A-3 *Supported Browsers for Uploading Windows Printer Drivers*

Client	Supported Browser	Upload Windows Printer Driver to Driver Store on Linux	Upload Windows Printer Driver to Broker on NetWare
Linux	Mozilla-based browsers	Not supported	Not supported
Windows	Internet Explorer 5.5	Supported	Supported

A.3 Supported Browsers for the iPrint Map Designer

The iPrint Map Designer works with Microsoft* Internet Explorer 5.5 or later only.

iPrint Client Version Release List

B

This section details the major releases of the iPrint Client.

Table B-1 *iPrint Client Releases*

iPrint Client Version	Release
1.00	NetWare® 6
1.00a	NetWare 6 Internationalized
1.01	NetWare 6 Support Pack 1
1.03	NetWare 6 Support Pack 2
1.05	Web Release
1.06	Web Release
1.10	NetWare 6 Support Pack 3
2.01	NetWare 6.5
2.02	NetWare 6 Support Pack 4 NetWare 6.5 Support Pack 1
3.00	Novell® Nterprise™ Linux Services Support
3.05	Novell Nterprise™ Linux Services Support Pack 1
3.09	NetWare 6 Support Pack 5 NetWare 6.5 Support Pack 2
4.05	Open Enterprise Server NetWare 6.5 Support Pack 3
4.11	Open Enterprise Server Support Pack 1 NetWare 6.5 Support Pack 4
4.12	Web Release
4.15	Open Enterprise Server Support Pack 2 NetWare 6.5 Support Pack 5
4.16	Web Release

Configuring the iPrint HTML Interface

<div style="text-align: right; font-size: large;">C</div>

This section discusses the HTML parameters and operations used in the iPrint interface for Internet Explorer 5.5 Web browsers. 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 help you customize the HTML interface:

C.1 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 94) and op-client-version-info (page 94). 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.

C.1.1 Internet Explorer Browser Customization

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>
```

C.2 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 91)
- debug (page 91)
- error-type (page 91)
- file-path-name (page 91)
- job-list (page 92)
- job-list-options (page 92)
- persistence (page 92)
- printer-url (page 92)
- result-type (page 93)

C.2.1 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

C.2.2 debug

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

Example:

PARAM NAME=debug VALUE=true

C.2.3 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

C.2.4 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*

C.2.5 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

C.2.6 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:

Example:

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

C.2.7 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

C.2.8 printer-url

Indicates which printer the operation should be directed to.

Example:

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

C.2.9 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

C.2.10 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 is the one reloaded with the indicated URL.

Example:

PARAM NAME=target-frame VALUE=*FrameName*

C.3 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 94)
- op-client-is-printer-installed (page 94)
- op-client-version-info (page 94)
- op-job-cancel (page 94)
- op-job-get-info (page 95)
- op-job-hold (page 95)
- op-job-release-hold (page 95)
- op-printer-get-info (page 95)

C.3.1 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

C.3.2 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

C.3.3 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

C.3.4 op-job-cancel

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

C.3.5 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

C.3.6 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.

C.3.7 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

C.3.8 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

C.3.9 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

C.3.10 op-printer-install

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

C.3.11 op-printer-list-all-jobs

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

C.3.12 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

C.3.13 op-printer-purge-jobs

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

C.3.14 op-printer-remove

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

C.3.15 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

C.3.16 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

C.3.17 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

Documentation Updates

D

This *iPrint Administration Guide* has been updated with the following information on the following dates:

- Section D.1, "March 31, 2006," on page 99
- Section D.2, "December 23, 2005 (Open Enterprise Server SP2)," on page 99
- Section D.3, "September 29, 2005," on page 100
- Section D.4, "August 19, 2005 (Open Enterprise Server SP1)," on page 100

D.1 March 31, 2006

Location	Change
"Password Management Enhancements" on page 41	Added section.
"Controlling iPrint Settings through the Windows Registry" on page 43	Added section.

D.2 December 23, 2005 (Open Enterprise Server SP2)

Location	Change
Entire guide.	Page design reformatted to comply with revised Novell® documentation standards.
Section 4.5, "Using iprntcmd on Linux and Macintosh," on page 37 and "Using iprntcmd.exe to Install iPrint Printers" on page 45	Beginning with the iPrint Client v4.15, the printcmd on Linux was renamed to iprntcmd. The options for iprintcmd for both Linux and Windows have been updated.
"Linux: Controlling Access to the Workstation Print System" on page 28	Changed `novell-iprint-xclient-sl-version.i586.rpm` attribute to indicate that it is the default client installed from the iPrint Printer List Web page.
"Linux: Distributing the iPrint Client" on page 29	Updated the information about creating a symbolic link.
Appendix B, "iPrint Client Version Release List," on page 87	Added section.
Section 4.7.2, "Removing the Macintosh iPrint Client," on page 49	Updated uninstall steps.

D.3 September 29, 2005

Location	Change
Section 5.3, "Installing Printer as Default on Windows," on page 54	Section was added.
Section 7.2, "Using SSL/TLS for Secure Printing," on page 83	Section was updated.

D.4 August 19, 2005 (Open Enterprise Server SP1)

Location	Change
Chapter 2, "What's New," on page 19	This chapter was added.
"Macintosh: iPrint Client Requirements" on page 31	Added Firefox browser to the list.
"Configuring Automatic Log Rotation" on page 66	This section was added.
"Modifying the Printer's Gateway Load Commands" on page 74	Command options were updated, including Port= and NOSNMP.
Section 6.4.4, "Enabling iPrint Direct," on page 71	This section was added.
Section 6.4.3, "Using Printer Driver Profiles," on page 70	This section was added.
Section 7.2.3, "Configuring TLS Printing with Proxies," on page 83	This section was added.
Chapter 4, "Setting Up iPrint on Client Workstations," on page 27	Because secure printing is now supported on all clients, notes stating that secure printing is not supported for Linux and Macintosh clients were removed.
"Printing to Secure printers" on page 28	This section was added.
"Additional Configuration for Secure Printers with GNOME" on page 30	This section was added.