

iPrint for Linux Administration Guide

Novell® Open Enterprise Server

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About This Guide

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

- ♦ Chapter 1, “Overview,” on page 13
- ♦ Chapter 2, “What’s New,” on page 21
- ♦ Chapter 3, “Installing and Setting Up iPrint on Your Server,” on page 23
- ♦ Chapter 4, “Installing and Setting Up iPrint on Client Workstations,” on page 31
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- ♦ Appendix A, “Supported Browsers for iPrint,” on page 121
- ♦ Appendix B, “iPrint Commands and Utilities,” on page 123
- ♦ Appendix C, “iPrint Client Version Release List,” on page 143
- ♦ Appendix D, “Configuring the iPrint HTML Interface,” on page 145
- ♦ Appendix E, “Disabling iPrint,” on page 155

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 the *Novell OES iPrint Administration Guide for Linux*, visit the [Novell Open Enterprise Server documentation Web site \(http://www.novell.com/documentation/oes2/\)](http://www.novell.com/documentation/oes2/).

Additional Documentation

Novell iPrint also is available for NetWare®. For more information, see the *OES 2 SP1: 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.

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

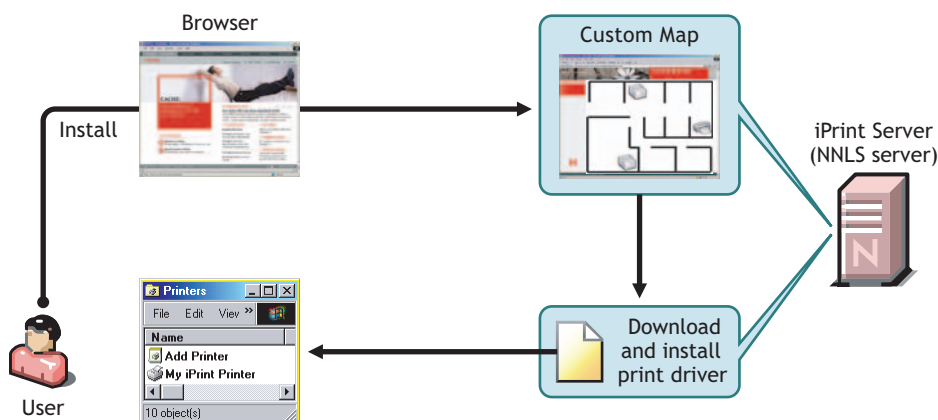
iPrint helps your

- ♦ [Section 1.1, “What Is iPrint?,” on page 13](#)
- ♦ [Section 1.2, “iPrint Component Overview,” on page 14](#)
- ♦ [Section 1.3, “Understanding Port Usage,” on page 17](#)
- ♦ [Section 1.4, “iPrint Solutions,” on page 18](#)
- ♦ [Section 1.5, “What’s Next,” on page 19](#)

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 Web \(http://www.pwg.org/ipp/index.html\)](http://www.pwg.org/ipp/index.html) site.

iPrint Benefits

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

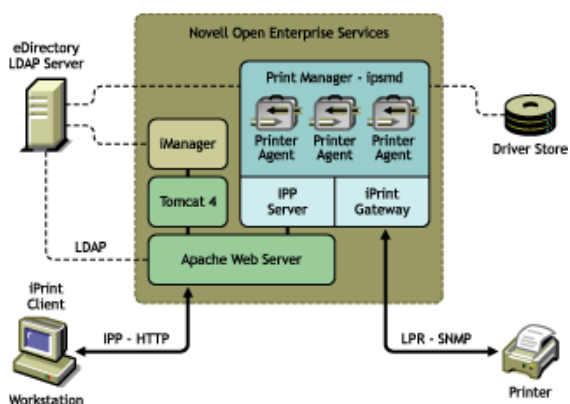
- ♦ Printer driver download and installation
- ♦ Location-based printing
- ♦ Browser-enabled printer installation interface
- ♦ Customizable user interface
- ♦ Secure information transfer

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.

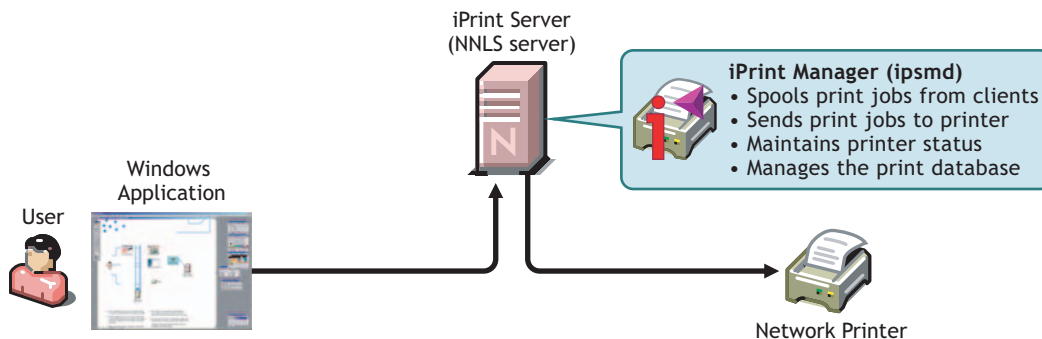
Figure 1-2 iPrint Component Overview



1.2.1 Print Manager

The Print Manager is an object in the eDirectory tree as well as software that runs on an OES 2 Linux 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; however, 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. When the printer is installed later, the Print Manager checks to see if there is an updated printer driver in the Driver Store. If an updated driver exists, the Print Manager caches it and subsequent printer installs use the newer drivers. However, printers already installed on workstations with the older driver are not updated. For additional information on Driver Store, see [Technical Information Document \(TID](#)

#3281477) on the Novell Support Site (http://www.novell.com/support/php/search.do?cmd=displayKC&docType=kc&externalId=3281477&sliceId=2&docTypeID=DT_TID_1_1&dialogID=72061104&stateId=1%200%2010986128).

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 42](#).
- ♦ **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 31](#).

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. For more information, see [Section A.1, “iPrint Client Supported Browsers,” on page 121](#).

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 35](#).

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” on page 45
 - ♦ “Using the Novell iCapture LPT Port Redirector Utility” on page 47
 - ♦ “Setting Up iPrint on Terminal Servers” on page 46
 - ♦ “Managing Passwords for Remote iPrint Servers” on page 45
- ♦ **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 by Using DOS Commands,” on page 47](#).

For more information, including client requirements, see [Section 4.1.3, “Windows: iPrint Client,” on page 36](#).

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 non-secure 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, “Installing and Setting Up iPrint on Your Server,” on page 23](#) and [Chapter 9, “Managing Your Print System,” on page 89](#). For more information about Novell iManager, see the *Novell iManager 2.7.2 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. Because 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

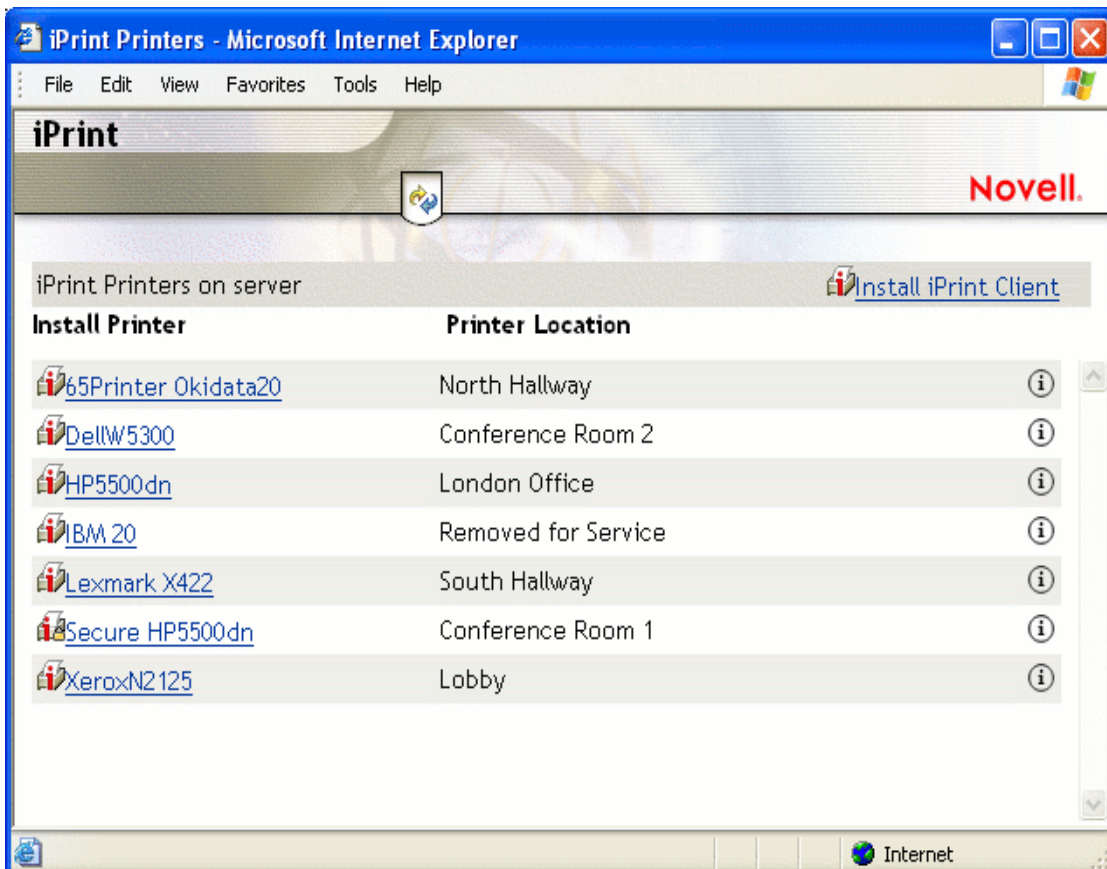
The following examples demonstrate how iPrint solves current business needs.

- ♦ [Section 1.4.1, “Printing Across the Internet,” on page 18](#)
- ♦ [Section 1.4.2, “Printing While at a Remote Office,” on page 19](#)
- ♦ [Section 1.4.3, “Printing Instead of Faxing,” on page 19](#)

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, "Installing and Setting Up iPrint on Your Server," on page 23:** Helps you install the server software and configure your print system.
- ♦ **Chapter 4, "Installing and Setting Up iPrint on Client Workstations," on page 31:** Helps you deploy the iPrint Client to workstations and explains the features of the client.
- ♦ **Chapter 7, "Customizing iPrint," on page 63:** 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

2

iPrint in Open Enterprise Server 2 SP1 Linux includes the following features that were not in the initial release of OES 2:

- ♦ **Migrating from NetWare to Linux** using the Migration Tool.
- ♦ **Support for NSS file system** provides the ability to host iPrint configuration on an NSS volume.
- ♦ **Support for Clustering on NSS file system** to make iPrint highly available on a OES2 SP1 Linux NSS Cluster setup.

Installing and Setting Up iPrint on Your Server

3

- [Section 3.1, “Installing iPrint Software,” on page 23](#)
- [Section 3.2, “Setting Up iPrint,” on page 24](#)
- [Section 3.3, “Upgrading to Novell iPrint,” on page 26](#)
- [Section 3.4, “Setting up iPrint on an NSS File System,” on page 28](#)
- [Section 3.5, “What’s Next,” on page 29](#)

3.1 Installing iPrint Software

If iPrint was selected during the Novell® Open Enterprise Server (OES) installation, the iPrint software components were automatically installed on the server and you can skip to [Section 3.2, “Setting Up iPrint,” on page 24](#). While the CUPS software is installed, CUPS is disabled to avoid port 631 conflicts.

For information on uninstalling iPrint or Open Enterprise Server, see “[Disabling OES 2 SP1 Linux Services](#)” in the *OES2 SP1: Linux Installation Guide*.

iPrint installs the following RPMs:

Table 3-1 *iPrint RPM list*

RPM Name	Description
<code>novell-iprint-server</code>	Contains the core print manager, driver store, and other iPrint components.
<code>novell-iprint-client</code>	Contains the iPrint Clients for Linux, Macintosh, and Windows.
<code>novell-iprint-iprntman</code>	Contains Web-Based Enterprise Management (WBEM) system for managing core iPrint components.
<code>novell-iprint-management</code>	Contains the Novell iManager plug-in.
<code>novell-iprint-migration</code>	Contains the migration tools to migrate iPrint running on NetWare or OES 1 to OES 2.

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 121.

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

For more information, see the *Novell iManager 2.7.2 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 24.
- ❑ **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 99.

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

For more information, see [Section 9.4.1, “Creating Additional Printers,”](#) on page 103.

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 110 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 by 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, “Installing and Setting Up iPrint on Client Workstations,” on page 31](#). 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 121](#).

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 `iprintcmd` command. See [Section 4.5, “Using iprintcmd on Linux and Macintosh,” on page 42](#) 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 99](#) 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 24](#) 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 selected.

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.

IMPORTANT: In a cluster-setup, do not select the *Start Print Manager after Creation* check box.

- 4 Click *OK*.

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 25](#) 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:

- ♦ [Section 3.3.1, “Upgrading from iPrint on OES 1 to OES 2,” on page 26](#)
- ♦ [Section 3.3.2, “Upgrading an OES 1 Cluster Running iPrint to OES 2,” on page 26](#)
- ♦ [Section 3.3.3, “Updating an Existing OES 2 Linux iPrint Systems,” on page 27](#)
- ♦ [Section 3.3.4, “Migrating iPrint on NetWare to OES Linux,” on page 27](#)
- ♦ [Section 3.3.5, “Migrating an Existing NDPS Print System to iPrint on OES Linux,” on page 27](#)
- ♦ [Section 3.3.6, “Replacing an Existing Windows Print System with iPrint,” on page 27](#)

3.3.1 Upgrading from iPrint on OES 1 to OES 2

To upgrade from iPrint on OES 1 to OES 2, follow the steps in “[Upgrading to OES 2 SP1 Linux](#)” in the *OES2 SP1: Linux Installation Guide*.

3.3.2 Upgrading an OES 1 Cluster Running iPrint to OES 2

To upgrade from iPrint on OES 1 to OES 2, follow the steps in “[Upgrading to OES 2 SP1 Linux](#)” in the *OES2 SP1: Linux Installation Guide*.

3.3.3 Updating an Existing OES 2 Linux iPrint Systems

To upgrade iPrint on an existing OES 2 Linux server, apply the latest Support Pack patches. For more information, see “[Updating an OES 2 SP1 Linux Server](#)” in the *OES2 SP1: Linux Installation Guide*.

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`.

3.3.4 Migrating iPrint on NetWare to OES Linux

See [Chapter 6, “Migrating iPrint from NetWare to OES 2 SP1 Linux,”](#) on page 61 for more information.

3.3.5 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 2 SP1: 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 2 SP1: iPrint Administration Guide for NetWare*.

3. Distribute the iPrint Client.

For more information, see “[Windows: Distributing the iPrint Client](#)” in the *OES 2 SP1: 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 2 SP1: 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.

3.3.6 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 Setting up iPrint on an NSS File System

With OES 2 SP1, it is now possible to host iPrint configuration and data on an NSS Volume. In a standard setup, it's recommended to leave iPrint hosted on the default Linux POSIX file system, unless you have a specific reason to host iPrint on an NSS file system.

If you are looking for clustering ability, we recommend making iPrint highly available on an OES2 SP1 Linux NSS Cluster setup. This can be done with the aid of `iprint_nss_relocate` script. This script during execution does the following:

- ♦ Moves iPrint configuration data to the NSS Volume.
- ♦ Creates symbolic links on the Linux POSIX file system that point to the location on NSS.
- ♦ Disables the `/etc/passwd` iPrint user.
- ♦ Creates `iprint` LUM user and `iprintgrp` LUM group.

These users along with apache's `www` group and `wwwrun` user are given rights to parts of the NSS file system, where the iPrint configuration and data are hosted.

3.4.1 Executing the Script

To run the `iprint_nss_relocate` script, execute the following steps:

- 1 Go to folder `/opt/novell/iprint/bin` on your OES 2 SP1 server.
- 2 Run the following command at the prompt:

```
./iprint_nss_relocate -a <admin dn> -p <password> -n <NSS path> [-l cluster]
```

For example: `iprint_nss_relocate -a cn=admin,o=novell -p novell -n /media/nss/NSSVOL1 -l cluster`

Refer to the following table for details on the options.

Option	Value
-a	Admin DN in LDAP format
-p	Password for the Admin user
-n	NSS Path with no trailing slash
IMPORTANT: While specifying the path ensure that there are no trailing slashes with the NSS path. For example: The path should be specified as <code>/media/nss/NSSVOL1</code> and not as <code>/media/nss/NSSVOL1/</code> .	

Option	Value
-l cluster (optional)	Use this parameter only when you want to achieve clustering on NSS file systems. For more details on clustering, see Section 8.4, “Clustering on NSS File System,” on page 71.
	IMPORTANT: Use <code>cluster</code> keyword with the <code>-l</code> option. Do not replace the cluster keyword with a cluster object name.

3.5 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, “Installing and Setting Up iPrint on Client Workstations,”](#) on page 31: Helps you deploy the iPrint Client to workstations and explains the features of the iPrint Client.
- ♦ [Chapter 7, “Customizing iPrint,”](#) on page 63: 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.

Installing and Setting Up iPrint on Client Workstations

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

- ♦ [Section 4.1, “Installing the iPrint Client,” on page 31](#)
- ♦ [Section 4.2, “Installing Printers,” on page 40](#)
- ♦ [Section 4.3, “Updating the iPrint Client,” on page 42](#)
- ♦ [Section 4.4, “Managing Print Jobs from the Client,” on page 42](#)
- ♦ [Section 4.5, “Using iprntcmd on Linux and Macintosh,” on page 42](#)
- ♦ [Section 4.6, “Windows Client: Using Additional Features,” on page 44](#)
- ♦ [Section 4.7, “Using iPrint Client Management,” on page 52](#)
- ♦ [Section 4.8, “Uninstalling the Novell iPrint Client,” on page 57](#)
- ♦ [Section 4.9, “Printing from LPR Print Systems to iPrint,” on page 58](#)
- ♦ [Section 4.10, “What’s Next,” on page 58](#)

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.

- ♦ [“Linux: iPrint Client” on page 31](#)
- ♦ [“Macintosh: iPrint Client” on page 35](#)
- ♦ [“Windows: iPrint Client” on page 36](#)

The clients are located in the following directories:

OES Linux	<code>/var/opt/novell/iprint/htdocs/clients/<i>platform</i></code>
OES NetWare	<code>sys:\apache2\htdocs\ippdocs\clients\platform</code>

4.1.1 Linux: iPrint Client

- ♦ [“Linux: iPrint Client Requirements” on page 32](#)
- ♦ [“Linux: Controlling Access to the Workstation Print System” on page 32](#)
- ♦ [“Linux: Distributing the iPrint Client” on page 33](#)

Linux: iPrint Client Requirements

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

- ❑ SUSE Linux Enterprise Desktop (SLED) 10 SP2 (both 32 and 64-bit).

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

- ❑ A Mozilla-based browser such as Epiphany, Firefox 2.x.x^{*}, 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
<code>novell-iprint-xclient-sh-version.i586.rpm</code>	Security high. Limited access to the print system.	This client requires workstation users to be defined with <code>lppasswd</code> to install, delete, or administer printers on the workstation. When performing one of these print operations, the user is challenged for a password.
<code>novell-iprint-xclient-sl-version.i586.rpm</code>	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” on page 33
- ♦ “Deliver the Client Using Distribution Software” on page 34

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.

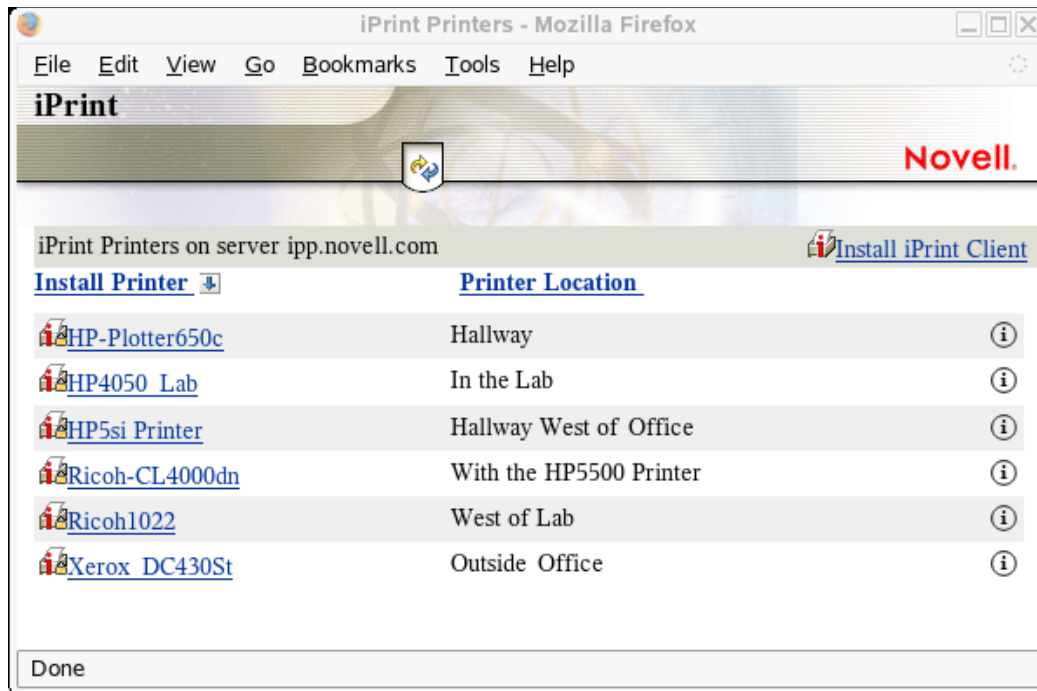
To reach the Web page:

- 1 Specify 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 you are 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 it. See “[Additional Configuration for Secure Printers with GNOME](#)” on page 34.

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 non-secure 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 [Step 4](#) 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” on page 35](#)
- ♦ [“Macintosh: Distributing the iPrint Client” on page 35](#)

Macintosh: iPrint Client Requirements

- ☐ Mac OS* 10.4 or later
- ☐ Compatible Web browser. See [Section A.1, “iPrint Client Supported Browsers,” on page 121](#) for more information.

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” on page 35](#)
- ♦ [“Deliver the Client Using Distribution Software” on page 36](#)

Macintosh: Install the Client from iPrint Printer List Web Page

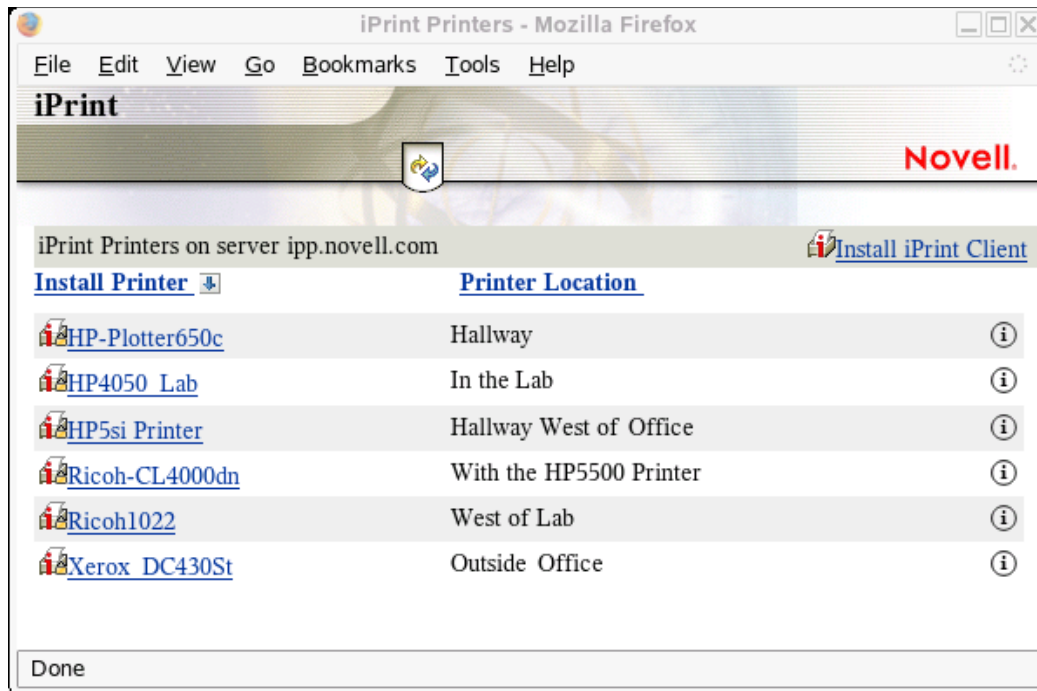
You can download and install the iPrint Client from the iPrint Printer List Web page that resides on the server where the Print Manager is loaded. To reach the page

- 1 Specify 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`



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.

2 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.

(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) (<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

Beginning with this release

- “Windows: iPrint Client 5.x Requirements” on page 37
- “Windows: iPrint Client 4.x Requirements” on page 37

- ♦ “Windows: iPrint Client Support Matrix” on page 38
- ♦ “Windows: iPrint Client Installation Files” on page 38

Windows: iPrint Client 5.x Requirements

- ❑ Windows 2003, XP, 2008 (32-bit only), Vista Enterprise SP1, Business SP1, or Ultimate SP1 (x86 or x64)

NOTE: While any user can install the iPrint Client on a Vista Machine, to install printers, and upload drivers, your Web browser must be running as Administrator on Vista, unless the iPrint URL is part of the Trusted sitelist. Refer `-w` or `--trustedwebsiteforInternetExplorer` option in Table 4-6 on page 49 for details.

- ❑ Web browser with JavaScript* enabled *and*

- ♦ Microsoft Internet Explorer 7 or later

NOTE: You must run your browser as Administrator on Vista, unless the URL is part of the Trusted sitelist. Refer `-w` or `--trustedwebsiteforInternetExplorer` option in Table 4-6 on page 49 for details.

- ❑ Ensure to apply these hotfixes from Microsoft*, if your Vista is not upgraded to SP1 or later:

- ♦ 941542 (<http://support.microsoft.com/kb/941542/en-us>)
- ♦ 932206 (<http://support.microsoft.com/kb/932206/en-us>)

Contact Microsoft Customer Support Services for more information.

Limitations of the iPrint Client 5.x

The iPrint Client v5.x for Windows Vista does not support the following features:

- ♦ Printer driver profiles
- ♦ User printers
- ♦ DOS box printing, supported only for 32-bit and not 64-bit Vista.
- ♦ iCapture, supported only for 32-bit and not 64-bit Vista.

Windows: iPrint Client 4.x Requirements

- ❑ Windows 2000

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

NOTE: Windows 95/98 are not tested platforms for latest 4.x clients, but it is known to work on these platforms.

- ❑ Web browser with JavaScript* enabled *and*

- ♦ Microsoft Internet Explorer 5.5 or later
- ♦ Mozilla Firefox 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 Support Matrix

Table 4-2 *Windows iPrint Client Support Matrix*

Client Version	Windows 2000	Windows XP/2003	Windows Vista/2008
4.36 or later	Yes	Yes	No
5.04	No	No	Yes
5.12 or later	No	Yes	Yes

NOTE: No new fixes for Windows XP/2003 on 4.x version and it is encouraged to move to 5.x on these platforms.

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 4-3 *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 <code>setupipp.exe</code> . For a list of the command line parameters that you can use with <code>setupipp.exe</code> , enter <code>setupipp.exe /h</code> 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 9x users must reboot their workstations after the client is installed, you should use <code>nipp-sr.exe</code> 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.

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

4.1.4 Windows: Distributing the iPrint Client

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

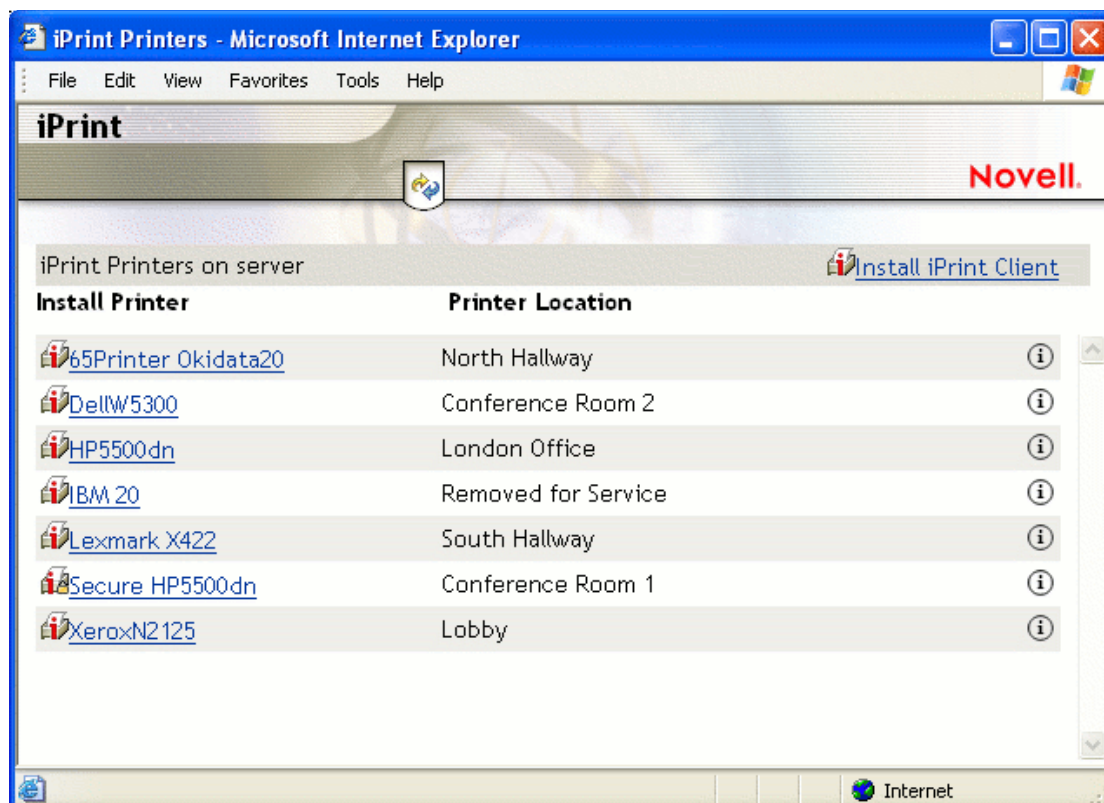
- ♦ “Windows: Install the Client from iPrint Printer List Web Page” on page 39
- ♦ “Deliver the Client Using Distribution Software” on page 40

NOTE: Windows 9x users must restart their workstations. After the iPrint Client is installed, Windows NT/2000/XP users need not 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 ZENworks, you can use any of the iPrint Clients described in **“Windows: iPrint Client Installation Files” on page 38** 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 41**
- **“Creating Location-Based Printing Web Pages” on page 41**

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 by 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 66](#).

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 63](#).

4.2.3 Removing iPrint Printers

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

- ♦ [“Linux: Deleting iPrint Printers” on page 42](#)
- ♦ [“Macintosh: Deleting iPrint Printers” on page 42](#)
- ♦ [“Windows: Deleting iPrint Printers” on page 42](#)

Linux: Deleting iPrint Printers

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

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. If you want iPrint to automatically update the clients, see [“Updating the iPrint Client Automatically” on page 50](#), 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 notification area 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 4-4 Parameters used with iprntcmd

Parameters	Description
-a or --addprinter <i>printer_uri</i>	Installs the specified printer.
-d or --delprinter <i>printer_uri</i>	Removes the specified printer.
-g or --getdefault	Displays the default printer installed on the workstation.

Parameters	Description
-h or --help	Displays help for the command.
-j or --listjobs <i>printer_uri</i>	Lists the print jobs for the specified printer that are on the server in a pending or printing state.
-l or --listprinters	Lists printers installed on the workstation.
-L or --listprintersonserver <i>psm-hostname</i> or <i>psm-address</i>	Lists iPrint printers on the specified Print Manager where <i>psm-hostname</i> or <i>psm-address</i> can be a DNS name or IP address.
-p or --printfile <i>printer-uri filepath</i>	Sends a printer-ready file to the specified iPrint printer.
-P or --ppdlist	Lists the PPDs installed on this workstation.
-s or --setdefault <i>printer_uri</i>	Sets the specified printer as the default.
-t or --testpage <i>printer_uri</i>	Prints a test page to the specified printer.
-u or --uploadids <i>ids_uri ppd with/without a wildcard</i>	Uploads the specified PPD files to the indicated driver store where <i>ids_uri</i> is the IP Address or DNS name for the driver store, and <i>ppd</i> is the directory path and filename to the PPD files. You can use a wildcard in the PPD filename.
-U or --uploadbroker <i>rms_uri rms_name ppd with/without a wildcard</i>	Uploads the specified PPD files to the indicated Broker where <i>rms_uri</i> is the IP Address or DNS name for the Broker's associated print manager, <i>rms_name</i> is the username with rights to add drivers to the broker, and <i>ppd</i> is the directory path and filename to the PPD files. You can use a wildcard in the PPD filename.
-v or --version <i>server_uri</i>	Displays the server platform and version information where <i>server_uri</i> is the URI for the server.

Syntax

`iprntcmd options 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 non-secure printing

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

Use `ipp://` instead of `http://` or `https://`.

For more examples, use the `man iprntcmd` command on your server cosole.

4.6 Windows Client: Using Additional Features

- ♦ [Section 4.6.1, “Updating the iPrint Client,” on page 44](#)
- ♦ [Section 4.6.2, “Using the iPrint Client Tray Icon,” on page 44](#)
- ♦ [Section 4.6.3, “Configuring the iPrint Client Settings,” on page 44](#)
- ♦ [Section 4.6.4, “Implementing iPrint by Using DOS Commands,” on page 47](#)
- ♦ [Section 4.6.5, “Using iPrint with NetIdentity,” on page 50](#)
- ♦ [Section 4.6.6, “Manage Global Actions through Iprint.ini,” on page 50](#)

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 50](#) for more information.

4.6.2 Using the iPrint Client Tray Icon

On Windows workstations, the iPrint Client adds an icon to the notification area. 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 notification area until the next reboot. To make the icon reappear in your notification area, 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 Notification Area Icon” on page 45](#).

4.6.3 Configuring the iPrint Client Settings

- ♦ [“Using a Proxy Server” on page 45](#)
- ♦ [“Managing Passwords for Remote iPrint Servers” on page 45](#)
- ♦ [“Managing iPrint’s Notification Area Icon” on page 45](#)
- ♦ [“Managing Print Job Notifications” on page 45](#)
- ♦ [“Setting Up iPrint on Terminal Servers” on page 46](#)
- ♦ [“Using the Novell iCapture LPT Port Redirector Utility” on page 47](#)

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, select the check box and then specify the URL for the proxy server.
To disable using a proxy server, deselect the check box.
- 3 Click *OK*.

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 Notification Area Icon

The iPrint icon in the notification area 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 44](#).

Managing Print Job Notifications

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

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 notification area, you do not receive notifications. To restart the applet, see [Using the iPrint Client Tray Icon](#).

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” on page 46](#)
- ♦ [“Configuring iPrint for Terminal Server Clients” on page 46](#)

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.

Configuring iPrint for Terminal Server Clients

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

- ♦ **Install user printers only:** User printers can 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 supercede all other port assignments. iPrint port assignments remain in effect, even after the workstation restarts, until you end the capture.

4.6.4 Implementing iPrint by 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 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 `icaputure.exe` command.

Table 4-5 Parameters used with *icapture.exe*

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

Syntax

```
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 4-6 Parameters used with *iprntcmd*

Parameters	Description
-a or --addprinter <i>options printer_uri</i>	<p>Installs the specified printer. You can replace <i>options</i> with any or all of the following:</p> <ul style="list-style-type: none"> ♦ 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. <p>NOTE: These options are available on the Windows Client only.</p>
-d or --delprinter <i>printer_uri</i>	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 <i>printer_uri</i>	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 <i>psm-hostname</i> or <i>psm-address</i>	Lists iPrint printers on the specified Print Manager where <i>psm-hostname</i> or <i>psm-address</i> can be a DNS name or IP address.
-p or --printfile <i>printer-uri file path</i>	Sends a printer-ready file to the specified iPrint printer.
-P or --ppdlist	Lists the PPDs installed on this workstation.
-s or --setdefault <i>printer_uri</i>	Sets the specified printer as the default.
-t or --testpage <i>printer_uri</i>	Prints a test page to the specified printer.
-v or --version <i>server_uri server_user</i>	Displays the server platform and version information where <i>server_uri</i> is the URI for the server and <i>server_user</i> is a valid user for the server.
-w or --trustedwebsiteforInternetExplorer <i>printer_installation_page_uri</i>	<p>Adds the specified URI of the printer installation page to the trusted site list for Internet Explorer.</p> <p>The Trusted site list feature allow users to view and add the printers directly from the printer IPP site or printer map page, without having to run the Internet Explorer browser with administrator privileges on Windows Vista.</p> <p>For example, <i>http://printing.my_company.com/ipp</i>.</p>

Syntax

```
iprintcmd parameters
```

Example

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

```
iprintcmd -a -s 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 Client32™ 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 50
- ♦ “Creating a Short Printer Name Profile” on page 51
- ♦ “Installing User Printers” on page 52

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 that 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	<code>/var/opt/novell/iprint/htdocs/</code>
NetWare	<code>sys:\apache2\htdocs\ippdocs\</code>

- 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 9x users must restart their machines. Windows NT/2000/XP users need not reboot immediately, 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	<code>/var/opt/novell/iprint/htdocs/</code>
NetWare	<code>sys:\apache2\htdocs\ippdocs\</code>

- 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 4-7 *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 Using iPrint Client Management

iPrint Client Management (iCM) includes functionality similar to the Remote Printer Management feature included in Novell Distributed Print Service™, which lets you designate printers to be installed on a workstation when a user logs in to the workstation using the Novell Client. Previously, this functionality was only available with NDPS printers, but now it is available for iPrint printers. iCM also lets you control the iPrint Client configuration, making it easier to configure the iPrint Client without visiting each workstation. When the user logs in to the workstation using the Novell Client, the iPrint Client settings you designate are configured on the user's workstation.

iCM is available for Windows 2000/XP/2003 workstations, and requires the following:

- ♦ iPrint iManager plug-in for Linux or the iPrint iManager plug-in for NetWare dated May 2006 or later
- ♦ Novell Client™ 4.91 for Windows 2000/XP/2003 or later

- ♦ Novell iPrint Client v4.17 or later (install after the Novell Client)
- ♦ `iprint.ini`
- ♦ eDirectory schema update from NetWare 6.5 Support Pack 6 or later.

All of the above components are included in the NetWare 6.5 Support Pack 6 except the Novell Client 4.91 for Windows 2000/XP, which is available from the [Novell Support Web site \(http://support.novell.com/produpdate/patchlist.html#client\)](http://support.novell.com/produpdate/patchlist.html#client).

The iPrint iManager plug-ins also work with Mobile iManager. Mobile iManager is available at [Novell Downloads \(http://download.novell.com/Download?buildid=w4WNnPmq6R8~\)](http://download.novell.com/Download?buildid=w4WNnPmq6R8~).

NOTE: You can install the iPrint iManager plug-in for NetWare NPM on Mobile iManager or iManager running on NetWare. You can install the iPrint iManager plug-in for Linux on Mobile iManager or iManager running on Linux or NetWare. Depending on your iManager configuration, you might see two *iPrint* roles. The *iPrint* role is for iPrint running NetWare tasks, and, the *iPrint (Linux)* role is for iPrint running Linux tasks.

With iCM, you manage a set of attributes on a given eDirectory tree regardless of whether the printers are hosted on an Open Enterprise Server NetWare or a Linux server, because iCM is configured and managed through eDirectory objects.

Use the following information to install and configure iCM:

- ♦ [Section 4.7.1, “Understanding the Schema Update,” on page 53](#)
- ♦ [Section 4.7.2, “Deploying iPrint Client Management,” on page 54](#)
- ♦ [Section 4.7.3, “Managing iPrint Client Settings,” on page 54](#)
- ♦ [Section 4.7.4, “Automatically Installing Printers,” on page 55](#)
- ♦ [Section 4.7.5, “Using Advanced Settings,” on page 56](#)

4.7.1 Understanding the Schema Update

iPrint Client Management requires you to extend the eDirectory schema. The `iprint.sch` file contains the schema extension, which adds five optional attributes to Organization, Organizational Unit, Groups, and User object class definitions. The five attributes are:

- ♦ `iPrintiCMControlFlags`
- ♦ `iPrintiCMPrinterList`
- ♦ `iPrintiCMClientTrayURI`
- ♦ `iPrintiCMClientProxyURI`
- ♦ `iPrintiCMClientFlags`

Users should be able to read these new attributes on their user objects; however, if you plan to configure iCM at an Organization, Organizational Unit, or Group object level, users might need the Read right to read the attributes. The first time you access iCM on an Organization, Organizational Unit, or Group object in iManager, iManager attempts to assign the Read right to the attributes. Then users should be able to read these attributes through inheritance on subcontainers and groups. If iManager cannot assign the read right to the Organization, Organizational Unit, or Group object,

your configuration is saved, but a message appears explaining that rights to the attributes could not be granted. You need to grant rights to these iPrint attributes by using either the eDirectory Administration or Trustee task in iManager.

TIP: To avoid multiple explicit rights assignments for the iCM attributes, you should make your first iCM assignment as high in the eDirectory tree as possible so that the rights can flow down the tree. You could even make an iCM assignment so that the Read right is set, and then disable the iCM assignment because this does not remove the Read right to the attributes.

4.7.2 Deploying iPrint Client Management

- 1 Distribute the iPrint Client version 4.26 or later.

For more information, see [Section 4.1.4, “Windows: Distributing the iPrint Client,” on page 39](#) or if the iPrint Client is already distributed, see [Section 4.6.1, “Updating the iPrint Client,” on page 44](#).

If you use the `iprint.ini` to distribute the iPrint Client, you need to allow enough time for the users to update to the new client before configuring iCM. If you do not allow enough time, the client attempts to update a workstation at the same time it is trying to deploy the settings in iCM.

- 2 Configure iPrint Client Management in iManager.

See [Section 4.7.3, “Managing iPrint Client Settings,” on page 54](#) or [Section 4.7.4, “Automatically Installing Printers,” on page 55](#) for more information.

4.7.3 Managing iPrint Client Settings

You can standardize the iPrint Client settings for users by using iCM Client Configuration to define the attributes for an Organization, Organizational Unit, Group, or a User Object. The attributes are delivered as a complete set, meaning that if you change only one attribute, all of the attributes are delivered to the client. The changes are not additive, so you cannot change the value of an attribute for an object and change the value of a different attribute on another object. Only the set of attributes closest to the user’s object are used.

When a user logs in, iCM walks up the tree from the user’s container to the highest container in the user’s fully distinguished name. Then iCM starts applying the iCM attributes in each container as it walks back down to the user object. Then the user’s group membership list is queried for the same attributes. Those closest to the User object have a higher priority. The set of attributes on or closest to the User object is always used.

WARNING: Using iCM on group objects can simplify making assignments, but using iCM on multiple groups can cause undesired results. You should create a new Group object with a descriptive name so that you can control the desired results for users that you assign to that group.

To configure the iCM client attributes:

- 1 In Novell iManager, click *iPrint > iPrint Client Management*.
- 2 Browse to and select the Organization, Organizational Unit, Group, or User object you want to automatically configure iPrint Client Settings for.
- 3 Click *Client Configuration*.

- 4 Configure the attributes you want for the iPrint Client on the workstation.

Click *Help* for explanations about the attributes.

- 5 Click *OK* to save the changes.

A log file of the iCM actions taken and ignored is stored in

`c:\ndps\users\username\icmlog.txt`, where *username* is the name used to log in to Windows by using the Novell Client Login. The file is created and updated when the user uses the Novell Client to log in to the workstation.

4.7.4 Automatically Installing Printers

iPrint Client Management Printer Configuration lets you designate printers to be downloaded and installed automatically on user workstations when users log in to the network. These printers appear in the user's printers folder, ready for use. You can also use this feature to remove printers, assign a printer to be the default printer, and set a printer to be a temporary printer so that it is removed when the workstation is rebooted.

iCM configures printers on workstations based on assignments made on the User object, Group object, Organization, and Organizational Unit container. When you use iManager to designate a printer for automatic installation on a user's workstation, the associated eDirectory Container, Group, or User object is updated with this information.

The actions taken are cumulative, meaning that action is taken for each assignment you made. For example, if you add two printers at one level, then add three more printers at another level, the workstation has all five printers installed. If you have more than one printer set as the default, the last printer installed is set as the default.

When a user logs in, iCM starts searching at the highest container in the user's full distinguished name, looking for the iCM Printer Configuration associated to containers and groups. The search continues through subcontainers down to the User object. Printers continue to be added or removed to the workstation as specified by iCM. If the *Allow Only Specified Printers to Reside on Workstation* option is enabled, any actions to printers specified above that container or group in the user's fully distinguished name are ignored, but any actions to printers specified between that point and the User object are taken.

- ♦ If the client finds a printer designated for installation that has not yet been installed, it is automatically installed.
- ♦ If a currently installed printer is added to the *Printers to Remove* list, that printer is automatically uninstalled.
- ♦ If you designate a different printer to be the default, the change is made.
- ♦ Using *Do Not Update Workstations* turns off iCM for printers at that container, group or user, but actions for iCM printers found on other containers or groups are taken.

WARNING: Using iCM on group objects can simplify making assignments, but using iCM on multiple groups can cause undesired results. You should create a new Group object with a descriptive name so that you can control the desired results for users that you assign to that group.

To automatically install printers:

- 1 In Novell iManager, click *iPrint > iPrint Client Management*.

- 2 Browse to and select the Organization, Organizational Unit, Group or User object you want to automatically install printers for.
- 3 Configure the attributes you want for the *Printer Configuration* option.
Do Not Update Workstations: iCM for printers is disabled and printers are not installed or removed from workstations. Printers already installed are not altered.
Allow Only Specified Printers to Reside on Workstations: Allow only the iPrint printers specified in the *Printers to Install* list to reside on the workstation. All other iPrint printers on the workstation are removed. Non-iPrint printers are not affected.
- 4 Use the buttons to modify the *Printers to Install* list.
 If you select a printer to be the default and want to remove the Set as Default attribute, click the button adjacent to the *Default Printer* field.
- 5 Modify the *Printers to Remove* list.
- 6 Click *OK* to save the changes.

A log file of the iCM actions taken and ignored is stored in `c:\ndps\users\username\icmlog.txt`, where *username* is the name used to log in to Windows using the Novell Client Login. The file is created and updated when the user uses the Novell Client to log in to the workstation.

4.7.5 Using Advanced Settings

The iPrint Client Management Advanced Settings page lets you configure how far up the eDirectory tree iCM should look for iCM client settings and printers. You can also configure whether the iCM results dialog box should display on the workstations, which is useful for troubleshooting the iCM results.

- 1 In Novell iManager, click *iPrint > iPrint Client Management*.
- 2 Browse to and select the Organization, Organizational Unit, Group or User object you want to configure the settings on.
- 3 Click *Advanced Settings*.
- 4 Configure the settings you want.

Ignore iPrint Client Management (iCM) settings on parent containers: Limits the scope used to find iCM client settings and assigned printers to the object where the assignment is made and below. You can enable this setting on User, Group, and Container objects. You should enable this setting to limit traffic on the network, especially across slow network links.

When a user logs in, iCM checks the User object and group memberships, then it walks up the eDirectory tree from the user object to the root-most container to determine where iCM assignments have been made. If iCM encounters the Ignore Settings on Parent Containers attribute, iCM stops walking up the tree on that object. Then, iCM implements the iCM client settings and printers on the workstation.

To determine the iCM printers for the workstation, iCM searches down to the User object, adding and removing iCM printers as specified on each Container, Group, or User object. For iCM client settings, iCM uses the set of iCM client attributes closest to or on the User object.

The attributes are delivered as a complete set, meaning that if you change only one attribute, all of the attributes are set on the client. The changes are not additive, so you cannot change the value of one attribute for an object and change the value of a different attribute on another object. Only the set of attributes closest to or on the user's object are used.

The following table describes the behaviors when enabling this setting on different objects.

Object	Behavior
User	Only the iCM client settings and printers assigned to the User object are used. iCM does not check any group memberships, the User object's container, or parent containers.
Group	iCM checks assignments on the User object and all associated groups, but does not check the User object's container or parent containers. All group memberships are read and assignments are considered even if this setting is enabled on just one group. This is useful if you want to apply iCM client settings or assigned printers from a group membership, but do not want any iCM client settings or assigned printers from the User object's container. WARNING: Using iCM on Group objects can simplify making assignments, but using iCM on multiple groups could cause undesired results. You should create a new Group object with a descriptive name so that you can control the desired results for users that you assign to that group.
Organization or Organizational Unit	iCM checks assignments on the user object, all associated groups, and each container up to a parent container where this setting is enabled.

Display iCM results in a dialog box on workstations: Displays a window on the workstation that shows the printers that were installed and removed.

- 5 Click *OK* to save the changes.

4.8 Uninstalling the Novell iPrint Client

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

- ♦ [Section 4.8.1, "Removing the Linux iPrint Client," on page 57](#)
- ♦ [Section 4.8.2, "Removing the Macintosh iPrint Client," on page 58](#)
- ♦ [Section 4.8.3, "Removing the Windows iPrint Client," on page 58](#)

4.8.1 Removing the Linux iPrint Client

You can remove the Linux iPrint Client RPM from a terminal prompt. Depending on whether a high-security (sh) or low-security (sl) Client, use one of the following commands:

```
rpm -e novell-iprint-xclient-sh
```

```
rpm -e novell-iprint-xclient-sl
```

NOTE: You need to delete the printers manually after uninstalling the Linux iPrint Client on the workstation.

4.8.2 Removing the Macintosh iPrint Client

- 1 Open the *MacOSX* folder.
- 2 Click *Application*, then double-click *Uninstall 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 uninstall was successful.

NOTE: You need to delete the printers manually after uninstalling the Macintosh iPrint Client on the workstation.

4.8.3 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.

4.9 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 systems. 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 109](#) for more information.

4.10 What's Next

- ♦ [Chapter 7, “Customizing iPrint,” on page 63](#): 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 9, “Managing Your Print System,” on page 89](#): Helps you monitor and maintain your print system.

Running iPrint in a Virtualized Environment

5

iPrint runs in a virtualized environment just as it does on a physical NetWare server, or on a physical server running OES 2 Linux, and requires no special configuration or other changes.

To get started with virtualization, see the *Virtualization: Getting Started* guide.

For information on setting up virtualized OES 2 Linux, see “**Setting Up Virtual Machines**” in the *Virtualization: Getting Started* guide and “**OES Linux Virtual Machines**” in the *Virtualization: Guest Operating System Guide*.

Migrating iPrint from NetWare to OES 2 SP1 Linux

6

The OES 2 SP1 Migration Tool has a plug-in architecture and is made up of Linux command line utilities with a GUI wrapper. You can migrate iPrint to an OES 2 SP1 Linux server through either the GUI Migration Tool or through the command line utilities.

To get started with migration, see *OES 2 SP1: Migration Tool Administration Guide*.

For more information on migrating iPrint, see “[Migrating iPrint from NetWare to OES 2 Linux](#)”.

Customizing iPrint

7

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.

- ♦ [Section 7.1, “Setting Up Location-Based Printing,” on page 63](#)
- ♦ [Section 7.2, “Customizing the iPrint HTML Interface,” on page 66](#)

7.1 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 by using the iPrint Map designer to create a map showing the location of printers.

- ♦ [“Creating Location-Based Maps with iPrint Map Designer” on page 63](#)
- ♦ [“Creating Customized Printer Lists” on page 66](#)

7.1.1 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/Vista 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” on page 64](#)
- ♦ [“Adding Printers from Different Print Managers” on page 65](#)
- ♦ [“Hosting Maps on a Web Server” on page 65](#)
- ♦ [“Using the Keyboard with iPrint Map Designer” on page 65](#)

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 specify 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 you are 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 by using iPrint Map Designer. The following table lists the tasks to complete and the corresponding keystrokes required.

Table 7-1 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

7.1.2 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 by 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.

7.2 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 `var/opt/novell/iprint/htdocs/examples` directory. For information on the HTML interface, see [Appendix D, "Configuring the iPrint HTML Interface," on page 145](#).

- ♦ 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 63](#).

Using your Web browser, view this example from `var/opt/novell/iprint/htdocs/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 `var/opt/novell/iprint/htdocs/examples/example2/innerweb.htm`

7.3 Installing Printer as the 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 box. When 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 <i>Set as Default</i> check box, which is selected.
DEF_TYPE_OPTION_NO	Displays the <i>Set as Default</i> check box, which is not selected.
DEF_TYPE_OPTION_NONE	Hides the <i>Set as Default</i> check box, which is not selected.

- 3** Save the file.

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

Configuring iPrint with Novell Cluster Services

8

This section will help you do the following:

- ♦ [Section 8.1, “Understanding the Benefits of High Availability Printing,” on page 69](#)
- ♦ [Section 8.2, “iPrint Cluster Requirements,” on page 70](#)
- ♦ [Section 8.3, “OES Server Installation Options,” on page 70](#)
- ♦ [Section 8.4, “Clustering on NSS File System,” on page 71](#)
- ♦ [Section 8.5, “Clustering on Linux POSIX File System,” on page 73](#)
- ♦ [Section 8.6, “Starting iPrint Cluster Resource,” on page 83](#)
- ♦ [Section 8.7, “Creating and Configuring a Driver Store and Print Manager,” on page 84](#)
- ♦ [Section 8.8, “Using iPrint in a Clustered Environment,” on page 85](#)
- ♦ [Section 8.9, “Changing Start, Failover, and Failback Modes for Printing,” on page 85](#)
- ♦ [Section 8.10, “Troubleshooting iPrint in a Cluster,” on page 86](#)
- ♦ [Section 8.11, “iPrint Configuration Worksheet,” on page 86](#)

8.1 Understanding the Benefits of High Availability Printing

Running iPrint on a cluster provides the following benefits:

- ♦ Centralized management
 - ♦ By configuring the Print Management Database to reside on a shared disk cluster volume, you no longer need to replicate information to achieve high availability.
 - ♦ The cluster console GUI lets you monitor and control the location of cluster volumes with the Driver Store and Print Manager services using them from a single management workstation.
 - ♦ Because cluster volumes are tightly consistent and highly available, distributed print management tasks are simplified.
- ♦ Automatic restart of print services
 - ♦ If a server fails, the cluster volume containing the Print Management Database and spool area automatically remounts on a surviving server in the cluster. The Driver Store and Print Manager also automatically restart without user intervention.
 - ♦ On restart, the Driver Store and Print Manager discover the Print Management Database on a cluster volume mounted on their server. Because the cluster volume is the same regardless of which server it is mounted on, no print-related information is lost or out of date.

8.2 iPrint Cluster Requirements

To properly set up and configure iPrint in a cluster environment, you need the IP addresses and partitions listed below. See [Section 8.11, “iPrint Configuration Worksheet,” on page 86](#) for a worksheet to help in configuring your system.

- ♦ IP address for the cluster.
- ♦ IP address for each node in the cluster.
- ♦ IP address for the iPrint resource in the cluster.
- ♦ SBD partition of 10 MB.
- ♦ Resource Partition of 20 GB on your shared disk.

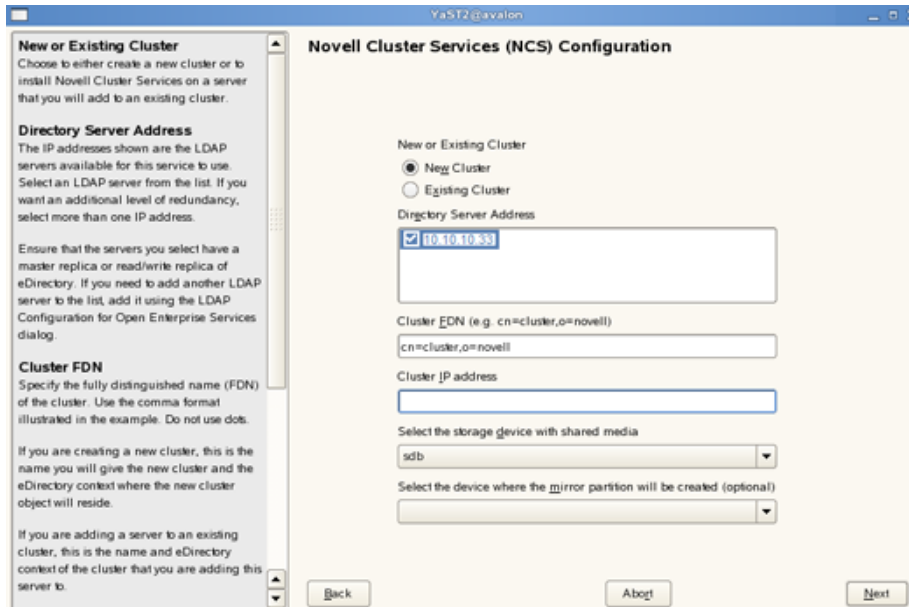
8.3 OES Server Installation Options

When you install OES on the server, you should select the *iPrint*, *Novell Cluster Services* and *NSS* options. On the Installation Settings page that summarizes the choices you have made, you must click *Novell Cluster Services* before you are allowed to continue. Confirm the Admin user's username and password, and then on the next screen you must select *Configure Later*

8.3.1 Configuring Novell Cluster Services

On your OES 2 Linux server, install and configure Novell Cluster Services on all nodes of the cluster.

- 1 Log in to the OES 2 Linux server as the root user.
- 2 In YaST, go to *System*, and select *Cluster Services* (NCS).
Only click it once. It might take a moment to initialize.
- 3 Do one of the following:
 - ♦ If you have not installed Novell Cluster Services on this server, select *Novell Cluster Services* from the list of *OES Services*, click *Accept*, then follow the prompts to install the software.
 - ♦ If Novell Cluster Services is already installed, do not modify the selections, then click *Accept*.
- 4 On the Novell Open Enterprise Server Configuration page, under *Novell Cluster Services*, click the *Disabled link to enable configuration*.
The following message is displayed:
Novell Cluster Services (NCS) requires additional configuration information before continuing or disable the configuration.
- 5 On the Novell Open Enterprise Server Configuration page, click the *Novell Cluster Services* link to open the Novell Cluster Services Configuration page.
- 6 When prompted, enter the password for the Administrator user identity that you entered when you installed the software, then click *OK*.
- 7 Follow the prompts to configure the service and create an NCS Cluster object.



To create the object, you need an IP address for the cluster resource and the device path for the SBD partition that was defined when you configured the shared disk array. If you cannot see the shared device for the SBD partition (the SDA or SDB partition created earlier), repeat the steps in [Section 8.5.4, “Use Cfdisk to Prepare the Partition,”](#) on page 74.

You can look in `/dev/disk/by-id/` for this information

When configuring subsequent nodes, choose *Existing Cluster*.

8 Click *Next*

9 Choose the IP address for the cluster, then click *Next*.

The cluster object is created and started.

NOTE: The Admin user must be a LUM-enabled user in order to manage Clustering and NSS from iManager. In some post-installs of Clustering and NSS, the Admin user might not be automatically LUM-enabled, and you might be required to manually LUM-enable the Admin user.

8.4 Clustering on NSS File System

The preferred way of clustering for iPrint is to cluster it on a NSS volume, rather than on an EVMS volume.

- ♦ [Section 8.4.1, “Prerequisites,”](#) on page 71
- ♦ [Section 8.4.2, “Before You Start,”](#) on page 72
- ♦ [Section 8.4.3, “Setting up the Cluster,”](#) on page 72

8.4.1 Prerequisites

- ♦ Novell Cluster Services (NCS)
- ♦ Novell Storage Services (NSS)

8.4.2 Before You Start

- Identify the nodes to host the iPrint service
- Install NCS on OES 2 SP1 Linux using instructions specified in the NCS guide.
- Create shared disk partitions and NSS pools if they do not already exist and configure the shared pools to work with Novell Cluster Services by cluster-enabling them as per instructions in Configuring Cluster Resources for Shared NSS Pools and Volumes in the Novell Cluster Services Guide.

8.4.3 Setting up the Cluster

- 1 Ensure that the pool resource you have created is online on the server where you intend to run the iPrint service.

To verify this, use the *Cluster > Cluster Manager* task in iManager.

- 2 Execute the `iprint_nss_relocate` script. For details on this script, see [Section 3.4.1, “Executing the Script,” on page 28](#).

Make sure you specify the `-l cluster` option with the script.

For example: `iprint_nss_relocate -a cn=admin,o=novell -p novell -n /media/nss/NSSVOL1 -l cluster`

IMPORTANT: Use `cluster` keyword with the `-l` option. Do not replace the `cluster` keyword with a cluster object name.

Review the messages displayed on the screen to confirm the data migration is completed.

- 3 Using the *Cluster > Cluster Manager* task in iManager, migrate the pool resource to the next identified node and run the `iprint_nss_relocate` script with the same arguments.
- 4 Repeat [Step 2](#) to [Step 3](#) on all the iPrint nodes.
- 5 To start and configure iPrint, execute the instructions in [Section 3.2, “Setting Up iPrint,” on page 24](#)

While configuring iPrint, ensure that all references to IP addresses or DNS names are to the clustered pool’s IP address and DNS name.

IMPORTANT: During creation of the Print Manager, ensure you do not select the the *Start Print Manager after Creation* check box.

At this stage you will encounter a certificate error, indicating 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. For more information on resolving certificate errors, [Section 9.2, “Understanding and Managing Certificates,” on page 89](#).

- 6 To load iPrint, add the following lines to the existing load script before the `exit 0` statement
- ```
ignore_error mv /media/nss/NSSVOL1/var/opt/novell/iprint/
iprintgw.lpr /media/nss/NSSVOL1/var/opt/novell/iprint/
iprintgw.lpr.bak
```

---

**NOTE:** Replace the `/media/nss/NSSVOL1` in the above script, with your actual cluster volume mount point.

---

```
exit_on_error rcnovell-idsd start
```

```
exit_on_error rcnovell-ipsmd start
```

- 7 To unload iPrint, add the following lines to the existing unload script after the `./opt/novell/ncs/lib/ncsfuns` statement

```
ignore_error rcnovell-ipsmd stop
```

```
ignore_error rcnovell-idsd stop
```

## 8.5 Clustering on Linux POSIX File System

- ♦ [Section 8.5.1, “Configuring a Shared Disk,” on page 73](#)
- ♦ [Section 8.5.2, “Carving Disk Partitions,” on page 74](#)
- ♦ [Section 8.5.3, “Update Your Server,” on page 74](#)
- ♦ [Section 8.5.4, “Use Cfdisk to Prepare the Partition,” on page 74](#)
- ♦ [Section 8.5.5, “Creating Linux POSIX File Systems on Shared Disks,” on page 74](#)
- ♦ [Section 8.5.6, “Clustering on an NSS File System,” on page 79](#)
- ♦ [Section 8.5.7, “Configure a Cluster Resource to Host Printing,” on page 80](#)

### 8.5.1 Configuring a Shared Disk

After you have installed Novell Cluster Services™, you can begin configuring the shared storage device for the cluster as specified by the shared storage device's documentation.

If YaST appears with a new `disk found` message during the configuration of an iSCSI or a Storage Area Network (SAN), close the dialog box. You do not want to create a file system at this point.

**SAN:** A high-speed subnetwork of shared storage devices used for storing data.

For information on configuring a SAN, consult the SAN vendor's documentation.

**iSCSI:** Uses SCSI block storage protocols networked over a high-speed TCP/IP network to create a low-cost Storage Area Network (SAN) using commodity high-speed Ethernet hardware.

- ♦ **iSCSI for NetWare** lets you configure a NetWare® server to serve as an iSCSI target. This requires you to install an iSCSI driver that acts as an iSCSI protocol initiator. For more information on iSCSI for NetWare, see the *OES 2 SP 1: iSCSI 1.1.3 for NetWare Administration Guide*. For information on the using an iSCSI initiator on Linux, see “Accessing iSCSI Targets on NetWare Servers from Linux Initiators” in the *OES 2 SP 1: iSCSI 1.1.3 for NetWare Administration Guide*.
- ♦ **Third-party** vendors have their own iSCSI solutions. Refer to the vendor's documentation.

---

**IMPORTANT:** Configure the iSCSI drives to load when the servers starts by entering `chkconfig iscsi on` at a terminal prompt.

---

## 8.5.2 Carving Disk Partitions

Using utilities that came with your shared disk, carve two partitions as follows:

- ♦ SBD partition of 20 MB.

---

**WARNING:** Do not reconfigure or remove a logical disk or segment manager containing the SBD partition.

---

- ♦ Resource Partition of 20 GB on your shared disk.

## 8.5.3 Update Your Server

These procedures require that you install the listed updates using the OES Red Carpet<sup>®</sup> channel on each node of the cluster. You must be running the listed RPM version or later. See “[Updating an OES 2 SP1 Linux Server](#)” in the *OES2 SP1: Linux Installation Guide* for more information.

To view the installed RPM versions, use the `rpm -qa` command.

```
novell-ncp-5.0.1-48
novell-ncpserv-1.3-6
novell-nss-4.9.20-1
evms-2.3.3-0.43
novell-cluster-services-km-1.8.2-57
```

## 8.5.4 Use Cfdisk to Prepare the Partition

To ensure your disk is properly partitioned and the partition table is zeroed out, use `cfdisk` and complete the following steps.

- 1 At the command line, enter `cfdisk /dev/sba`.  
An error usually displays indicating the partition is invalid.
- 2 When prompted, select *Yes* to zero out the partition.
- 3 Select *Write* from the menu to write out the partition tables.

## 8.5.5 Creating Linux POSIX File Systems on Shared Disks

To configure shared media for a cluster, you must use EVMS. Using EVMS to create partitions, containers, volumes, and file systems helps prevent data corruption caused by multiple nodes accessing the same data. You can create partitions and volumes using any of the journaled Linux file systems (EXT3, Reiser, etc.).

EVMS virtual volumes are recommended for Novell Cluster Services because they can more easily fail over to different cluster servers and provide greater protection for shared media from unauthorized access. You can enter `man evms` at the Linux server console to reference the `evms` man page, which provides additional instructions and examples for `evms`.

You can also enter `man mount` at the Linux server console to reference the `mount` man page, which provides additional instructions and examples for the `mount` command.

The following sections provide the necessary information for using EVMS to create a Linux POSIX volume and file system on a shared disk:

- ♦ “Ensuring That the Shared Disk Is not a Compatibility Volume” on page 75
- ♦ “Removing Other Segment Managers” on page 76
- ♦ “Creating a Cluster Segment Manager Container” on page 77
- ♦ “Making a New Container Active” on page 78
- ♦ “Creating an EVMS Volume for iPrint Resources (Conditional)” on page 79
- ♦ “Creating a Linux POSIX File System on the EVMS Volume” on page 79

---

**WARNING:** EVMS administration utilities (evms, evmsgui, and evmsn) should not be running when they are not being used. EVMS utilities lock the EVMS engine, which prevents other evms-related actions from being performed. This affects both NSS and Linux POSIX volume actions.

NSS and Linux POSIX volume cluster resources should not be migrated, offlined, or onlined while any of the EVMS administration utilities are running.

---

### Ensuring That the Shared Disk Is not a Compatibility Volume

New EVMS volumes are by default configured as compatibility volumes. If any of the volumes on your shared disk (that you plan to use in your cluster) are compatibility volumes, you must delete them because the volumes are created later.

---

**NOTE:** The SBD partition should not be changed by using this procedure. The SBD partition is acceptable as a NWSegMgr.

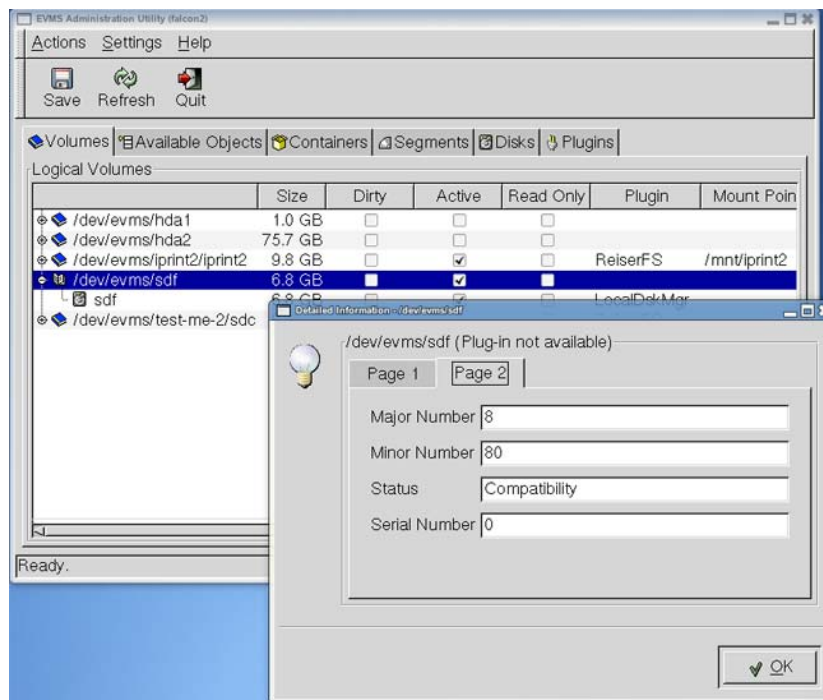
---

- 1 At the Linux server console, enter `evmsgui`.
- 2 Click Yes, if the following prompt appears.



When starting, EVMS discovers new disks available to the server and configures them as NWSegMgr.

- 3 Click the *Volumes* tab, then right-click the volume on the shared disk and select *Display details*.
- 4 Click the *Page 2* tab and determine from the Status field if the volume is a compatibility volume.



If the volume is a compatibility volume or has another segment manager on it, continue with **Step 4a** below.

- 4a Click the *Volumes* tab, right-click the volume, then select *Delete*.
- 4b Select the volume, then click *Recursive Delete*.
- 4c (Conditional) If a Response Required pop-up appears, click the *Write zeros* button.
- 4d (Conditional) If another pop-up appears, click *Continue* to write 1024 bytes to the end of the volume.

## Removing Other Segment Managers

If any of the shared disks you plan to use with your cluster have segment managers other than CSM, you must delete them as well.

The SBD partition cannot be located on the same virtual disk as your cluster resource. If the segment manager contains the SBD partition, use your shared storage tools to carve out a different partition for your cluster resource.

---

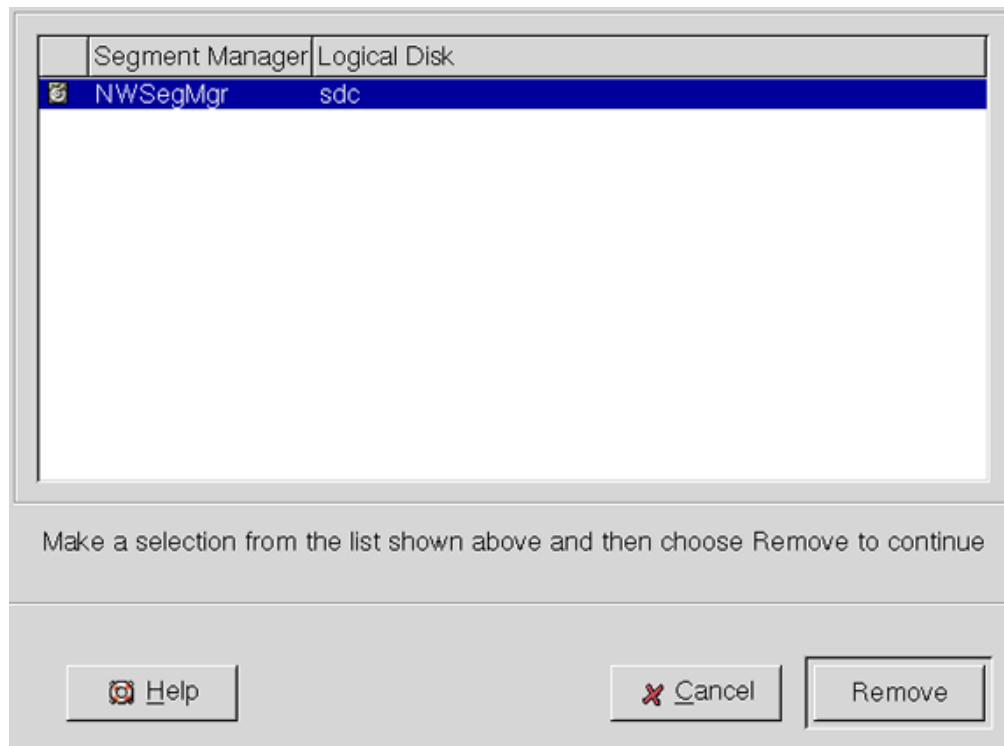
**WARNING:** Do not reconfigure or remove a logical disk or segment manager containing the SBD partition.

---

- 1 In evmsgui, click the *Disks* tab, then right-click the disk you plan to use for a cluster resource.

- 2 Select *remove segment manager from Object*.

This option only appears if there is another segment manager for the selected disk.



- 3 Select the listed segment manager and click *Remove*.

### Creating a Cluster Segment Manager Container

To use a Linux POSIX volume with EVMS as a cluster resource, you must use the Cluster Segment Manager (CSM) plug-in for EVMS to create a CSM container.

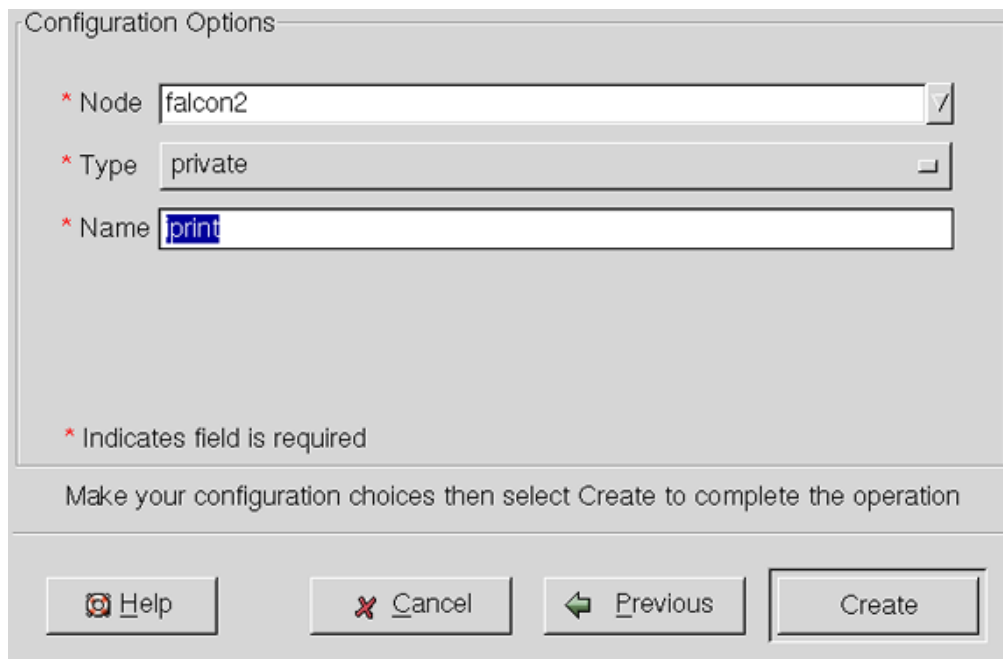
You should note the container name because it is needed when configuring the cluster scripts.

---

**NOTE:** CSM containers require Novell Cluster Services (NCS) to be running on all nodes that access the CSM container. Do not make to modifications to EVMS objects unless NCS is running.

---

- 1 In *evmsgui*, click *Actions*, select *Create*, then select *Container*.
- 2 Select *Cluster Segment Manager*, then click *Next*.
- 3 Select the disks (storage objects) you want to place in the container, then click *Next*.
- 4 On the Configuration Options page, select the node where you are creating the container, specify *Private* as the type, then choose a name for the container.



The image shows a 'Configuration Options' dialog box with three required fields: Node (falcon2), Type (private), and Name (iprint). A note at the bottom states: '\* Indicates field is required'. Below the fields, a message reads: 'Make your configuration choices then select Create to complete the operation'. At the bottom are four buttons: Help, Cancel, Previous, and Create.

Configuration Options




\* Node

\* Type

\* Name

\* Indicates field is required

Make your configuration choices then select Create to complete the operation

 Help  Cancel  Previous

The name must be one word, must consist of standard alphanumeric characters, and must not be any of the following reserved words:

- ♦ Container
- ♦ Disk
- ♦ EVMS
- ♦ Plugin
- ♦ Region
- ♦ Segment
- ♦ Volume

- 5 Click *Create* to save your changes.
- 6 Click *OK* to close the confirmation dialog box and return to the EVMS main screen.
- 7 Click the *Save* icon.

### **Making a New Container Active**

- 1 Click the *Container* tab.
- 2 Right-click the new container you just created and select *Modify Properties*.
- 3 Select your container, then click *Next*.
- 4 Click *Modify*.
- 5 Click the *Save* icon to commit the changes.

## Creating an EVMS Volume for iPrint Resources (Conditional)

Verify that EVMS has created your volume by looking at the *Volumes* tab. If the volume does not exist, complete the following:

- 1 In *evmsgui*, click *Actions*, select *Create*, then click *EVMS Volume*.
- 2 Select the container you just created (either the CSM container or the additional segment manager container) and specify a volume name.
- 3 Click *Create*, then click *Save*.

## Creating a Linux POSIX File System on the EVMS Volume

You should note the volume name used because it is needed when configuring the cluster scripts.

- 1 In *EVMSGUI*, click the *Volumes* tab and right-click the volume you just created.
- 2 Select *Make File System*, choose a Linux POSIX file system from the list, then click *Next*.  
iPrint requires a file system such as *reiserfs*, *ext2/3*, *xfs* or *NSS*. Do not choose *swap* as the file system.  
You should note the file system used because it is needed when configuring the cluster scripts.
- 3 Specify a volume label, then click *Make*.
- 4 Save your changes by clicking *Save*.
- 5 Exit *evmsgui* by clicking *Quit > Save > OK*.

---

**NOTE:** If you have problems with the iPrint Cluster, run the following commands:

```
chkconfig boot.evms on
chkconfig boot.lvm off
```

---

---

**WARNING:** Do not mount the file system from *EVMSGUI*. The file system needs to be mounted by the cluster resource load script. Also, entries should not be found in the */etc/fstab* file for the operating system to automatically mount this file system.

---

---

**WARNING:** EVMS administration utilities (*evms*, *evmsgui*, and *evmsn*) should not be running when they are not being used. EVMS utilities lock the EVMS engine, which prevents other *evms*-related actions from being performed. This affects both *NSS* and *Linux POSIX* volume actions.

*NSS* and *Linux POSIX* volume cluster resources should not be migrated, offlined, or onlined while any of the EVMS administration utilities are running.

---

## 8.5.6 Clustering on an NSS File System

It is now possible to host the iPrint configuration on an *NSS* Volume. The *NSS* file system is the most preferred file system for backup and clustering purposes for the benefits it provides over *Linux POSIX* file systems.

Hosting on an NSS file system involves migrating the data on the Linux POSIX file system to the NSS file system. This is done with the aid of `iprint_nss_relocate` script which provides a seamless transition from Linux POSIX file system to NSS file system. This script does the following:

1. Moves iPrint configuration data to the NSS Volume.
2. Symbolic links on the Linux POSIX file system will point to the location on NSS.
3. The local `/etc/passwd` iPrint user is disabled.
4. An `iprint LUM` user and `iprintgrp LUM` group are created.

These users along with apache's `www group` and `wwwrun user` are given rights to parts of the NSS file system, where the iPrint configuration and data are hosted.

To run this script, execute the following command:

```
iprint_nss_relocate -a <admin fdn in ldap format> -p <admin
password> -n <NSS Path with no trailing slash>
```

For example: `iprint_nss_relocate -a cn=admin,o=novell -p novell -n /media/nss/NSSVOL1`

Hosting on an NSS NCS involves following steps:

- 1 Create an NSS volume on the Cluster storage.
- 2 To migrate the iPrint configuration data on the Linux POSIX file system to the NSS volume, run `iprint_nss_relocate` script on a live node of the cluster as follows:

```
iprint_nss_relocate -a <admin fdn in ldap format> -p <admin
password> -n <NSS Path with no trailing slash> -l cluster
```

For example: `iprint_nss_relocate -a cn=admin,o=novell -p novell -n /media/nss/DATA -l cluster`

---

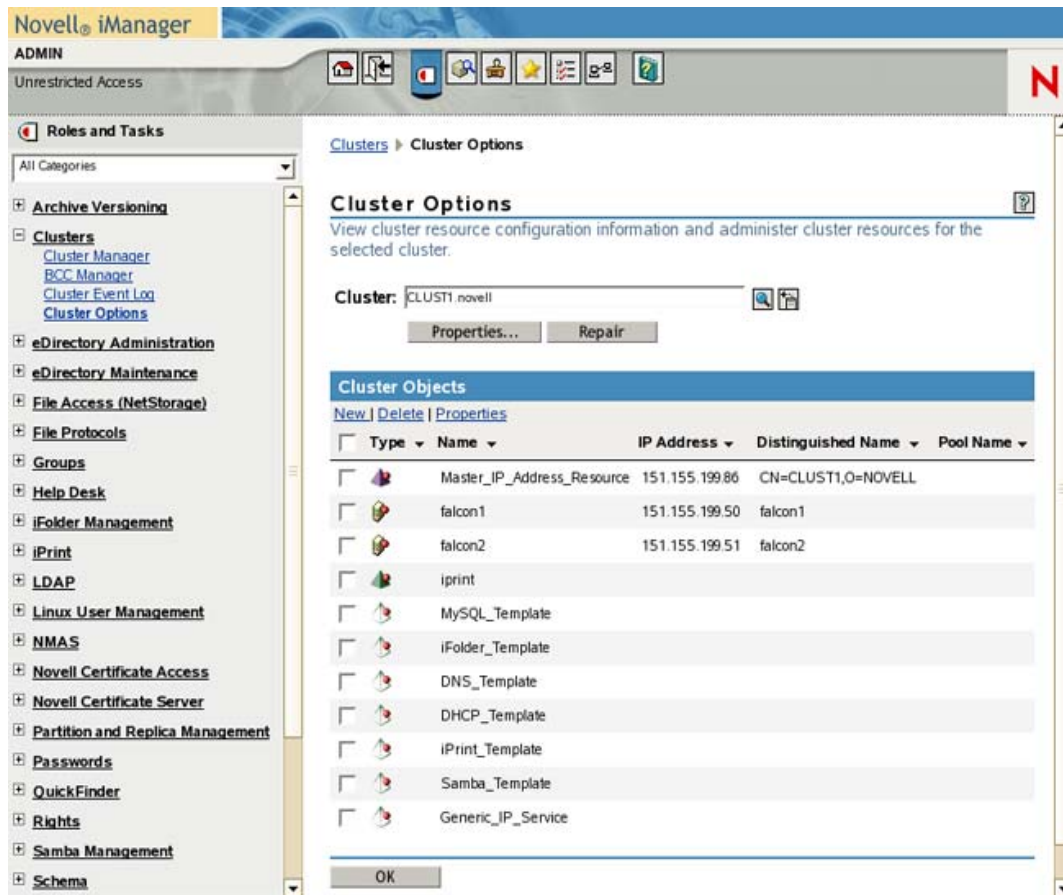
**IMPORTANT:** Use `cluster` keyword with the `-l` option. Do not replace the cluster keyword with a cluster object name.

---

- 3 Remove entry for `iprint_relocate` in failover script and make entry for `iprint_nss_relocate` script as mentioned in step 2, before cluster node comes up.  
If set, the `iprint_nss_relocate` will be executed, when the current live node in the cluster fails and another node comes up during failover.
- 4 `iprint_nss_script` sets symlinks to iPrint configuration data on NSS volume, if the symlinks does not exist.

## 8.5.7 Configure a Cluster Resource to Host Printing

- 1 From iManager, click *Clusters > Cluster Options*.



- 2 Select the Cluster Object created during the [Section 8.3.1, “Configuring Novell Cluster Services,”](#) on page 70.
- 3 Under the *Cluster Objects* heading, click *New*.
- 4 Select *Resource*, then click *Next*.
- 5 Specify a name in the *Cluster Resource Name* field.

- 6 Use the object selector for *Inherit from Template* to browse to and open the Cluster object you created, then select the *iPrint\_Template*.

---

**NOTE:** Template inheritance is possible only for EVMS cluster volumes and pools. iPrint\_Template inheritance is currently not possible for NSS cluster volumes and pools. For NSS clusters, `iprint_nss_relocate` script has to be inserted manually.

---

- 7 Select the *Define Additional Properties* check box, then click *Next*.
- 8 Edit the load script by making the changes outlined in the following table:

| Heading                     | Description                                                                                                                                                                                                             |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| define the IP address       | Replace <i>a.b.c.d</i> with the IP address of the iPrint service that is to be used for this resource                                                                                                                   |
| define the file system type | Replace <i>reiserfs</i> with the correct file system type.                                                                                                                                                              |
| define the container name   | Replace <i>name</i> with the name of the EVMS container created in section <a href="#">Section , "Creating a Cluster Segment Manager Container," on page 77</a> .                                                       |
| define the volume name      | Replace <i>name</i> with the name of the EVMS volume created in <a href="#">Section , "Creating an EVMS Volume for iPrint Resources (Conditional)," on page 79</a> .                                                    |
| define the mount point      | Confirm that <i>mnt/iprint</i> is the correct mount point. If you chose a different mount point for the shared disk other than <i>/mnt/iprint</i> , then ensure the same mount point is specified in the unload script. |

- 9 Change the timeout value to 3 minutes, then click *Next*.
- 10 Edit unload scripts by making the changes outlined in the following table:

| Heading                   | Description                                                                                                                                                                                                        |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| define the IP address     | Replace <i>a.b.c.d</i> with the IP address that is to be used for this resource. This is the same IP address specified in the load script.                                                                         |
| define the container name | Replace <i>name</i> with the name of the EVMS container. This is the same container name specified in the load script.                                                                                             |
| define the mount point    | Confirm that <i>mnt/iprint</i> is the correct mount point. If you chose a different mount point for the shared disk other than <i>/mnt/iprint</i> , then ensure the same mount point specified in the load script. |

- 11 Change the timeout value to 3 minutes, then click *Next*.
- 12 Verify that *Ignore Quorum* is deselected on the Resource Policies page, then click *Next*.
- 13 View the current Preferred Nodes assignments, and if necessary, click arrow button to assign or unassign servers to the print volume resource.

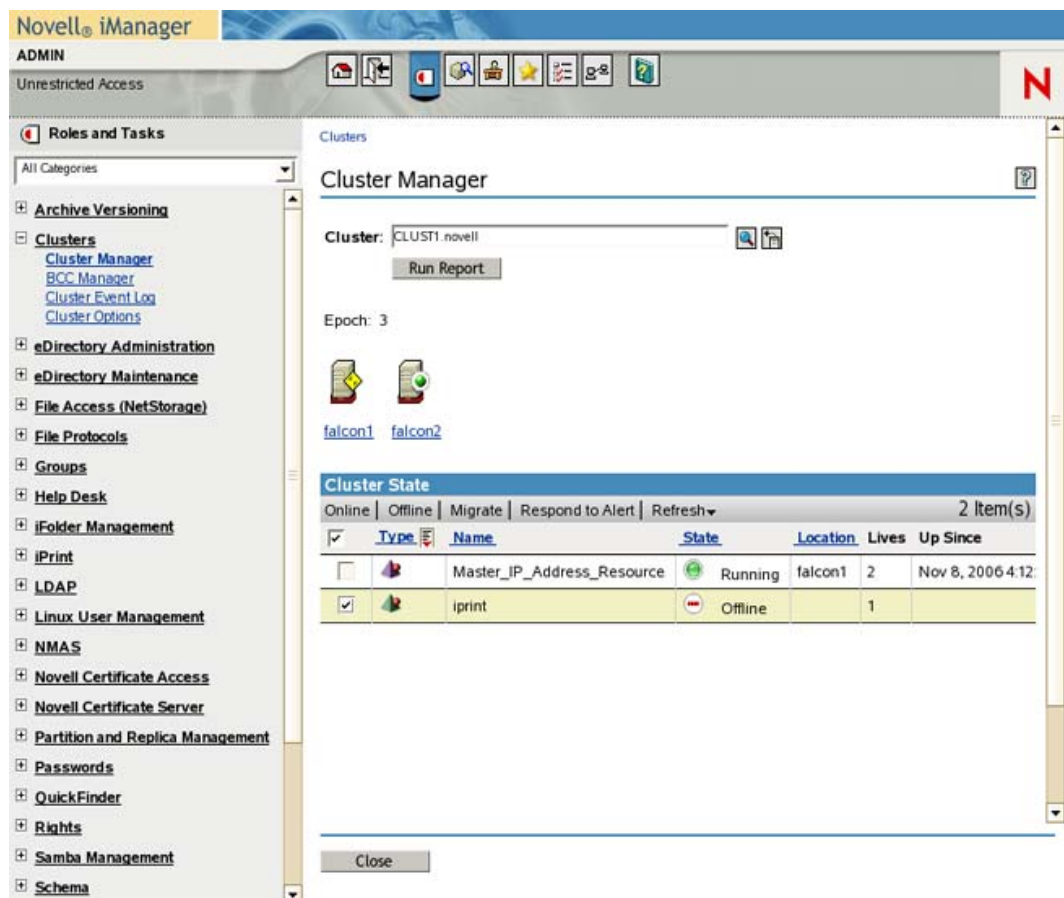
You can click the up-arrow or down-arrow button to change the failover order of the servers assigned to the print volume.

If you add a node to the cluster later, it might be added to the Assigned Nodes List. For this reason, you should check this list after adding nodes to ensure that iPrint fails over to the desired nodes.

- 14 Click *Finish*.

## 8.6 Starting iPrint Cluster Resource

- 1 In iManager, click *Cluster > Cluster Manager*.



- 2 Browse to and select the print Cluster object.
- 3 Under the *Cluster State* heading, select the cluster resource you created for print.
- 4 Click *Online* to load the iPrint cluster resource.

If the resource does not load, check to ensure that the shared disk is running and that the load script contains the correct entries.

- 5 Select the node you want to load the resource on.

Continue with “Creating and Configuring a Driver Store and Print Manager” on page 84.

## 8.7 Creating and Configuring a Driver Store and Print Manager

Before running iPrint in a cluster environment, you must create a Driver Store and Print Manager on the cluster-enabled volume.

To create a Driver Store using iManager:

- 1 From iManager, click *iPrint > Create Driver Store*.
- 2 Fill in the fields.

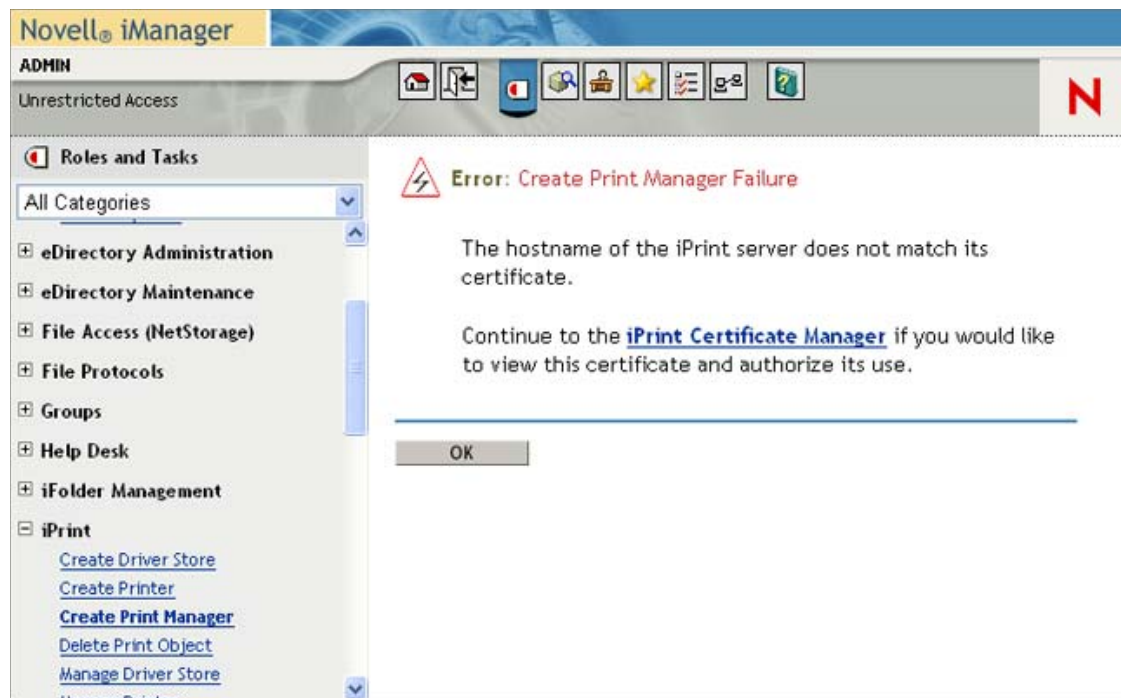
For more information, see [Section 3.2.1, “Creating a Driver Store,” on page 24](#).

To create a Print Manager:

- 1 From iManager, click *iPrint > Create Print Manager*.
- 2 Fill in the fields.

For the iPrint service you should use a DNS name that resolves to the secondary IP address used in the cluster load script.

- 3 When you create the Print Manager for the first time, you might receive an error about trusting a certificate. You need to click the *iPrint Certificate Manager* link and accept the certificate, then attempt to create the Print Manager again.



For more information, see [Section 3.2.3, “Creating a Print Manager,” on page 25](#).

**IMPORTANT:** Although you can have more than one Print Manager running in a cluster, only one Print Manager can run on a cluster resource node. For example, if you have a four-node cluster with serverA, serverB, serverC, and serverD, you can have two Print Managers; one running on serverA

and one on serverB and then assign them to fail over to different servers such as serverC and serverD. If you assign the Print Managers to fail over to the same cluster resource node, the Print Managers might collide and not fail over.

---

Now you can add printer drivers to the Driver Store and begin creating printers. For more information, see [Section 3.2.2, “Adding Printer Drivers,” on page 24](#) and [Section 3.2.4, “Creating a Printer,” on page 26](#).

## 8.8 Using iPrint in a Clustered Environment

If you are using the default iPrint Web pages or are embedding URLs in custom iPrint Web pages, you need to be aware of the following:

- ♦ Links to the default iPrint Printer List Web page or other custom pages in `\ippdocs` should use the DNS name or IP address of the print service. This is the IP address used in the cluster load script for iPrint. This address moves with the shared volume to other servers in the cluster during a failover.

If you use the server's DNS Name or IP Address or any other IP Address other than the one assigned to the iPrint Resource, links to iPrint Web pages will be broken when iPrint fails over to a different node in the cluster. In this case iPrint links will display a blank page or return an error.

## 8.9 Changing Start, Failover, and Failback Modes for Printing

By default, Novell Cluster Services sets the print cluster volume Start Mode and Failover Mode to Auto, and the Failback Mode to Disable. If the print volume Start Mode is set to Auto, iPrint automatically starts on a server when the cluster is first brought up. If the print volume Start Mode is set to Manual, you must manually start printing on a server, instead of having it automatically start when servers in the cluster are brought up.

If the print volume Failover Mode is set to Auto, iPrint automatically starts on the next server in the Assigned Nodes list in the event of a hardware or software failure. If the print volume Failover Mode is set to Manual, you can intervene after a failure occurs and before iPrint is moved to another node.

If the print volume Failback Mode is set to Disable, iPrint does not fail back to its most preferred node when the most preferred node rejoins the cluster. If the print volume Failback Mode is set to Auto, iPrint does automatically fails back to its most preferred node when the most preferred node rejoins the cluster. Generally, you want a failback to a preferred node to occur after business hours. You can set the print volume Failback Mode to Manual to prevent iPrint from moving back to its preferred node when that node is brought back online, until you are ready to allow it to happen.

---

**IMPORTANT:** We recommend that you use the default settings for Start, Failover and Failback modes.

---

To view or change the print volume Start, Failover, and Failback modes:

- 1 In iManager, click *Clusters > Cluster Options*, click the print volume resource object, then select *Properties*.

- 2 Browse to and select the cluster you want to manage.
- 3 Select the check box of the Print Cluster object you want to modify, then click the *Properties* link under the *Cluster Objects* heading.

The Failover and Failback modes are displayed.

## 8.10 Troubleshooting iPrint in a Cluster

Use the following sections to troubleshoot common issues when clustering iPrint:

- ♦ “Error Code 506D0203” on page 86
- ♦ Section 8.10.2, “Resource Goes Comatose on Failover,” on page 86
- ♦ Section 8.10.3, “iPrint Web Pages Are Displayed on One Node Only,” on page 86

### 8.10.1 Error Code 506D0203

If you receive error 506D0203 and the Print Manager fails to load, ensure that you are loading iPrint on a Linux POSIX file system such as ext3. iPrint cannot run on an NSS file system

### 8.10.2 Resource Goes Comatose on Failover

If a resource goes comatose after a failover, check the nodes in the cluster to see if the shared disk for iPrint is already mounted. If it is mounted, manually unmount the volume by using the following command:

```
umount iPrint_mount_point
```

If you see a `File system is in use` error, a user has a terminal open to that file system. You need to have the user, usually an administrator, exit the file system, then unmount the file system before the cluster resource can come online.

### 8.10.3 iPrint Web Pages Are Displayed on One Node Only

Ensure that the Print Manager is using the secondary IP address for the iPrint resources in `/etc/opt/novell/iprint/ipsmc.conf`. If the Print Manager was created using the node IP address, then iPrint works only on that node.

## 8.11 iPrint Configuration Worksheet

To properly configure your system, you need the following setup and information.

- ♦ SBD partition of 10 MB.
- ♦ Resource partition of 20 GB on your shared disk.

Use the following worksheet to record the names and IP addresses you need to set up iPrint in a cluster.

**Table 8-1** *iPrint Cluster Configuration Worksheet*

| Configuration Information                          | Where You Need It                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device path for SBD partition:                     | <ul style="list-style-type: none"><li>♦ See <a href="#">Step 7</a> in <a href="#">Section 8.3.1, “Configuring Novell Cluster Services,”</a> on page 70.</li></ul>                                                                                                                                                                                                                                                                              |
| IP address for the cluster:                        | <ul style="list-style-type: none"><li>♦ See <a href="#">Step 9</a> in <a href="#">Section 8.3.1, “Configuring Novell Cluster Services,”</a> on page 70.</li></ul>                                                                                                                                                                                                                                                                              |
| Cluster Segment Container Name:                    | <ul style="list-style-type: none"><li>♦ See <a href="#">Step 4</a> in <a href="#">Section , “Creating a Cluster Segment Manager Container,”</a> on page 77.</li><li>♦ See <a href="#">Step 8</a> in <a href="#">Section 8.5.7, “Configure a Cluster Resource to Host Printing,”</a> on page 80.</li><li>♦ See <a href="#">Step 10</a> in <a href="#">Section 8.5.7, “Configure a Cluster Resource to Host Printing,”</a> on page 80.</li></ul> |
| EVMS Volume Name:                                  | <ul style="list-style-type: none"><li>♦ See <a href="#">Step 2</a> in <a href="#">Section , “Creating an EVMS Volume for iPrint Resources (Conditional),”</a> on page 79.</li><li>♦ See <a href="#">Step 8</a> in <a href="#">Section 8.5.7, “Configure a Cluster Resource to Host Printing,”</a> on page 80.</li></ul>                                                                                                                        |
| Linux POSIX File System:                           | <ul style="list-style-type: none"><li>♦ See <a href="#">Step 2</a> in <a href="#">Section , “Creating a Linux POSIX File System on the EVMS Volume,”</a> on page 79.</li><li>♦ See <a href="#">Step 8</a> in <a href="#">Section 8.5.7, “Configure a Cluster Resource to Host Printing,”</a> on page 80.</li></ul>                                                                                                                             |
| IP address for the iPrint resource in the cluster: | <ul style="list-style-type: none"><li>♦ See <a href="#">Step 8</a> in <a href="#">Section 8.5.7, “Configure a Cluster Resource to Host Printing,”</a> on page 80.</li><li>♦ See <a href="#">Step 10</a> in <a href="#">Section 8.5.7, “Configure a Cluster Resource to Host Printing,”</a> on page 80.</li></ul>                                                                                                                               |



# Managing Your Print System

# 9

- ♦ [Section 9.1, “Using Web-Based Enterprise Management,” on page 89](#)
- ♦ [Section 9.2, “Understanding and Managing Certificates,” on page 89](#)
- ♦ [Section 9.3, “Managing the Print Manager,” on page 90](#)
- ♦ [Section 9.4, “Managing Printers,” on page 103](#)
- ♦ [Section 9.5, “Managing the Driver Store,” on page 110](#)
- ♦ [Section 9.6, “Configuring LDAP,” on page 112](#)

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 121](#).

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**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.

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- ♦ 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 2.7.2 Administration Guide](#).

## 9.1 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 `iprintman` 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 `iprintman`, see the [MAN page](#).

## 9.2 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/nps/portal/modules/iPrintX/certstore`. Deleting this file removes all accepted certificates.

## 9.3 Managing the Print Manager

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

- ♦ [Section 9.3.1, “Understanding the Print Manager Database,” on page 90](#)
- ♦ [Section 9.3.2, “Understanding the Print Manager Configuration File,” on page 91](#)
- ♦ [Section 9.3.3, “Changing the eDirectory Server Assignment,” on page 91](#)
- ♦ [Section 9.3.4, “Using the Print Manager Health Monitor,” on page 91](#)
- ♦ [Section 9.3.5, “Setting Up Printer Pooling,” on page 94](#)
- ♦ [Section 9.3.6, “Using Print Auditing,” on page 94](#)
- ♦ [Section 9.3.7, “Creating Additional Print Managers,” on page 99](#)
- ♦ [Section 9.3.8, “Loading or Unloading the Print Manager,” on page 100](#)
- ♦ [Section 9.3.9, “Moving Print Managers to Another Linux Server,” on page 100](#)
- ♦ [Section 9.3.10, “Enabling Printer Agent Redirection,” on page 101](#)

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

---

### 9.3.1 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.

---

**NOTE:** While database creation is a quick process, sometimes the backup is delayed because of other tasks the Print Manager is doing. You might need to wait a short while after you create or delete a printer before a backup is generated and uploaded to eDirectory™.

---

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/<PSM_Name>/psmdb.*` to `psmdbold.*`.
- 2 Rename `/var/opt/novell/iPrint/<PSM_Name>/psmdbsav.*` to `psmdb.*`.
- 3 Start the Print Manager.

## 9.3.2 Understanding the Print Manager Configuration File

When you create a Print Manager, a configuration file is created in `/etc/opt/novell/iprint/conf`. 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/conf/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 receive an error message instructing you to unload the current Print Manager before loading the new one.

## 9.3.3 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/conf`.

---

**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.

---

## 9.3.4 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” on page 91](#)
- ♦ [“Accessing the Print Manager Health Monitor” on page 92](#)
- ♦ [“Generating Reports” on page 92](#)
- ♦ [“Configuring Health Monitor Settings” on page 93](#)
- ♦ [“Posting Administrator Messages about a Printer” on page 93](#)

### 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 because of errors or which printers 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`, click the printer for a list of known problems. If one of the known problems is `Printer not connected`, 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<sup>®</sup> 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**).

### 9.3.5 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*.

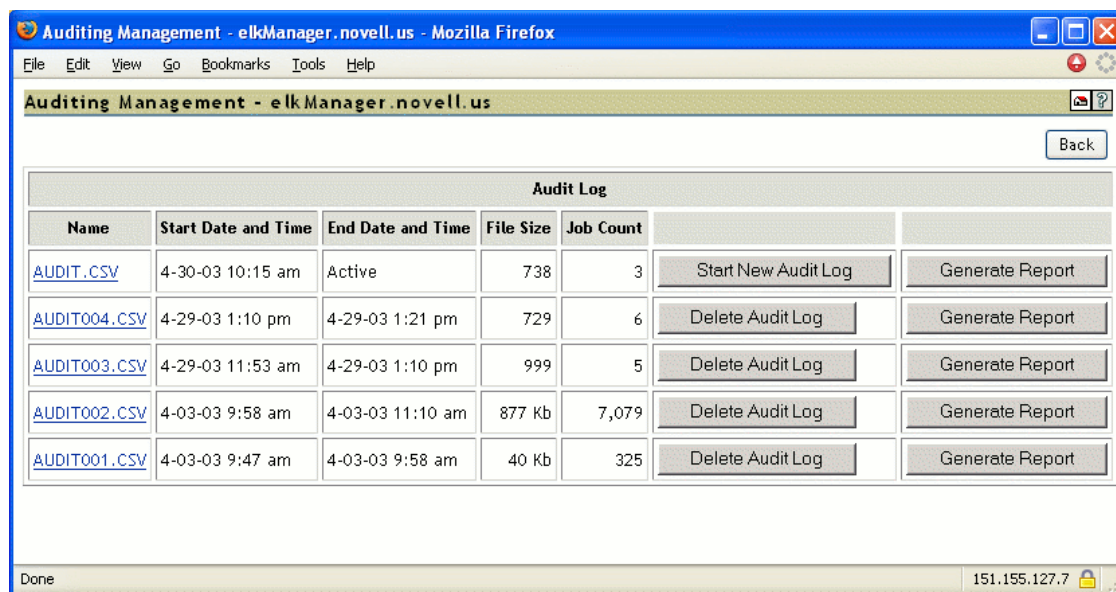
To modify or delete a pool, follow the above steps and select the desired action from the Select an Operation list in [Step 3](#).

### 9.3.6 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 9-1** Auditing Management Page



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

- ♦ “Using Novell iManager to Enable Auditing” on page 95
- ♦ “Using the Health Monitor to Enable Auditing” on page 95
- ♦ “Viewing Auditing Information” on page 96
- ♦ “Managing Audit Logs” on page 98
- ♦ “Configuring Automatic Log Rotation” on page 98
- ♦ “Downloading an Audit Report” on page 99

### 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.

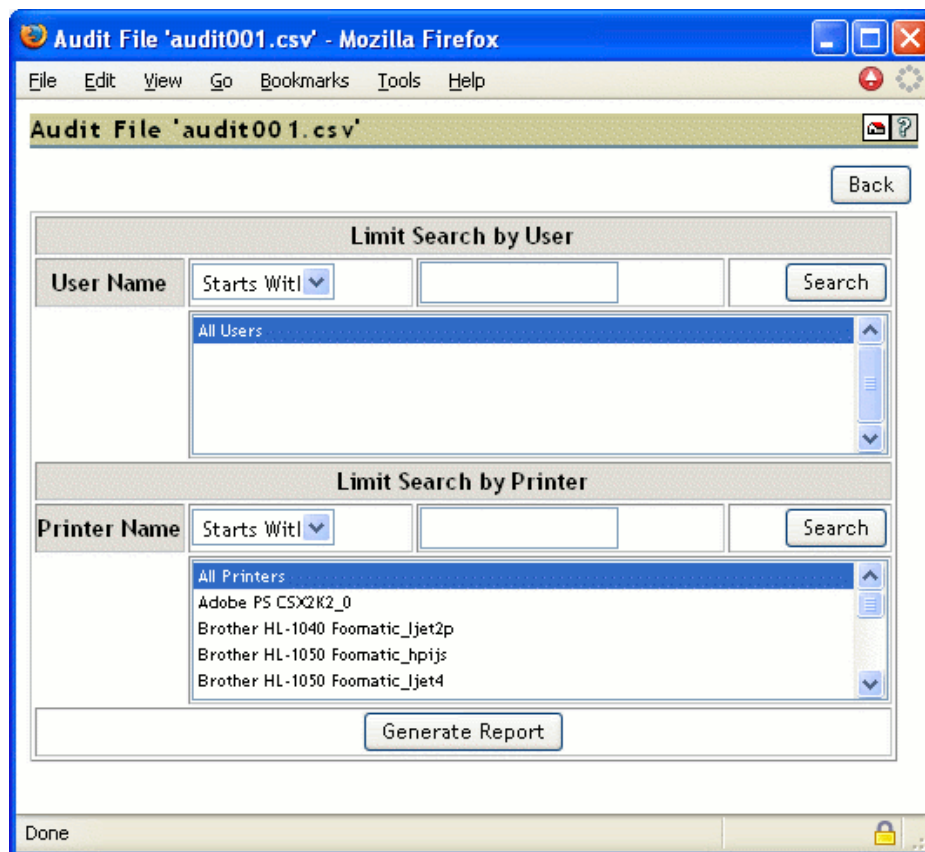
## Viewing Auditing Information

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.

There are only 250 print jobs listed at a time. To view more print jobs in the report, click *Next*.

| Report Summary            |                   |                                    |       |  |  |  |  |
|---------------------------|-------------------|------------------------------------|-------|--|--|--|--|
| iPrint Manager            | Manager.novell.us |                                    |       |  |  |  |  |
| Audit Log                 | audit001.csv      |                                    |       |  |  |  |  |
| Selected User             | All Users         | Number of Jobs Currently Displayed | 250   |  |  |  |  |
| Selected Printer          | All Printers      | Page Count for Displayed Jobs      | 44878 |  |  |  |  |
| Audit Log Entries Scanned | 250 of 139,024    |                                    |       |  |  |  |  |

Next

| Job Owner       | Printer | Time Submitted         | Time Completed         | Completion Status | Page Count | Job Size | Job Name               |
|-----------------|---------|------------------------|------------------------|-------------------|------------|----------|------------------------|
| admin.novell.us | HP      | 02/11/2005 02:59:16 PM | 02/11/2005 02:59:16 PM | Completed         | 78         | 765361   | C:\ndps\files\excel1.r |
| admin.novell.us | HP      | 02/11/2005 02:59:17 PM | 02/11/2005 02:59:17 PM | Completed         | 585        | 8642780  | C:\ndps\files\excel2.r |
| admin.novell.us | HP      | 02/11/2005 02:59:17 PM | 02/11/2005 02:59:17 PM | Completed         | 1          | 112048   | C:\ndps\files\msTestf  |
| admin.novell.us | HP      | 02/11/2005 02:59:18 PM | 02/11/2005 02:59:18 PM | Completed         | 1          | 3869871  | C:\ndps\files\photo1.  |
| admin.novell.us | HP      | 02/11/2005 02:59:19 PM | 02/11/2005 02:59:19 PM | Completed         | 1          | 6475878  | C:\ndps\files\photo2.  |

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

**Table 9-1** 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 9-2** 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:<br><br>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 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 [“Configuring Automatic Log Rotation” on page 98](#).

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 by 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.

## 9.3.7 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, which are logical representations 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.

You need 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 selected.

If another Print Manager is already loaded and you select this check box, you 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 [Section 10.1, “Setting Access Control for Your Print System,” on page 115](#).

## 9.3.8 Loading or Unloading the Print Manager

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

- ♦ [Using the Command Line \(page 100\)](#)
- ♦ [Using iManager \(page 100\)](#)

### 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 9-3** *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*.

## 9.3.9 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<sup>®</sup> 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 are lost.

---

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

5 Complete the fields:

- ♦ **Target Server:** Specify 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.

### 9.3.10 Enabling Printer Agent Redirection

Printer Agent Redirection is useful when you are decommissioning an iPrint printer and want to automatically redirect printing to a different iPrint printer without users manually deleting and reinstalling the printer. Redirection can continue even after you delete the printer agent for iPrint printers only.

Printer Agent Redirection is supported with the iPrint client for Windows v4.26 or later.

With Printer Agent Redirection enabled by entering a Printer Redirect URL, the client attempts to access the printer and is then redirected to the new printer. The client verifies that it can access the new printer before deleting the installed printer and installing the new printer.

Before implementing Printer Agent Redirection, you should be aware of the following:

- ♦ When you redirect a Printer Agent, the iPrint Printer List Web page is automatically updated to install the redirected printer. This means when a user clicks to install a printer listed from the list page, the link has been updated to install the redirected printer.

For example, you redirect a printer agent that has the name of Printer\_1\_Color to a printer called Color\_Printer. On the iPrint Printer List Web page, the user sees and clicks on Printer\_1\_Color. After the printer is installed, the printer listed in the Windows Printer Folder is Color\_Printer.

- ♦ Printers on maps are not automatically redirected. If you are using maps and you redirect the printer agent, you need to also update your map and republish it to show the newer printer agent. You should update the map before enabling Printer Agent Redirection because as soon as you enter a redirection URL, the link on the map is broken and any user clicking on the link in the map receives an error.
- ♦ If you redirect a printer agent to another printer that is also being redirected, the iPrint client attempts to install the final destination printer; however, this might cause undesired results.

For example, if you have redirected Printer\_1\_Color to Color\_Printer, and then redirect Printer\_A to Printer\_1\_Color, the iPrint client attempts to install Color\_Printer for Printer\_A.

---

**IMPORTANT:** You should enable Printer Agent Redirection before deleting a printer; otherwise, when the client accesses the Print Manager and cannot find the associated printer agent for an installed printer, the installed printer is deleted.

---

---

**WARNING:** If you are using iPrint Client Management, you should not use Printer Agent Redirection. Using Printer Agent Redirection for printers being used by iPrint Client Management can cause undesired results.

---

Instead, you should update iPrint Client Management with the desired printers.

---

## Managing Printer Agent Redirection

Before deleting printer agents from a print manager, you should enable Printer Agent Redirection for iPrint printers by entering another printer URL. By adding the URL before deleting the printer, workstations can update to the newest printer.

The Printer Agent Redirection lists include NDPS and iPrint printers. If you enable redirection for NDPS printers, then install the iPrint client on the workstations and edit the **UpgradeNDPSPrinter=** entry in the `iprint.ini` file, NDPS printers can be upgraded. However, if you delete an NDPS printer agent, redirection is discontinued.

- 1 In Novell iManager, click *iPrint > Manage Print Manager*.
- 2 Browse to and select a Print Manager.
- 3 Click *Printer Agent Redirection*.
- 4 For each printer agent you want to redirect, use the browse button to select the Printer object in eDirectory to ensure that you use the correct URL.

If the printer resides in a different tree, you can manually enter the URL using the following format: `ipp://server/ipp/pa_name` where *server* is the IP address or DNS name of the server and *pa\_name* is the printer agent.

- 5 Click *Apply*.

Each URL is validated to ensure that the format is valid and that the printer agent is available. An error is displayed when the URL cannot be validated.

## Managing Deleted Printer Agent Redirection

Each time a printer agent is deleted, it is moved to the Deleted Printer Agent Redirection list. Periodically, you should review this page and delete printers that are no longer being accessed or printers where redirection was not enabled.

- 1 In Novell iManager, click *iPrint > Manage Print Manager*.
- 2 Browse to and select a Print Manager.
- 3 Click *Printer Agent Redirection > Deleted Printer Agent Redirection*.
- 4 Select the printer agents to delete.

Using *Printer Last Accessed Time* and *Printer Deleted Time*, you can determine if users are still attempting to access a specific printer and if sufficient time has passed so that you can delete printer agents from the list.

**5** Click *Apply*.

Each URL is validated to ensure the format is valid and that the printer agent is available. An error is displayed when the URL cannot be validated.

## 9.4 Managing Printers

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

- ♦ [Section 9.4.1, “Creating Additional Printers,” on page 103](#)
- ♦ [Section 9.4.2, “Deleting Printers,” on page 104](#)
- ♦ [Section 9.4.3, “Managing Printer Agents,” on page 104](#)
- ♦ [Section 9.4.4, “Using Printer Driver Profiles,” on page 104](#)
- ♦ [Section 9.4.5, “Enabling iPrint Direct,” on page 105](#)
- ♦ [Section 9.4.6, “Managing Print Jobs,” on page 105](#)
- ♦ [Section 9.4.7, “Using Printer Banner Pages,” on page 106](#)
- ♦ [Section 9.4.8, “Modifying the Printer’s Gateway Load Commands,” on page 108](#)
- ♦ [Section 9.4.9, “Configuring LPR Printers,” on page 109](#)

### 9.4.1 Creating Additional Printers

Before creating additional printers, ensure that 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 a 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 112](#) 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.

## 9.4.2 Deleting Printers

Using iManager, you can delete existing Printer Agents. Before deleting a printer agent ensure that the agent is no longer being used by running a report on the printer or use [Printer Agent Redirection](#) to redirect the printer for a period of time before deleting it.

---

**WARNING:** Deleting a printer permanently removes the printer from the Print Manager. You cannot use Printer Agent Redirection. The printer is automatically removed from workstations the next time the workstation communicates with the Print manager.

---

- 1 In Novell iManager, click *iPrint > Delete Print Object*.
- 2 Browse to and select the objects you want to delete.
- 3 Click *OK*.

## 9.4.3 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.

## 9.4.4 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.

## 9.4.5 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 autoloading 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 by 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.
- 5 Click *OK*.

---

**NOTE:** For a detailed information on iPrint Direct, see *Technical Information Document (TID #7001343)* on the Novell Support Site ([http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=7001343&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=72035034&stateId=1%200%2010984802](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=7001343&sliceId=1&docTypeID=DT_TID_1_1&dialogID=72035034&stateId=1%200%2010984802)).

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## 9.4.6 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 Select 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 Select the check box next to the job you want to modify.
- 5 Click *Promote* to move a print job up the list.

## 9.4.7 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 107](#).

### 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 Select the check box next to each printer you want this banner associated with.  
When you select 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” on page 107](#).

### 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*.

## 9.4.8 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= <i>port_value port_specific_parameters</i> | <p>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 :<i>port_number</i> to the HOSTNAME or HOSTADDRESS. For example, 129.63.47.78:9101.</p> <p>The port value is followed by port-specific parameters. See the Port-Specific Parameters in the table below</p> |
| HOST= or HOSTADDRESS=                            | The hostname (DNS Name) or IP address of the printer.                                                                                                                                                                                                                                                                                                                                              |

| Gateway Load Parameters | Description                                                                                                                                    |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| PRINTERNAME=            | Passthrough is used for most printers. If you are printing to a UNIX printer, use a UNIX-type printer or queue name.                           |
| GETCOMMUNITYSTRING=     | Specifies the community string to be used for SNMP Get and GetNext requests.                                                                   |
| 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).                                                                                                                                                                                                                                                                                                                                                                                                        |
| SPOLL=                   | The base SNMP polling interval (in seconds). Only certain SNMP information, such as the printer's alert table and display console, is gathered at this polling interval.<br><br>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.

## 9.4.9 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 Select 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](#).

## 9.5 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.

- ♦ [Section 9.5.1, "Creating Additional Driver Stores," on page 110](#)
- ♦ [Section 9.5.2, "Understanding the Driver Store Configuration File," on page 111](#)
- ♦ [Section 9.5.3, "Changing the eDirectory Server Assignment," on page 111](#)
- ♦ [Section 9.5.4, "Loading or Unloading the Driver Store," on page 111](#)
- ♦ [Section 9.5.5, "Updating Printer Drivers," on page 112](#)
- ♦ [Section 9.5.6, "Deleting Printer Drivers," on page 112](#)

### 9.5.1 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, so you do not need to track 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.

## 9.5.2 Understanding the Driver Store Configuration File

When you create a Driver Store, a configuration file is created in `/etc/opt/novell/iprint`. The filename is `idsd.conf`. Each time you use iManager to create a Driver Store object 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/conf/idsd.conf`.

## 9.5.3 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/conf`.

---

**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.

---

## 9.5.4 Loading or Unloading the Driver Store

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

- ♦ “Using the Command Line” on page 111
- ♦ “Using iManager” on page 112

### 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 9-4** *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*.

## 9.5.5 Updating Printer Drivers

To update printer for drivers, follow these steps:

- 1 Add a new driver. For more information on adding a new driver, see [Section 3.2.2, "Adding Printer Drivers," on page 24](#)
- 2 Associate the printer to the driver. For more information on associating a printer to the driver, see [Step 3 on page 26](#).

---

**NOTE:** Only the new iprint clients will auto-update the drivers. For the existing or old iprint clients you need to install and associate the drivers explicitly.

---

## 9.5.6 Deleting Printer Drivers

To delete printer resources from 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 Select the driver you want to delete.
- 4 Click *Delete*.
- 5 Click *OK*.

## 9.6 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 base dn to this container for the AuthLDAPURL entry in `/etc/opt/novell/iprint/httpd/conf/iprint_ssl.conf`. For most installations, this is adequate because users are often distributed across containers. However, if you have multiple 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. Additional LDAP servers are separated by a space. An AuthLDAPURL entry specifying multiple LDAP servers appears like `ldaps://ldap.domain.com ldap1.domain.com/o=novell??? (objectClass=user)`

For more information about the AuthLDAPUrl, see the [AuthLDAPUrl Directive](http://httpd.apache.org/docs/2.0/mod/mod_auth_ldap.html#authldapurl) ([http://httpd.apache.org/docs/2.0/mod/mod\\_auth\\_ldap.html#authldapurl](http://httpd.apache.org/docs/2.0/mod/mod_auth_ldap.html#authldapurl)).

---



# Setting Up a Secure Printing Environment

# 10

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

- ♦ [Section 10.1, “Setting Access Control for Your Print System,” on page 115](#)
- ♦ [Section 10.2, “Using SSL/TLS for Secure Printing,” on page 118](#)

## 10.1 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:

- ♦ [Section 10.1.1, “Setting Access Control for Printers,” on page 115](#)
- ♦ [Section 10.1.2, “Setting Access Control for the Print Manager,” on page 117](#)
- ♦ [Section 10.1.3, “Setting Access Control for the Driver Store,” on page 118](#)

### 10.1.1 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.

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

- ♦ “Printer Access Control Roles” on page 116
- ♦ “Assigning Printer Access Control Roles through Printer Objects” on page 117

## 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 10-1** *Printer Access Control Roles*

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

## Assigning Printer Access Control Roles through Printer Objects

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

### 10.1.2 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” on page 117](#)
- ♦ [“Assigning the Manager Role for Print Managers” on page 117](#)

#### 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 10-2** *Print Manager Access Control Role*

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

#### 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*.

### 10.1.3 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 10-3** *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: <ul style="list-style-type: none"><li>♦ Creating, modifying, and deleting Driver Store objects</li><li>♦ Adding other managers</li><li>♦ Adding resources to the Driver Store</li></ul> |
| Public Access User | A public access user is a role assigned to all entities on the network that 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*.

## 10.2 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 to the server. Secure printing works in conjunction with the security level set for the printer. All print data between the server and the printer is not encrypted because most printers do not support encrypted data. Also, when you enable iPrint Direct, data is not encrypted between the client and the printer.

If you are using the latest iPrint Client and server software, iPrint automatically attempts to use TLS for printing on port 631. 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 non-secure and secure printing URLs use `ipp://`.

Prior to Open Enterprise Server, printer URLs were based on `http://` and `https://`. When a non-secure 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.

## 10.2.1 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.

## 10.2.2 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.

To disable this feature, see [Section 4.7.2, “Deploying iPrint Client Management,” on page 54](#).

For more information, see [“Managing Passwords for Remote iPrint Servers” on page 45](#).

## 10.2.3 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 by 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.

- ♦ [Section A.1, “iPrint Client Supported Browsers,” on page 121](#)
- ♦ [Section A.2, “Supported Browsers with the iPrint Plug-In and Novell iManager,” on page 121](#)
- ♦ [Section A.3, “Supported Browsers for the iPrint Map Designer,” on page 122](#)

## 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 Firefox 2.x.x                                               |
| Macintosh              | ♦ Safari 1.2 or later<br>♦ Safari 2.0.1 or later                      |
|                        | <b>NOTE:</b> iPrint has not been tested with Safari 3.x.              |
| Windows                | ♦ Microsoft Internet Explorer 6.0 or later<br>♦ Mozilla Firefox 2.0.x |
| Windows Vista          | ♦ Internet Explorer 7 or later                                        |

## 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 6.0 or later
- ♦ Mozilla Firefox 2.x.x

**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 Firefox 2.x.x          | Only supported using the <i>Add from System</i> button. | Only supported using the <i>Add from System</i> button. |
| Windows                | Internet Explorer 6.0 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 Firefox 2.x.x          | Not supported                                          | Not supported                                      |
| Windows | Internet Explorer 6.0 or later | Supported                                              | Supported                                          |
|         | Mozilla Firefox 2.x.x          | Not supported                                          | Not supported                                      |

## A.3 Supported Browsers for the iPrint Map Designer

The iPrint Map Designer works only with Microsoft\* Internet Explorer 6.0 or later.

# iPrint Commands and Utilities

# B

This section contains iPrint commands and utilities used on the Linux platform.

- ♦ [“iprintman\(1\)” on page 124](#)

# iprintman(1)

## Name

iprintman, iprintman - Manage iPrint Managers and Driver Stores.

## SYNTAX

This section contains iPrint commands and utilities used on the Linux platform.

```
iprintman <target> <command> <general-options> <options>
```

## DESCRIPTION

Iprintman is a management tool used to manage and configure iPrint print managers, driver stores, printers, and print jobs.

Novell iPrint is a print solution that lets users have global access to printers and a customizable view of the print environment.

## HELP

To display help about a specific target, use the following:

### Syntax

```
iprintman <target> \-h or iprintman <target> --help
```

### Example:

```
iprintman psm -h or iprintman ids --help
```

## TARGET SUMMARY

A target is the iPrint object type you want to manage and includes the target's distinguished name (DN) in LDAP format. For example, if you want to modify settings for a printer with a distinguished name `cn=colorprinter,ou=printing,o=my_company`, the command and target appear as `iprintman printer cn=colorprinter,ou=printing,o=my_company`.

### target\_type

banner

### target\_instance

<banner\_name>

### target\_type

driver

### target\_instance

<repository\_name> <driver\_name>>

**target\_type**  
ids

**target\_instance**  
<IDS\_DN>

**target\_type**  
job

**target\_instance**  
<printer\_agent\_name <JOBID>>

**target\_type**  
pool

**target\_instance**  
<pool\_name>

**target\_type**  
printer

**target\_instance**  
<printer\_agent\_name>

**target\_type**  
profile

**target\_instance**  
<profile\_name>

**target\_type**  
psm

**target\_instance**  
<print\_manager\_DN>

**target\_type**  
redirprinter

**target\_instance**  
<printer\_name>

**target\_type**  
repos

**target\_instance**  
<repository\_name>

All distinguished names (DN) should be in LDAP format. If the name of a target instance or option contains a space, use quotes, for example, "HP LaserJet 4Si".

## TARGET COMMANDS

Target commands indicate which operation to perform for the specified target. For targets whose name is a distinguished name (DN), the DN is given in LDAP format. For example, to modify settings for a PSM with a DN of `cn=manager,ou=printing,o=my_company`, `iprintman` would be invoked as follows:

```
iprintman psm cn=manager,ou=printing,o=my_company
```

## BANNER COMMANDS

### Syntax

```
iprintman banner <banner_name> <command> <options>
```

### Example

```
iprintman banner bl -m -F owner:large -F job-name -F address
```

#### **-c | --create**

Creates a printer banner on the specified server.

#### **-d | --delete**

Deletes a printer banner. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the `-f` or `--force` option.

#### **-i | --info**

Displays information about the specified printer banner.

#### **-I | --property-info**

Displays all banner properties.

#### **-l | --list**

Lists all printer banners on the server.

#### **-m | --modify**

Modifies banner properties. See **BANNER OPTIONS** for specific options.

## DRIVER COMMANDS

### Syntax

```
iprintman driver <repos_name> <driver_name> <command> <options>
```

### Example

```
iprintman driver driver_windows-nt-5_x86-32_en "HP Color
LaserJet 5500 PS" -i
```

#### **-d | --delete**

Deletes a printer driver. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the `-f` or `--force` option.

**-i | --info**

Displays driver information.

**-I | --property-info**

Lists every object property that is using the CIM class property names.

**-l | --list**

Lists drivers in a repository.

**--download**

Downloads the driver .zip file from the IDS.

**--upload**

Uploads the driver to the IDS.

## DRIVER STORE (IDS) COMMANDS

### Syntax

```
iprntman ids <ids_dn> <command> <options>
```

### Example

```
iprntman ids cn=ids1,ou=print,o=my_company -c --hostname
printing.my_company.com --use-directory-server
ds.my_company.com
```

**-c | --create**

Creates an IDS. See **IDS OPTIONS** for specific options.

**-d | --delete**

Deletes an IDS. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the **-f** or **--force** option.

**-i | --info**

Lists information about an IDS.

**-I | --property-info**

Lists every object property for the specified IDS, using the CIM class property names.

**-l | --list**

Lists IDS instances.

**-m | --modify**

Modifies properties of an IDS. See **IDS OPTIONS** for specific options.

**--start**

Starts IDS. All IDS instances on the server are started.

**--status**

Displays the status of the IDS.

**--stop**

Stops IDS. All IDS instances on the server are stopped.

**JOB COMMANDS****Syntax**

```
iprintman job <printer_name> <job_id> <command> <options>
```

**Example**

```
iprintman job HP_ColorLaserJet 3 -l
```

**-d | --delete**

Deletes a print job. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the `-f` or `--force` option.

**-i | --info**

Lists information about a print job.

**-I | --property-info**

Lists every object property for the specified print manager, using the CIM class property names.

**-l | --list**

Lists all jobs for the specified printer.

**-m | --modify**

Modifies properties of the target object or service. See **OPTIONS** for specific options.

**--pause**

Pauses the processing of a print job.

**--resume**

Resumes the processing of a print job.

**--status**

Displays the status of a print job.

**POOL COMMANDS****Syntax**

```
iprintman pool <pool_name> <command> <options>
```

**Example**

```
iprintman pool Xerox_printer_pool -c -s server1.my_company.com
```

**-c | --create**

Creates a printer pool on the server.

**-d | --delete**

Deletes a printer pool. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the `-f` or `--force` option.

**-i | --info**

Displays information about a the printer pool.

**-I | --property-info**

Displays all pool properties.

**-l | --list**

Lists all printer pools on the server.

**-m | --modify**

Modifies properties of a printer pool.

**PRINT MANAGER (PSM) COMMANDS****Syntax**

```
iprintman psm <psm_dn> <command> <options>
```

**Example**

```
iprintman psm cn=PrintManager1,ou=print,o=my_company -c --
hostname printing.my_company.com --use-ids
cn=ids,ou=print,o=my_company --use-directory-server
ds.my_company.com
```

**-c | --create**

Creates a Print Manager. See **PRINT MANAGER (PSM) OPTIONS** for specific options.

**-d | --delete**

Deletes the specified Print Manager. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the `-f` or `--force` option.

**-i | --info**

Lists information about the Print Manager.

**-I | --property-info**

Lists every object property for the specified Print Manager using the CIM class property names.

**-l | --list**

Lists the Print Manager instances.

**-m | --modify**

Modifies properties of the specified Print Manager. See **PRINT MANAGER (PSM) OPTIONS** for specific options.

**--defrag-database**

Defragments the database of the currently running Print Manager. During the defragmentation process, all print operations are stopped. When completed the Print Manager automatically restarts and print operations resume.

**--grant-manager <object\_DN>**

Adds the object as a manager to the Print Manager's access control list (ACL), explicitly granting print access to the object. If the printer is a secure printer (see **--ssl-required**), only users with rights to the printer and supervisors can access the printer. Access can be granted to User, Group, and Container objects. Granting access to a group or container allows contained users and groups to inherit access.

**--set-default**

Make this Print Manager the default manager. This is useful when you have created several Print Managers running on the same machine and want to specify one to be the default on the next load. When you load a Print Manager, it is automatically set as the default.

**--start**

Starts the default Print Manager. If the Print Manager DN is given, it starts the Print Manager corresponding to DN; otherwise, the current default Print Manager is started. When a Print Manager is started, it becomes the default Print Manager.

**--status**

Displays the Print Manager status.

**--stop**

Stops the running Print Manager. If the Print Manager DN is given, it verifies that the running Print Manager corresponds to the Print Manager DN; otherwise, the currently running Print Manager is stopped.

**PRINTER COMMANDS****Syntax**

```
iprntman printer <printer_name> <command> <options>
```

**Example**

```
iprntman printer Xerox_Color -d -s server1.my_company.com
```

**-c | --create**

Creates a Printer Agent. See **PRINTER OPTIONS** for specific options.

**-d | --delete**

Deletes the specified Printer Agent. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the **-f** or **--force** option.

**-i | --info**

Lists printer information.

**-I | --property-info**

Lists every object property for the specified Print Manager using the CIM class property names.

**-I | --list**

Lists target instances.

**-m | --modify**

Modifies properties of the printer. See **PRINTER OPTIONS** for specific options.

**--csv-import <filename>**

Creates printer agents using a .csv file. The Print Manager generates a text backup file that you can use to recreate a new Print Manager database, or you can add printers to an existing database with your own .csv file. If an error is received during execution of the .csv, any printers created up to the error remain in the database and execution of the file is halted.

**--grant-access <object\_DN>**

Adds the object as a user to the printer's access control list (ACL), explicitly granting print access to the object. If the printer is a secure printer (see **--ssl-required**), only supervisors and users with rights to the printer can access the printer. Access can be granted to User, Group, and Container objects. Granting access to a group or container allows contained users and groups to inherit access.

**--grant-operator <object\_DN>**

Adds the object as an operator to the printer's ACL list, explicitly granting Operator Role access to the object. Only supervisors and users with Operator or Manager rights to the printer can manage the printer. Access can be granted to User, Group, and Container objects. Granting access to a group or container allows contained users and groups to inherit access.

**--grant-manager <object\_DN>**

Adds the object as a manager to the printer's access ACL list, explicitly granting print access to the object. If the printer is a secure printer (see **--ssl-required**), only users with rights to the printer and supervisors can access the printer. Access can be granted to User, Group, and Container objects. Granting access to a group or container allows contained users and groups to inherit access.

**--pause-input**

Pauses printer input.

**--pause-output**

Pauses output from the printer.

**--purge-all-jobs**

Deletes all jobs queued for this printer.

**--resume-input**

Resumes printer input.

**--resume-output**

Resumes output from the printer.

**--revoke-access <object\_DN>**

Removes the object as a user from the printer's ACL list, revoking explicitly granted print access from the object.

Removing a user, group, or container from the ACL might not take away the access rights because they might also inherit access based on other permissions.

For example, suppose that the ACL contains user Bob and the group Sales, and Bob is also a member of group Sales. Revoking access from Bob is not sufficient to prohibit Bob's access to the printer since Bob still inherits rights as a member of the group Sales.

**--revoke-manager <object\_DN>**

Removes the object as a manager from the printer's ACL list, revoking explicitly granted print access from the object.

Removing a user, group, or container from the ACL might not take away the access rights because they might also inherit access based on other permissions.

For example, suppose the ACL contains user Bob and the group Sales, and Bob is also a member of group Sales. Revoking access from Bob is not sufficient to prohibit Bob's access to the printer since Bob still inherits rights as a member of the group Sales.

**--revoke-operator <object\_DN>**

Removes the object as an operator from the printer's ACL list, revoking explicitly granted printer access.

Removing a user, group, or container from the ACL might not take away the access rights because they might also inherit access based on other permissions.

For example, suppose that the ACL contains user Bob and the group Sales, and Bob is also a member of group Sales. Revoking access from Bob is not sufficient to prohibit Bob's access to the printer since Bob still inherits rights as a member of the group Sales.

**--start**

Starts the Printer Agent when it is shut down.

**--status**

Displays the printer status.

**--stop**

Shuts down the Printer Agent.

**PROFILE COMMANDS****Syntax**

```
iprntman profile <platform> <driver_name> <profile_name>
<command> <options>
```

**Example**

```
iprntman profile winxp "HP Color LaserJet 5500 PS" HP5500_A4 -i
-s server1.my_company.com
```

**-c | --create**

Creates a printer profile on the server.

**-d | --delete**

Deletes a printer profile. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the `-f` or `--force` option.

**-i | --info**

Displays information about the printer profile.

**-I | --property info**

Displays all profile properties.

**-l | --list**

Lists printer profiles on the server.

**-m | --modify**

Modifies printer profile properties.

**--download**

Download binary profile data.

## REDIRPRINTER COMMANDS

### Syntax

```
iprntman redirprinter <printer_name> <command> <options>
```

### Example

```
iprntman redirprinter HP_5500_PS HP5500_A4 -i -s
server1.my_company.com
```

**-c | --create**

Creates a redirected or deleted printer on the running Print Manager.

**-d | --delete**

Deletes a redirected or deleted printer from the Print Manager. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the `-f` or `--force` option.

**-i | --info**

Displays information about the redirected or deleted printer.

**-I | --property-info**

Displays all properties.

**-l | --list**

Lists the redirected and deleted printers on the running Print Manager.

**-m | --modify**

Modifies properties of the redirected or deleted printer.

**REPOSITORY (REPOS) COMMANDS****Syntax**

```
iprntman repos <repository_name> <command> <options>
```

**Example**

```
iprntman repos driver_windows-nt-5_x86-32_en -i -s
server1.my_company.com
```

**-d | --delete**

Deletes a REPOS. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the `-f` or `--force` option.

**-i | --info**

Lists information about the REPOS.

**-I | --property-info**

Lists every object property, using the CIM class property names.

**-l | --list**

Lists REPOS instances.

**OPTIONS**

Options modify the command specified. General Options can be used with all commands in conjunction with target specific options.

**GENERAL OPTIONS****-f | --force**

Suppresses the display of interactive confirmation prompts for the delete and other operations.

**-L | --from-linux**

Migrate from a Linux server (OES 1SP2 or later). If `-L` or `-N` option is not included, migration from a NetWare server to OES 2 Linux is the default option.

**-N | --from-netware**

Migrate from a NetWare Server. If `-L` or `-N` option is not included, migration from a NetWare server to OES 2 Linux is the default option.

**-p | --passfile <filename>**

Specifies a file containing a password for the eDirectory user performing the operation. By default, if a password is required, the user is prompted. For security purposes, ensure that your password file is not readable by other users.

**-P | --password**

Specifies the password for the eDirectory user performing the operation. Use of this option should be limited because other users can see command line options, including the password. Use `--passfile` instead.

**-r | --requested-properties <property>**

Lists the specified properties. Use the property names from `--property-info` option. For example, to display a list of printers with their current status and location, `-r "DeviceID,Status,Location"`

**-s | --server <host>**

Specifies a server host on which to perform the operation, where host is a hostname or IP address. Defaults to localhost.

**-u | --username <username>**

Specifies a username that is a CN (common name) of the eDirectory user performing the operation. For example: `\-u admin`

**-v | -vv | -vvv | -vvvv | -verbose**

Determines the level of detail to display about the execution of operations, with `-v` displaying a minimum amount of detail and `-vvvv` displaying the most detail.

**-w | --warnings**

Disables any warning messages from appearing.

**--accept-cert**

Automatically accepts any certificates when you make your first CIMOM connection.

**--debug**

Prints debug messages to a `/var/opt/novell/log/migration/iprintmig.log` file.

**--update**

This option synchronizes any changes that have occurred in the source server data with the target server. This option must be used in conjunction with the `-a` option.

**--resume**

Using this option you can resume the migration process from where it was suspended.

**--precheck**

Validates the parameters passed for the migration process and return the status without actually starting the migration.

**BANNER OPTIONS****--position <location>**

Specifies the location of banner text: top, middle, or bottom.

**-F | --field <banner\_fields>:<font\_size>**

Specifies the fields to appear on the banner and optionally the font size as small, medium, or large. The default font size is medium.

Fields that can be specified include:

Job-name, owner, address, printer, page-count, submit-time, start-printing-time, nds-full-name, nds-surname, nds-first-name, nds-email-address, nds-telephone number, nds-location, and nds-mail-stop.

## DRIVER STORE (IDS) OPTIONS

### **--hostname <hostname>**

When creating URIs for drivers and repositories associated with this IDS, this hostname is used. If not specified, it defaults to whatever is specified by --server.

Example: --server server2.my\_company.com --hostname ids.my\_company.com

### **--use-directory-server <ds\_hostname>**

The directory servers this IDS uses. The hostname can be followed by an optional port, if the directory server is running on a non-standard port. This option can be specified up to three times to designate a primary server and two backup directory servers.

Example: --use-directory-server ds1.my\_company.com use-directory-server ds2.my\_company.com

## DRIVER OPTIONS

### **--from-ids-zip <zipfile>**

For use with the --upload command. The <zipfile> is a .zip file that came directly from an iPrint Driver Store. This option is intended to facilitate scripts for IDS backup/restore or IDS synchronization.

### **--from-ppd <ppdfile>**

For use with the --upload command. The <ppdfile> is a .ppd file for Linux or Mac OS X clients.

## POOL OPTIONS

### **--add-printer <printer\_name>**

Adds the specified printer to the indicated pool.

### **--remove-printer <printer\_name>**

Removes the specified printer from the indicated pool.

## PRINT MANAGER (PSM) OPTIONS

### **--hostname <hostname>**

When creating URIs for services associated with this Print Manager, this hostname is used. If not specified, it defaults to whatever is specified by --server. You should use this option with the create (-c) and modify (-m) commands.

Example: --server server1.my\_company.com --hostname printserver.my\_company.com

**--use-ids <DN>**

Specifies the IDS that printers on this print manager will use. This option is required when creating a Print Manager.

Example: `--use-ids cn=ids,ou=print,o=my_company`

**--use-directory-server <ds\_hostname>**

The directory server this print manager uses. The hostname can be followed by an optional port, if the directory server is running on a non-standard port.

Example: `--use-directory-server ds1.my_company.com:663`

**--xml-import <filename>**

Import an XML file to create a new Print Manager database.

Example: `--xml-import print_system1.xml`

**PRINTER OPTIONS****--audit-enable <yes|no>**

Enables auditing for this printer.

**--banner <banner\_name>**

Specifies the banner you want to use for this printer.

Example: `--banner BigBanner`

**--container <container\_DN>**

Only valid on printer creation. A directory object corresponding to the printer is created with the DN `CN=<printer_name>,<container_DN>`. If this option is not used, the print manager's object container is used.

Example: `--container ou=printers,o=my_company`

**--description <description\_string>**

Set the description of the printer.

Example: `--description "Marketing color laser printer"`

**--direct-print-enabled <yes|no>**

Enables or disables iPrint Direct, which lets you print directly to the printer and bypass the iPrint Manager.

**--driver-<platform> <driver\_name>**

Set the IDS driver associated with the printer for the specified platform (`win9x`, `winnt`, `win2k`, `winxp`, `linux`, or `mac`). The *driver\_name* is the name of the driver in the iPrint Driver Store used by the iPrint Print Manager for the printer.

Example `--driver -winxp "HP 5 Si/Mx"`

**--gateway-load-string <load\_string>**

Lets you specify the gateway load string information. This load string is usually used to specify the printer's IP address. You must use the entire syntax, as shown in the example, every time this option is used. This field is required when creating a printer agent.

Example: `--gateway -load -string "iprintgw PORT=LPR  
HOSTNAME=192.168.0.100 PRINTERNAME=PASSTHROUGH"`

If you need to connect to a printer using port 9100, use `PORT=RAW`.

See `iprintgw` for options that can be passed to the gateway in the load string.

**--location <location\_string>**

Set the location string of the printer

Example: `--location "Second floor, South West corner"`

**--lpr-input-enabled <yes|no>**

Allows the printer to accept LPR print jobs.

**--profile-<platform> <profile>**

Set the printer profile you want associated with the printer for the specified platform (`win9x`, `winnt`, `win2k`, `winxp`, `linux`, or `mac`). The *profile* is the name of the profile used by the iPrint Print Manager for the printer.

Example `--profile -winxp "HP 5 Si/Mx A4paper"`

**--ssl-required <yes|no>**

Specifies whether or not Secure Sockets Layer (SSL) is required for clients to print to this printer.

## PROFILE OPTIONS

**--infile**

Binary profile data file for create or modify.

**--outfile**

Output file for download.

## REDIRECTED (REDIRPRINTER) PRINTER OPTIONS

**--time-accessed <last\_access\_time>**

Specifies the date and time a printer was last referenced by a workstation. Enter time in a format such as 25 June 2008 15:27:59. This option is used primarily for migration and disaster recovery.

**--time-deleted <deletion\_time>**

Specifies the date and time a printer was deleted. Enter time in a format such as 25 June 2008 15:27:59. This option is used primarily for migration and disaster recovery.

**--url <printer\_url>**

Specifies the location of the printer.

## EXAMPLES

### CREATING A DRIVER STORE

#### Syntax

```
iprntman ids <IDS_DN> -c --hostname <DNS_name> --use-directory-server <ds_hostname>
```

#### Example

```
iprntman ids cn=ids1,ou=print,o=my_company -c --hostname printing.my_company.com --use-directory-server ds.my_company.com
```

### CREATING A PRINT MANAGER

#### Syntax

```
iprntman psm <print_manager_DN> -c --hostname <DNS_name> --use-ids <IDS_DN> --use-directory-server <ds_hostname>
```

#### Example

```
iprntman psm cn=PrintManager1,ou=print,o=my_company -c --hostname printing.my_company.com --use-ids cn=ids,ou=print,o=my_company --use-directory-server ds.my_company.com
```

### CREATING A PRINTER

#### Syntax

```
iprntman printer <printer_agent_name> -c --container <container_DN> --gateway-load-string "iprintgw port=lpr hostaddress=<IP_address> printername=passthrough"
```

#### Example

```
iprntman printer "HP Color LaserJet 5000" -c --container ou=print,o=my_company --gateway-load-string 'iprintgw port=lpr hostaddress=192.0.34.166 printername=passthrough'
```

### LIST IDS REPOSITORIES

#### Syntax

```
iprntman repos -l
```

#### Example

```
iprntman repos -l
```

### LIST PRINTER DRIVERS IN REPOSITORY FOR WINDOWS 2000

#### Syntax

```
iprntman driver <repository_name> -l
```

### Example

```
iprntman driver driver_windows-nt-5_x86-32_en -l
```

## UPLOAD PRINTER DRIVER

### Syntax

```
iprntman driver <repository_name> <driver_name>> --upload
```

### Example

```
iprntman driver driver_windows-nt-5_x86-32_en "HP Color
LaserJet 5500 PS" --upload
```

## ASSIGN PRINT DRIVER TO PRINTER

### Syntax

```
iprntman printer <printer_agent_name> -m --driver-<platform>
<driver_name>
```

### Example

```
iprntman printer "HP LaserJet 4" -m --driver-winxp "HP LaserJet
4Si"
```

## ENABLE AUDITING AND SSL ON PRINTER

### Syntax

```
iprntman printer <printer_agent_name> -m --audit-enabled yes --
ssl-required yes
```

### Example

```
iprntman printer "HP LaserJet 4" -m --audit-enabled yes --ssl-
required yes
```

## MODIFY PRINTER LOCATION AND DESCRIPTION

### Syntax

```
iprntman printer <printer_agent_name> -m --location
<location_info> --description <description_info>
```

### Example

```
iprntman printer "HP LaserJet 4" -m --location "Next to front
desk" --description "Color printer with envelope tray"
```

## DELETE A PRINTER

### Syntax

```
iprntman printer <printer_agent_name> -d
```

### Example

```
iprntman printer "HP Color LaserJet 5000" -d
```

## SPECIFY BANNER INFORMATION

### Syntax

```
iprintman banner <banner_name> -m -F
<banner_options>:<font_size>
```

### Example

```
iprintman banner b1 -m -F owner:large -F job-name -F address
```

## DISPLAY INFORMATION ABOUT A PRINTER

### Syntax

```
iprintman printer <printer_agent_name> -i
```

### Example

```
iprintman printer "HP LaserJet 4Si" -i
```

## ASSOCIATE DRIVERS TO AN EXISTING PRINTER

### Syntax

```
iprintman printer <printer_agent_name> -m --driver-<platform>
<driver_name>
```

### Examples

```
iprintman printer printer1 -m --driver-winxp "HP LaserJet 4200
PCL 5e"
```

```
iprintman printer printer1 -m --driver-win2k "HP LaserJet 3200
Series PCL 5e"
```

```
iprintman printer printer1 -m --driver-linux "HP LaserJet 8000
Series"
```

You can list the drivers in the Driver Store using the following Linux command:

```
ll /var/opt/novell/iprint/resdir/<platform>
```

## FILES

### ~/.iprintman/known\_hosts

Contains the certificate DN and public key of trusted CIMOMs.

## Authors

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## See Also

legal(5)

For more information see the *iPrint Administration Guide for Linux* at [www.novell.com/documentation/oes2/iprint\\_lx/data/front.html](http://www.novell.com/documentation/oes2/iprint_lx/data/front.html).



# iPrint Client Version Release List



This section details the major releases of the iPrint Client.

**Table C-1** *iPrint Client 4.x 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 and 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 and NetWare 6.5 Support Pack 2                                                                                                                                                                          |
| 4.05                  | Open Enterprise Server 1 and NetWare 6.5 Support Pack 3                                                                                                                                                                          |
| 4.11                  | Open Enterprise Server Support Pack 1 and NetWare 6.5 Support Pack 4                                                                                                                                                             |
| 4.12                  | Web Release                                                                                                                                                                                                                      |
| 4.15                  | Open Enterprise Server Support Pack 2 and NetWare 6.5 Support Pack 5                                                                                                                                                             |
| 4.16                  | Web Release                                                                                                                                                                                                                      |
| 4.20                  | Web Release with <b>iPrint Client Management (iCM)</b>                                                                                                                                                                           |
| 4.26                  | NetWare 6.5 Support Pack 6                                                                                                                                                                                                       |
| 4.28                  | Web Release                                                                                                                                                                                                                      |
| 4.30                  | Web Release with fix for auto updating to OES 2                                                                                                                                                                                  |
| 4.32                  | Open Enterprise Server 2 and NetWare 6.5 Support Pack 7                                                                                                                                                                          |
| 4.34                  | Web Release. See <a href="https://secure-support.novell.com/KanisaPlatform/Publishing/623/3134385_f.SAL_Public.html">TID 3134385 (https://secure-support.novell.com/KanisaPlatform/Publishing/623/3134385_f.SAL_Public.html)</a> |
| 4.36                  | Web Release                                                                                                                                                                                                                      |
| 4.38                  | Web Release                                                                                                                                                                                                                      |

**Table C-2** *iPrint Client 5.x Releases*

| <b>iPrint Client Version</b> | <b>Release</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.02                         | Open Enterprise Server 2 and NetWare 6.5 Support Pack 7.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 5.04                         | Web Release. See <a href="http://www.novell.com/support/php/search.do?cmd=displayKC&amp;docType=kc&amp;externalId=3288691&amp;sliceId=1&amp;docTypeId=DT_TID_1_1&amp;dialogID=13182737&amp;statId=1%200%2013180385">TID 3447977</a> ( <a href="http://www.novell.com/support/php/search.do?cmd=displayKC&amp;docType=kc&amp;externalId=3288691&amp;sliceId=1&amp;docTypeId=DT_TID_1_1&amp;dialogID=13182737&amp;statId=1%200%2013180385">http://www.novell.com/support/php/search.do?cmd=displayKC&amp;docType=kc&amp;externalId=3288691&amp;sliceId=1&amp;docTypeId=DT_TID_1_1&amp;dialogID=13182737&amp;statId=1%200%2013180385</a> ) and <a href="http://www.novell.com/support/php/search.do?cmd=displayKC&amp;docType=kc&amp;externalId=3045689&amp;sliceId=2&amp;docTypeId=DT_TID_1_1&amp;dialogID=2041619&amp;statId=0%200%202039576">TID 3045689</a> ( <a href="http://www.novell.com/support/php/search.do?cmd=displayKC&amp;docType=kc&amp;externalId=3045689&amp;sliceId=2&amp;docTypeId=DT_TID_1_1&amp;dialogID=2041619&amp;statId=0%200%202039576">http://www.novell.com/support/php/search.do?cmd=displayKC&amp;docType=kc&amp;externalId=3045689&amp;sliceId=2&amp;docTypeId=DT_TID_1_1&amp;dialogID=2041619&amp;statId=0%200%202039576</a> ) |
| 5.06                         | Web Release for Vista only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 5.08                         | Web Release for Vista only, with security fixes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 5.12                         | Open Enterprise Server 2 Support Pack 1 and NetWare 6.5 Support Pack 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

# Configuring the iPrint HTML Interface

# D

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:

- ♦ [Section D.1, “iPrint Client HTML Interface Description,” on page 145](#)
- ♦ [Section D.2, “HTML Parameters,” on page 147](#)
- ♦ [Section D.3, “Supported Operation Strings,” on page 150](#)

## D.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 \(page 151\)](#) and [op-client-version-info \(page 151\)](#). 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.

### D.1.1 Internet Explorer Browser Customization

- ♦ [“HTML Script Example” on page 145](#)
- ♦ [“HTML Code Example” on page 146](#)

#### 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://192.168.1.2/ipp/lpr>
```

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

```
<PARAM NAME=target-frame VALUE=displayFrameName>
```

```
</OBJECT>
```

## D.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 \(page 147\)](#)
- ♦ [debug \(page 147\)](#)
- ♦ [error-type \(page 148\)](#)
- ♦ [file-path-name \(page 148\)](#)
- ♦ [job-list \(page 148\)](#)
- ♦ [job-list-options \(page 148\)](#)
- ♦ [persistence \(page 149\)](#)
- ♦ [printer-url \(page 149\)](#)
- ♦ [result-type \(page 149\)](#)
- ♦ [target-frame \(page 150\)](#)

### D.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
```

### D.2.2 debug

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

Example:

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

## D.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

## D.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*

## D.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

## D.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:

- ♦ **op-job-cancel** (page 151)
- ♦ **op-job-get-info** (page 151)

- ♦ [op-job-hold \(page 152\)](#)
- ♦ [op-job-release-hold \(page 152\)](#)

Example:

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

## D.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

## D.2.8 printer-url

Indicates which printer the operation should be directed to.

Example:

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

## D.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

## D.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*

## D.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 151)
- ♦ **op-client-is-printer-installed** (page 151)
- ♦ **op-client-version-info** (page 151)
- ♦ **op-job-cancel** (page 151)
- ♦ **op-job-get-info** (page 151)
- ♦ **op-job-hold** (page 152)
- ♦ **op-job-release-hold** (page 152)
- ♦ **op-printer-get-info** (page 152)
- ♦ **op-printer-get-status** (page 152)
- ♦ **op-printer-install** (page 152)
- ♦ **op-printer-list-all-jobs** (page 153)
- ♦ **op-printer-pause** (page 153)
- ♦ **op-printer-purge-jobs** (page 153)
- ♦ **op-printer-remove** (page 153)
- ♦ **op-printer-resume** (page 153)
- ♦ **op-printer-send-file** (page 154)
- ♦ **op-printer-send-test-page** (page 154)

### D.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

---

### D.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

---

### D.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

---

### D.3.4 op-job-cancel

---

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

---

### D.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, <b>job-list</b>
Supported return types:	Message box, HTML, URL, Cookie

---

## D.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, <b>job-list</b>
Supported return types:	None, Message box, HTML, URL, Cookie

---

Supported parameter is indefinite.

## D.3.7 op-job-release-hold

---

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

---

## D.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

---

## D.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

---

## D.3.10 op-printer-install

---

Description:	Installs the indicated printer to this workstation.
Required information:	Printer URL
Optional information:	<b>persistence</b>

---

---

Supported return types:	None, Message box, HTML, URL, Cookie
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---

### D.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

---

### D.3.12 op-printer-pause

---

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

---

### D.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

---

### D.3.14 op-printer-remove

---

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

---

### D.3.15 op-printer-resume

---

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

---

### D.3.16 op-printer-send-file

---

Description:	Sends a printer-ready file to this printer.
Required information:	Printer URL, <b>file-path-name</b>
Supported return types:	None, Message box, HTML, URL, Cookie

---

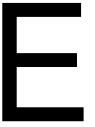
### D.3.17 op-printer-send-test-page

---

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

---

# Disabling iPrint



If you no longer want iPrint running on a server, you can disable the service by following the steps in the “**Disabling OES 2 SP1 Linux Services**” section of the *OES2 SP1: Linux Installation Guide*.

To recover disk space from a Driver Store, you can manually delete the `/resdir` located in `/var/opt/novell/iprint`.



# Troubleshooting iPrint

# F

The following are some common troubleshooting issues:

- ♦ [Section F.1, “Non-replica eDirectory server issues,” on page 157](#)
- ♦ [Section F.2, “Printer Assignment issues,” on page 158](#)
- ♦ [Section F.3, “Interactive Service dialog,” on page 158](#)
- ♦ [Section F.4, “Upgrade for a 64-bit from OES 2 to OES 2 SP1,” on page 158](#)

## F.1 Non-replica eDirectory server issues

These issues should be understood in the context of eDirectory non-replica servers. These kind of issues can occur OES 2 Linux wide, therefore, refer the OES 2 Linux troubleshooting guide or eDirectory documentation in [Novell OES 2 site \(http://www.novell.com/documentation/oes2/\)](http://www.novell.com/documentation/oes2/) for details.

### Unable to start/stop the Print Manager/Driver Store from iManager

**Explanation:** Unable to start/stop the Print Manager/Driver Store from iManager. Unable to bind to the eDirectory throws an error message with the code, FFFFD8E (-626).

**Possible Cause:** It is due to the SLP configuration of Non-replica OES server. Two modes of SLP configuration for a Non-replica OES server are:

1. SLP-DA (Directory Agent)
2. Multicast SLP

There are two possible problems for a Non-replica OES server in SLP-DA mode:

- ♦ Non-replica OES server is not able to reach the DA server.
- ♦ Replica OES server is not able to reach the DA server.

There is one possible problem for a Non-replica OES server in Multicast SLP mode:

- ♦ Firewall is ON. Therefore, multicast communication is not possible.

**Action:** In case of *Non-replica server is not able to reach the DA server*, ensure the DA server is up.

In case of *Replica server is not able to reach the DA server*, ensure the DA server is within the multicast range of replica server. If not within the multicast range mention the IP address of DA server in SLP configuration file of the replica server.

For details on SLP configuration and setting up the DA server, see [Configuration Parameters of Novell eDirectory 8.8 Administration Guide \(http://www.novell.com/documentation/edir88/edir88/data/akscitm.html\)](http://www.novell.com/documentation/edir88/edir88/data/akscitm.html).

In case of *Multicast SLP* configuration, turn the firewall OFF.

## F.2 Printer Assignment issues

These issues are specific to iPrint on Linux.

### Printer assignment fails for Linux drivers

Explanation: Uploading a driver to the driver store succeeds but assigning the driver to the printer fails from iManager.

Possible Cause: Verify whether the driver name contains two continuous blank spaces. The following two printers have been found to cause problems:

1. HP LaserJet 9000 postscript (recommended)
2. HP LaserJet 9000 MFP postscript (recommended)

---

**NOTE:** Note the two continuous blank spaces before the word *postscript* in the above two examples.

---

Action: Do not use Firefox to upload the drivers with two continuous blank spaces from a Linux client. Instead use Internet Explorer from any Windows client to upload and assign the drivers.

## F.3 Interactive Service dialog

This issue is specific to Vista and Windows 2008 platforms.

### iPrint dialog intercepted on Vista and Windows 2008

Explanation: iPrint dialog on Vista and Windows 2008, sometimes pops-up Interactive Services dialog.

Possible Cause: Vista restricts applications from being launched from the system context. However, this is fixed from iPrint side, but there might be random situations where this happens.

Action: To avoid seeing this dialog, the interactive service needs to be stopped using the following procedure:

- 1 Right-click *My Computer*.
- 2 Select *Manage*.
- 3 Select *Services*.
- 4 Double-click *Interactive Service Detection* service from the list.
- 5 Click *Stop*.

## F.4 Upgrade for a 64-bit from OES 2 to OES 2 SP1

Upgrade OES2 64-bit with all latest patches to OES 2 SP1 64-bit causes driver store issues.

## Upgrade causes iManager display error

Explanation: After upgrade is over, iManager shows both the driver store and PSM are down.

---

**NOTE:** The problem is not observed from the command prompt.

---

Possible Cause: A possible problem due to idsd and ipsmd daemons running while upgrading.

Action: Use the following procedure:

- 1** Stop the idsd and ipsmd daemons before upgrade using the `rcnovell-idsd stop` and `rcnovell-ipsmd stop` commands.
- 2** Restart the idsd and ipsmd daemons after upgrade is over using the `rcnovell-idsd start` and `rcnovell-ipsmd start` commands.



# TIDs on iPrint



This section contains the list of TIDs that are available for iPrint on Linux. These TIDs are accessible from novell support site search and is now integrated in to this document for an easy access for the online document users.

- ♦ [Section G.1, “TIDs related to NDPS,” on page 161](#)
- ♦ [Section G.2, “TID on iPrint Direct,” on page 162](#)
- ♦ [Section G.3, “TID on Print Manager/Brokers/Driver Stores,” on page 162](#)
- ♦ [Section G.4, “TIDs on iPrint Client,” on page 162](#)
- ♦ [Section G.5, “TID on Backup and Recovery,” on page 163](#)

## G.1 TIDs related to NDPS

- ♦ **Support Statement for NDPS:** [Support Statement for NDPS \(http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=7001584&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=91399257&stateId=0%200%2091401196\)](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=7001584&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399257&stateId=0%200%2091401196)
- ♦ **Command line switches for NDPS Broker:** [The command line switches for NDPS Broker \(http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=10069797&sliceId=&docTypeID=DT\\_TID\\_1\\_1&dialogID=91399097&stateId=0%200%2091393986\)](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=10069797&sliceId=&docTypeID=DT_TID_1_1&dialogID=91399097&stateId=0%200%2091393986)
- ♦ **Command line switches for NDPS Manager:** [The command line switches for NDPS Manager \(http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3536563&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=91399165&stateId=0%200%2091401063\)](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3536563&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399165&stateId=0%200%2091401063)
- ♦ **Command line switches for NDPS Gateway:** [The command line switches for NDPS Gateway \(http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3604883&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=91399180&stateId=0%200%2091401108\)](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3604883&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399180&stateId=0%200%2091401108)
- ♦ **Configure Windows 2000 to print to an NDPS printer without a Novell client:** [How do I configure Windows 2000 to print to an NDPS printer without a Novell client? \(http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=10084679&sliceId=&docTypeID=DT\\_TID\\_1\\_1&dialogID=91399207&stateId=0%200%2091401141\)](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=10084679&sliceId=&docTypeID=DT_TID_1_1&dialogID=91399207&stateId=0%200%2091401141)
- ♦ **Moving an iPrint/NDPS Manager to a new server:** [How to move an iPrint/NDPS Manager to a new server \(http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3628527&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=91399420&stateId=0%200%2091401344\)](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3628527&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399420&stateId=0%200%2091401344)
- ♦ **Rebuilding a corrupt NDPS manager database:** [How to rebuild a corrupt NDPS Manager database using PAgGen.exe \(http://www.novell.com/support/php/search.do?cmd=displayKC&docType=kc&externalId=3591389&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=2371944&stateId=0%200%202375304\)](http://www.novell.com/support/php/search.do?cmd=displayKC&docType=kc&externalId=3591389&sliceId=1&docTypeID=DT_TID_1_1&dialogID=2371944&stateId=0%200%202375304)

- ♦ **Sending print jobs to a printer attached to a windows workstation/server:** How to configure NDPS/iPrint to send print jobs to a printer attached to a Windows workstation/server ([http://www.novell.com/support/php/search.do?cmd=displayKC&docType=kc&externalId=7001923&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=2371589&stateId=0%200%202369816](http://www.novell.com/support/php/search.do?cmd=displayKC&docType=kc&externalId=7001923&sliceId=1&docTypeID=DT_TID_1_1&dialogID=2371589&stateId=0%200%202369816))
- ♦ **Load Parameter Options:** Load Parameter Options for the NDPS Gateway ([http://www.novell.com/support/php/search.do?cmd=displayKC&docType=kc&externalId=3604883&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=15276952&stateId=0%200%206287234](http://www.novell.com/support/php/search.do?cmd=displayKC&docType=kc&externalId=3604883&sliceId=1&docTypeID=DT_TID_1_1&dialogID=15276952&stateId=0%200%206287234))

## G.2 TID on iPrint Direct

- ♦ **iPrint Direct:** What is iPrint Direct? ([http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=7001343&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=91399257&stateId=0%200%2091401196](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=7001343&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399257&stateId=0%200%2091401196))

## G.3 TID on Print Manager/Brokers/Driver Stores

- ♦ **Moving a Print Manager from one Linux server to another:** Move an iPrint Print Manager from one Linux server to another ([http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3902032&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=91399420&stateId=0%200%2091401344](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3902032&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399420&stateId=0%200%2091401344))
- ♦ **Deciding the number of iPrint Brokers/Driver Stores:** Considerations in deciding the number of iPrint Brokers / Driver Stores ([http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3281477&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=91399373&stateId=0%200%2091401305](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3281477&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399373&stateId=0%200%2091401305))
- ♦ **Copying Printer Drivers between OES Driver Stores:** How to copy Printer Drivers from one OES Driver Store to another ([http://www.novell.com/support/php/search.do?cmd=displayKC&docType=kc&externalId=7000237&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=2371864&stateId=0%200%202375206](http://www.novell.com/support/php/search.do?cmd=displayKC&docType=kc&externalId=7000237&sliceId=1&docTypeID=DT_TID_1_1&dialogID=2371864&stateId=0%200%202375206))

## G.4 TIDs on iPrint Client

- ♦ **Redirect printers on clients to a different server:** Redirect the iPrint printers on clients to a different server ([http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3006726&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=91399420&stateId=0%200%2091401344](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3006726&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399420&stateId=0%200%2091401344))
- ♦ **Suppress update messages presented by the iPrint client:** How to suppress update messages ([http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3476106&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=91399420&stateId=0%200%2091401344](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3476106&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399420&stateId=0%200%2091401344))
- ♦ **Universal Printer Drivers:** iPrint and HP Universal Printer Drivers ([http://www.novell.com/support/php/search.do?cmd=displayKC&docType=kc&externalId=7001400&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=13326719&stateId=0%200%202375997](http://www.novell.com/support/php/search.do?cmd=displayKC&docType=kc&externalId=7001400&sliceId=1&docTypeID=DT_TID_1_1&dialogID=13326719&stateId=0%200%202375997))

## G.5 TID on Backup and Recovery

- ♦ **Disaster Recovery:** Restore Linux Print Manager database in disaster recovery situation ([http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3006957&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=91399815&stateId=0%200%2091401668](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3006957&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399815&stateId=0%200%2091401668))
- ♦ **Print Manager unable to read generation number:** iPrint Linux Print Manager unable to read generation number ([http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=7000933&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=91399815&stateId=0%200%2091401668](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=7000933&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399815&stateId=0%200%2091401668))
- ♦ **Missing Printer agents after Print Manager crashes:** Printer agents are missing after Linux Print Manager crashes/ segfaults ([http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=7000747&sliceId=1&docTypeID=DT\\_TID\\_1\\_1&dialogID=91399815&stateId=0%200%2091401668](http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=7000747&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399815&stateId=0%200%2091401668))



# Documentation Updates



- ♦ [Section H.1, “December 2008,” on page 165](#)

## H.1 December 2008

- ♦ Migration chapter revised and moved out to *OES 2 SP1: Migration Tool Administration Guide*.
- ♦ Guide updated for a revised Novell Standards.
- ♦ Guide edited for Client Support Matrix and other Windows related sections.
- ♦ A new TID appendix is appended to the guide.
- ♦ A new Troubleshooting appendix is appended to the guide.