

Novell NetWare 6

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IPRINT ADMINISTRATION GUIDE



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iPrint Administration Guide

Online Documentation: To access the online documentation for this and other Novell products, and to get updates, see www.novell.com/documentation.

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About This Guide

This guide describes how to install, configure, and customize iPrint. This guide is intended for network administrators and is divided into the following sections:

- ◆ Chapter 1, “Overview,” on page 5
- ◆ Chapter 2, “Setting Up iPrint on Your Server,” on page 9
- ◆ Chapter 3, “Setting Up iPrint on Client Workstations,” on page 13
- ◆ Chapter 5, “Customizing iPrint,” on page 21

Additional Documentation

For documentation on installing and running Novell® Distributed Print Services, the foundation of iPrint, see the *Novell Distributed Print Services Administration*.

Documentation Updates

The latest documentation is available at Novell documentation Web site. (<http://www.novell.com/documentation>)

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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1

Overview

iPrint lets mobile employees, business partners, and customers access printers from a variety of remote locations using existing Internet connections. Whether users are located 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.

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

Using iPrint, mobile users no longer have to contact a busy network administrator to find out a printer's name and context and the required print driver. Instead, mobile users work within a Web browser to locate nearby printers and download and install the latest print drivers. Companies can reduce communication costs by reducing the need to fax documents between offices. Instead, companies can use their existing Internet connections to print documents to remote printers.

iPrint Uses Industry Standards

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

The benefits of IPP include the following:

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

For more information about IPP, see the documents available at the Printer Working Group (<http://www.pwg.org/ipp/index.html>) Web site.

iPrint Benefits

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

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

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

iPrint Component Overview

Novell iPrint utilizes the NDPS® infrastructure. iPrint enhances the users' experience by providing a Web view of their printing environment. In addition to the NDPS, iPrint uses the following components:

- ◆ A print provider and a set of browser plug-ins.

These are installed on a user's workstation. The Novell Client™ is not required.

- ◆ Ippsrvr.nlm. This runs on the NetWare® server.

When an eDirectory Printer object is configured as an iPrint printer, the NDPS Manager automatically loads this NLM™ on the server, which generates a URL for the printer.

- ◆ A set of HTML pages.

These are provided to install the iPrint client software and printers as well as to view and manage print jobs. These pages are customizable. For more information, see Chapter 5, "Customizing iPrint," on page 21.

After setting up iPrint for your network, it easily expands to support the following scenarios.

iPrint Solutions

Printing across the Internet

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

1. John points his Web browser to the company's print URL, <http://Printing.MyCompany.Com/443/ipp>.
2. From the Web page, John selects the printer to install. The iPrint client is automatically downloaded and installed on his computer. The printer driver is also downloaded and the printer installed in his computer's Printers folder.
3. From any application on his home computer, John can now print to the company's printer.

Mobile Users

Gail is visiting her company's branch office in Paris. She needs to print a handout for an upcoming meeting. Gail 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 print driver.

1. Gail connects her laptop to the company network, clicks the iPrint link on the company's intranet Web page, and then clicks a link for the branch office she is visiting. A map of the branch office and iPrint printers displays.
2. Gail locates the office she is using and clicks the icon for the printer just outside her office.
3. The print driver is downloaded and a printer is created in the 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, Gail prints her handouts for the upcoming meeting.

Printing Instead of Faxing

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

1. Dan uses his laptop to dial in to a local Internet Service Provider.
2. Using his Web browser, Dan accesses the company's intranet Web page. Using the iPrint map pages, he locates an iPrint color printer adjacent to his boss' office.
3. After downloading and installing the print 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 see that his print job is completed.
5. Dan sends an e-mail to his boss telling him that the report is available at the printer.

What's New

The following features have been added to NetWare 6 Support Pack 3:

iPrint Map Designer

- ◆ Multiselect printer icons and simultaneous property modifications.
- ◆ Set print driver default properties such as paper size, orientation, color, collate, etc.
- ◆ Set an attribute on a printer so that after it is installed, the printer is removed from the workstation upon the next reboot.
- ◆ Obtain a list of printers from the Print Services Manager without having to authenticate.

Novell iManager

- ◆ View and manage retained print jobs
- ◆ Remove or set holds on print jobs.
- ◆ Move printer agents to a different Print Services Manager.
- ◆ Load and unload the Print Services Manager and Broker from iManager.

Additional management screens have been added to iManager such as printer settings, and editing gateway load strings.

- ◆ Display SNMP traps from the Novell Gateway.

iPrint Client

- ◆ Install printers from the command line.
- ◆ Capture LPT ports and redirect print jobs to an iPrint printer using the `icapture.exe` command or LPT Port Redirection Windows utility.
- ◆ Install printers on a Windows NT/2000/XP workstation without having PowerUser or Administrator rights.

- ◆ Set a proxy server for iPrint.
- ◆ Redesigned default page.
See http://server_IP_address_or_dns_name:631/IPP.

General iPrint Enhancements

- ◆ You can bind to network interface cards other than the primary card for the Broker and its services.
- ◆ A command line switch, */NOADVERT*, has been added to the Broker to turn off SRS advertising.
- ◆ The NDPS Manager database does an automatic backup five minutes after the creation of a Printer Agent.
- ◆ A command line switch, */NOSRS*, has been added to the NDPS Manager to turn off SRS advertising.
- ◆ You can shut down and restart a printer agent using the NDPS Manager Health Monitor in NetWare Remote Manager.
- ◆ You create reports about your print system using the NDPS Manager Health Monitor in NetWare Remote Manager.
- ◆ You must authenticate before accessing the NDPS Manager Health Monitor.
- ◆ LPT Port Redirection utility lets you capture LPT ports to iPrint printers.
- ◆ User Printers lets users who share a workstation install specific printers that only they can use.
- ◆ The Novell Gateway is the default gateway when creating a new Printer.
- ◆ You can load and unload the Broker or NDPS Manager from Novell iManager.

What's Next

- ◆ “iPrint Setup Requirements” on page 9
- ◆ “Setting Up DNS for the Print Services Manager” on page 10
- ◆ “Configuring iPrint” on page 11
- ◆ Chapter 3, “Setting Up iPrint on Client Workstations,” on page 13

2

Setting Up iPrint on Your Server

iPrint is based on the Novell® Distributed Print Services™ (NDPS®) architecture. In order to use iPrint, you must have NDPS installed and configured. If you do not have an NDPS system set up, refer to the *Novell Distributed Print Services Administration Guide* for more information.

Complete the following tasks to prepare NDPS to work with iPrint

1. Meet iPrint system setup requirements.
2. Install iPrint (if not already installed).
3. Set up DNS for the print manager.
4. Configure iPrint.

iPrint Setup Requirements

Before you set up iPrint, you must have the following:

- NDPS Broker** provides network support services. For more information, see "Creating a NDPS Brokers" in the *Novell Distributed Print Services Administration Guide*.
- Print Services Manager** provides a platform for printer agents. When IPP printing is configured for a printer, the print manager loads the IPP software, `ippsrvr.nlm`.
For more information, see "Creating a NDPS Manager" in the *Novell Distributed Print Services Administration Guide*.
- NDPS Printer Object** represents the printer and is associated to a printer agent that combines the functions previously performed by a printer, print queue, print server, and spooler.
For more information, see "Creating a NDPS Printer" in the *Novell Distributed Print Services Administration Guide*.
- Novell iManager** provides browser-based management of Novell eDirectory™. For more information, see the *Additional Resources*.

For information on Client requirements, see "Client Requirements" on page 13.

Installing iPrint

If iPrint/NDPS was installed during the NetWare® 6 installation, iPrint software components were automatically installed on the server. If iPrint was not installed during the installation, you need to install it.

- 1** From the GUI screen on the server, click Novell > Install.
- 2** (Conditional) If an entry does not exist, click Add.
If an iPrint/NDPS entry is listed, iPrint is already installed.

- 3 Insert the *NetWare 6 Products* CD into the drive.
- 4 Browse to the `product.ni` file at the root of the CD.
- 5 Follow the installation prompts to install iPrint/NDPS.

Setting Up DNS for the Print Services Manager

Prior to configuring printers for iPrint, you should configure a DNS name for each print services manager. When iPrint is enabled for a printer, a URL is generated based upon the NDPS Manager's IP address or DNS Name.

For example, if the NDPS Manager's DNS name is `Printing.MyCompany.Com` and the printer name is `Printer1`, then the URL is `ipp://Printing.MyCompany.Com/ipp/printer1`. If no DNS name is associated with the NDPS Manager, the URL would be `ipp://111.222.333.444/ipp/printer1`.

By using a DNS name, you can change an IP address without affecting a printer's URL. If a printer's URL changes, users have to delete and reinstall their printers.

To correctly enable DNS for each print services manager, you must complete the following tasks:

1. Add the DNS Name to the DNS Namer Server
2. Enable NS on the Print Services Manager

NOTE: If DNS is not set up for the print services manager and the manager is moved to another server, users will have to reinstall their iPrint printers.

If a DNS name is added to the print services manager after iPrint is set up, iPrint printers enabled before DNS will not use the DNS name until the manager is restarted.

If users install printers before the DNS name is added, their printing will work only until the IP address of the print services manager changes. Then users will have to reinstall their printers.

Adding the DNS Name to the DNS Name Server

After you enable the DNS name on the print services manager, you need to add the DNS name to your DNS name server. For more information, see the *Novell DNS/DHCP Services Administration Guide*.

Enabling DNS on the Print Manager

To configure a DNS name for the print manager, use the print services manager command line startup switch, `/dnsname=DNS_name`.

Syntax

```
ndpsm NDPS_Manager_Object_Name /dnsname=NDPS_Manager_DNS_Name
```

Example

```
ndpsm PrintManager1 /dnsname=Printing.MyCompany.Com
```

where `PrintManager1` is the print services manager name and `Printing.MyCompany.Com` is the desired DNS name.

NOTE: You need to use the DNS startup switch only once. After the startup switch is used, the NDPS Manager will remember the DNS name. To change the DNS Name, use the switch with the new DNS name.

If you do not specify an IP address or DNS name when you load the NDPS Manager, the manager uses the address stored in `sys:\etc\hostname`. If either the IP address or DNS name specified on the command line or in the `hostname` file is invalid, you will receive the following error:

```
IP Address xxx.xxx.xxx.xxx, specified at load time, is not bound.  
Program execution cannot continue normally. Press Escape to continue.
```

To resolve this error, use a valid DNS name or IP address at the system console prompt or edit the `sys:\etc\hostname` file to contain a valid address.

Configuring iPrint

With your print system setup, you can configure iPrint printers.

- ◆ “Using Novell iManager for Network Management” on page 11
- ◆ “Configuring iPrint Printers” on page 11
- ◆ “Other Management Tasks” on page 11

Using Novell iManager for Network Management

Novell iManager is the Web-based management utility used to manage iPrint. Using iManager, you can create, delete, and modify printers and other NDPS objects.

The iPrint Management plug-in for Novell iManager works only with Internet Explorer 5.5 with Service Pack 2 or later.

Configuring iPrint Printers

Complete the following steps for printers that are already set up in NDPS. To create printers to be used in iPrint, see “Creating a NDPS Printer” in the *Novell Distributed Print Services Administration Guide*.

- 1** In Novell iManager, click iPrint Management > Manage Printer.
- 2** Browse to and select the printer you want to enable IPP printing for.
- 3** Click Client Support > IPP Support.
- 4** Check the Enable IPP Access check box.

The URL that appears in the Accepted IPP URL(s) box is the URL used when the printer is created on a workstation. This is also the URL you should use when creating iPrint maps. For more information, see “Using the iPrint Map Designer” on page 21.

- 5** (Optional) For secure printing, check the Require Security check box.

For more information, see Chapter 6, “Setting Up a Secure Printing Environment,” on page 27. This requires users to authenticate to eDirectory using their usernames and passwords.

- 6** To update the printer settings, click Apply or OK.

Other Management Tasks

Disabling iPrint Services

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

- 2** Browse to and select the Printer you want to modify.
- 3** Click Client Support > IPP Support.
- 4** Uncheck the Enable IPP Access check box.
- 5** To update the printer settings, click Apply or OK.

Enabling iPrint on All Printers Simultaneously

If you have a large number of printers that you want to enable iPrint on, use this iManager task to avoid enabling iPrint on each individual Printer object.

- 1** In Novell iManager, click iPrint Management > Enable iPrint Access.
- 2** Browse to and select the print service manager you want to enable IPP printing on.
- 3** To enable all printers associated with this print services manager, check the first check box next to Enabled.

To select printers individually, check the check box next to each printer in the Enabled column.

- 4** (Optional) To enable all printers associated with this print services manager to use Secure printing, check the first check box next to Secure.

To select secure printers for specific printers, check the check box next to each printer in the Secure column.

For more information on implementing secure printing, see “Secure Printing Using SSL” on page 27.

- 5** To update the printer settings, click Apply or OK.

3

Setting Up iPrint on Client Workstations

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

iPrint Client files and printers can be installed from a Web page, or they can be distributed using ZENworks®. For more information, see "Using ZENworks to Distribute iPrint" on page 14.

This chapter helps you with the following:

- ◆ "Client Requirements" on page 13
- ◆ "Using the Default Printer Lists Generated by iPrint" on page 13
- ◆ "Creating Location-based Printing" on page 14
- ◆ "Using ZENworks to Distribute iPrint" on page 14
- ◆ "Uninstalling the Novell iPrint Client" on page 15

Client Requirements

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

- Windows 95/98/ME or Windows NT*/2000/XP
 - IMPORTANT:** To install a printer on Windows NT/2000, you must have Administrator rights or be a Power User and Administrator rights on Windows XP.
- Web browser with JavaScript* enabled and
 - ◆ Microsoft Internet Explorer 5.0 or later
 - ◆ Netscape 4.76 (iPrint is not supported on Netscape 6)

Using the Default Printer Lists Generated by iPrint

To enable users to use iPrint, you must give them the iPrint URL, which is `http://server_IP_address_or_dns_name:631/IPP`.

For example, if the DNS name is `printing.mycompany.com`, then the user would access IPP from the following URL:

`http://printing.mycompany.com:631/ipp`

If users need to print through a secure port using SSL, they should use port 443. This requires users to authenticate using their eDirectory™ usernames and passwords. Using the above example, this URL would be the following:

<https://printing.mycompany.com:443/ipp>

From a Netscape or Internet Explorer browser, users enter the URL provided. A Web page displays a listing of available printers they can install and a link to install the client software. Users should select Install iPrint client software to install the client pieces required. If they try to install a printer before installing the iPrint client software, they are prompted to install the client software first.

If you associate a printer driver with a printer being installed, the driver is automatically installed on the user's workstation. If the driver already exists, that driver is overwritten even if it is a newer driver.

After installing a printer, it is added to the user's Printer folder. Users can print to the printer by selecting it from any application. For more information on using Resource Management Systems in NDPS® to distribute and update printer drivers, see "Using Remote Printer Management" in the *Novell Distributed Print Services Administration Guide*.

Creating Location-based Printing

Location-based printing lets users select printers based on location by using a list view or a map. Using a list view, printer locations can be displayed by building, office location, eDirectory context, etc. You can configure the lists in a way that best suits the users' needs.

For more information, see "Creating Printer Lists" on page 24.

Using the iPrint Map Designer, you can create maps of printer locations by using drag-and-drop technology. Once the maps are created, they can be posted on a Web server for users to access. As users view the maps, they find a printer close to their location and then click its icon. The client software (if not yet installed) and the printer are installed on their workstation.

For more information, see "Using the iPrint Map Designer" on page 21.

Using ZENworks to Distribute iPrint

You can use ZENworks to distribute the Novell iPrint Client and printers to users' workstations. You take a snapshot of a workstation before installing the client and another snapshot after. ZENworks creates a list of files to install and makes the necessary changes to the Windows Registry.

You could also use ZENworks to install an HTML file on the users' workstations that would take them to your iPrint Web site. This would save you from having to distribute a URL to your users. Many other implementations are at your fingertips depending on your specific needs. For more information on using ZENworks, see the ZENworks online documentation (<http://www.novell.com/documentation>).

Auto-client Update

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

An `iprint.ini` file is located in `sys:\login\ippdocs` on each server where iPrint is installed. This file controls whether the user should be 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 will still see the installation program.

Using a text editor, edit the `iprint.ini` file to reflect the settings you want. Information on the different settings is contained in the file.

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

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.

By default, the Remember Password feature is enabled. To disable it, use a text editor to edit the `sys:\login\ippdocs\iprint.ini` file to reflect the settings you want. Information on the settings is contained in the file.

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

Uninstalling the Novell iPrint Client

To remove the Novell iPrint Client, use Remove Programs option in the Windows Control Panel, or use the uninstall program that is available under the Novell iPrint program group in the Start menu.

4

Advanced iPrint Features

The following iPrint features will help you to install and configure printers.

- ◆ “Using Novell iCapture LPT Port Redirector Utility” on page 17
- ◆ “Using a Proxy Server” on page 17
- ◆ “Using DOS Commands” on page 18
- ◆ “Installing User Printers” on page 19
- ◆ “Setting Printer Persistence” on page 19

Using Novell iCapture LPT Port Redirector Utility

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 NDPS Manager and Printer Agents must be up and running.

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 Close.

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

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

Using a Proxy Server

You can configure workstations to submit iPrint print jobs through a proxy server using the Proxy Server setting in iPrint Settings. Proxy servers are sometimes needed when you are trying to access network services through a firewall.

- 1** Click Start > Programs > Novell iPrint > iPrint Settings > Proxy.
- 2** Click the check box to use a proxy server, and enter the URL for the proxy server.
- 3** Click OK.

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

Using DOS Commads

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 a DOS-box command line, called from a batch files, or called from a login script.

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

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

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 status of currently captured ports and their associated printers.

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

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

or

```
icapture lpt2 p=printer1
```

To end the capture you would type the following:

```
icapture endcap l=2
```

or

```
icapture endcap lpt2
```

Using Iprnt.cmd 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 `icapture.exe` command.

Parameter	Description
<code>add</code>	Installs the specified printer.
<code>remove</code>	Removes the specified printer.
<code>default</code>	Sets the specified printer as the default.

Syntax

```
iprintcmd pirint_printer_url options
```

Example

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

```
iprintcmd http://printing.mycompany.com/ipp/Colorprinter /add /default
```

Installing User Printers

Typically, when users install an iPrint Printer on Windows NT/2000/XP, they need to have Administrator or Power User rights to install the printer and driver. User Printers allows users to install a printer without having those rights, but that printer is available only to that individual user when he logs on to Windows.

NOTE: To install the iPrint client you must have Administrator or Power User rights.

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. Using User Printers, each worker can install the printer they need but will not see printers installed by the other users.

To configure User Printers, edit the `iprint.ini` file located in the `sys:\apache2\htdocs\ippdocs` directory of the server where the iPrint html pages are installed by changing the value for the `AllowUserPrinters = entry`. The `iprint.ini` file contains information about the different possible values for this entry.

Setting Printer Persistence

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

To use Printer Persistence, you must use the iPrint Map Designer where you can specify a printer's default settings and set the persistence of a printer. The following table shows the different settings for persistence. For more information on the iPrint Map Designer, see "Creating Location-based Maps with iPrint Map Designer" on page 21.

Option	Description
persistent	Printer will not be removed.
volatile-reboot	Printer will be removed when the workstation reboots.
volatile-date-time	Printer will be removed at the indicated time. Use the numerical format of year, month, day, hour, minute. For example, 8:16 pm on March 2, 2004, would be formatted as 2002,3,12,20,16

5

Customizing iPrint

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

- ◆ “Setting Up Location-based Printing” on page 21
- ◆ “Changing Printer Driver Default Install Options” on page 25

Setting Up Location-based Printing

Using the iPrint Map Designer tool, you can quickly create a map showing printer locations. The tool lets you import floor plans that can be used to drag and drop printers to actual locations. These maps are then published on a Web server so users can install printers that are closest to their location.

Creating Location-based Maps with iPrint Map Designer

Prerequisites

- Microsoft Internet Explorer 5.5 or later
- Novell® iPrint Client installed on the workstation

Using the iPrint Map Designer

Use the iPrint Map Designer to create location-based maps using background images of your buildings. When the map is created, you must use the iPrint Map Designer to modify or update your maps. 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 21
- ◆ “Adding Printers from Different Print Service Managers” on page 22
- ◆ “Hosting Maps on a Web Server” on page 23

Creating a Map for Printing

Before creating the map, ensure the following:

- Ippsrvr.nlm must be loaded.
- All of your background images (maps) are copied to `sys:\login\ippdocs\images\maps` on the server, and any custom printer icon images are copied to `sys:\login\ippdocs\images\printers`.

A default set of printer icons is included.

These files are autodected by iPrint Map Designer at startup.

File types that can be used for background and printer icon images are JPEG, GIF, and BMP.

- 1** To start iPrint Map Designer, open `http://server_address:port/login/ippdocs/maptool.htm` where *server_address* is the server's IP address or DNS name of the server where the printer agent is running.

NOTE: Save the map to a local drive, then copy the map to `sys:\login\ippdocs`.

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

- 3** (Optional) Add a printer to the map.

- 3a** Click the printer icon and drag the printer to the desired location on the map.

- 3b** From the printer Icon field, select the type of printer and size.

Sizes range from 1 to 6, with 1 being the largest. Icons with a C indicate color printers.

- 3c** Next to the Printer List field, click the Browse icon and enter the IP address or DNS name of the server where the print services manager is running.

- 3d** From the printer list, select the printer agent you want associated with this printer icon.

If the printer is not listed, then you have not enabled IPP for the printer. See “Configuring iPrint Printers” on page 11 for more information.

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** Repeat Step 4 through Step 8 to add additional printers to your map.

- 4** (Optional) Edit a printer's information by clicking the desired printer's icon and then editing the printer information fields.

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

- 5** Click Save and save the map to `sys:\login\ippdocs`.

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

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

Adding Printers from Different Print Service Managers

You can add printers from different print services managers to the same map. First, add the printers from one print services manager. Then click the Browse icon and select a different manager.

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

Hosting Maps on a Web Server

After creating your maps, you need to post them on a Web server. Copy the contents of the \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.

Modifying Printer Driver Defaults and Printer Persistence of a Map

By editing the HTML code of the map file you create, you can specify the default settings of printers in the map.

For example, if you use a specific printer for printing 8-1/2x14 documents in duplex mode, you can set the default paper size to Legal and turn on duplexing. The following procedure shows you how to make this change:

- 1 Using an editor, open the map file you created using the iPrint Map Designer.
- 2 Scroll down the file until you find the printer you want to modify.

The printer definition code will look like the following example:

```
<!-- ipp_printer_1-->
<DIV id="ipp_printer_1" style="position:absolute;left:505;top:373;" ALIGN="center">
<A name="ipp_printer_1" href="http://print.mycompany.com:631/login/ippdocs/
ISINSTF.HTM?ippPrinterURL=ipp://print.mycompany.com/ipp/corporate-
hp4050n&onInstalled=status&onNotInstalled=install">
<IMG name="ipp_printer_1" src="images/printers/ple.gif" alt="CORPORATE-HP4050N" border=0></A>
<DIV ID="ipp_printer_1_caption"></DIV></DIV>
```

- 3 Edit the code using either or both of the following syntaxes:

```
&driver-options=parameter:value;
&persistence=parameter:value;
```

The resulting code will look like this:

```
<A name="ipp_printer_1" href="http://print.mycompany.com:631/login/ippdocs/
ISINSTF.HTM?ippPrinterURL=ipp://print.mycompany.com/ipp/corporate-
hp4050n&onInstalled=status&onNotInstalled=install&driver-
options=papersize:legal;duplex:yes;persistence=volatile-reboot">
```

- 4 Save the file.

For more information on these settings, see “Changing Printer Driver Default Install Options” on page 25 and “Setting Printer Persistence” on page 19.

Using the Keyboard with iPrint Map Designer

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

Task	Press
Move between fields	Tab
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

Creating Printer Lists

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

To view a printer's URL:

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

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

Customizing the HTML Interface

You can edit any of the HTML files provided or you can create your own to customize iPrint for your environment. The HTML files are installed in the `sys:login\ipppdocs` directory. For information on the HTML interface, see Appendix A, "Configuring the HTML Interface," on page 29.

Some examples of ways to present printers to users are located in the `sys:login\ipppdocs\examples` directory:

- ◆ Example 1 shows a fully graphical interface for locating and installing printers using standard HTML. This type of approach can also be created using the iPrint Map Designer. For more information, see "Using the iPrint Map Designer" on page 21.

Using your Web browser, view this example from
`sys:\login\ipppdocs\examples\example1\innerweb.htm`

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

Using your Web browser, view this example from
`sys:\login\ipppdocs\examples\example2\innerweb.htm`

Changing Printer Driver Default Install Options

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

To set modify the printer's default settings, you must use the iPrint Map Designer where you can specify a variety of printer settings. The following table shows the different settings and corresponding values. For more information on the iPrint Map Designer, see "Creating Location-based Maps with iPrint Map Designer" on page 21.

Printer Setting	Acceptable Parameter Values
orientation	landscape, portrait
papersize	letter, lettersmall, tabloid, ledger, legal, statement, executive, A3, A4, A4small, A5, B4, B5, folio, quarto, 10x14, 11x17, note, env_9, env_10, env_11, env_12, env_14, csheet, dsheet, esheet, env_dl, env_c4, env_c5, env_c6, env_c3, env_c65, env_b4, env_b5, env_b6, env_italy, env_monarch, env_personal, fanfold_us, fanfold_std_german, fanfold_lgl_german, iso_b4, japanese_postcard, 9x11, 10x11, 15x11, env_invite, letter_extra, legal_extra, tabloid_extra, letter_transverse, A4_extra, letter_extra_transverse, a_plus, b_plus, letter_plus, A4_plus, A4_transverse, A5_transverse, B5_transverse, A3_extra, A5_extra, B5_extra, A2, A3_transverse, A3_extra_transverse
copies	The number of copies you want printed.
color	Yes indicates the printer supports color. No or false indicates that the printer is monochrome printer.
duplex	simplex, horizontal, vertical
collate	yes or true=collate no=do not collate

6

Setting Up a Secure Printing Environment

Setting up a secure printing environment can be done on three different levels.

- ♦ **Access Control** lets you assign users to a User, Operator, or Manager role to control printers, print services managers, and brokers. For more information, see "Managing Printing Security" in the *Novell Distributed Print Services Administration Guide*.
- ♦ **Printer Security** defines how rights to a printer are determined and enforced. For more information, see "Setting Printer Security Levels in the *Novell Distributed Print Services Administration Guide*."
- ♦ **Using SSL with iPrint** requires users to authenticate before installing and printing to a printer. For more information, see "Secure Printing Using SSL" on page 27.

Secure Printing Using SSL

Secure printing takes advantage of SSL, which requires users to authenticate using their eDirectory usernames and passwords. Users authenticate once per eDirectory tree per session. The print data is encrypted, and all print communication uses port 443. Without secure printing, the printer is available to anyone inside the firewall on the network and the print data is not encrypted. Secure printing works in conjunction with the security level set for the printer.

The following table shows how access is determined, depending on the level of printer security and if secure printing is enabled or disabled.

Table 1 Effects of Printer Security

Printer Security Level	Secure Printing Disabled (No SSL)	Secure Printing Enabled (With SSL)
Low	Full access	eDirectory authentication
Medium (Default)	Users granted access as if they had been assigned the User role.	eDirectory authentication and check user's effective rights
High	Users must use SSL and authenticate to eDirectory Users might receive an error if SSL is not enabled. (See "High Security Requires User Authentication" on page 28.)	eDirectory authentication, check user's effective roles, and connection verification SSL is automatically enabled when a printer's security is changed to High when using Novell iManager.

For more information on printer security levels, see "Setting Printer Security Levels" in the *Novell Distributed Print Services Administration Guide*.

Considerations When Changing Printer Security

High Security Requires User Authentication

If you change the printer agent security level to high, the Requires Security check box (enabling SSL) on the IPP Support page of the printer's Client Support Page in Novell® iManager is enabled automatically.

NOTE: When setting printer agent security at the server console, SSL is not enabled automatically, and users might receive the following error

Error message: iPrint Client - "The request requires user authentication."

To avoid the error, ensure that the Requires Security check box is checked when a printer agent's security is changed to High. For more information, see "Enabling SSL" on page 28.

Enabling SSL Changes the Printer URL

When you check the Requires Security check box, the URL for the associated printer will change. Users who have already installed this printer will have to delete and reinstall the printer in order to use the updated URL.

Lowering Printer Security

Once a printer's security is set to High and SSL is enabled with the Requires Security check box, SSL remains enabled even if the security level is lowered. If SSL is disabled, then the URL will change and users will have to reinstall the printer.

Enabling SSL

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

A

Configuring the HTML Interface

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

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

The iPrint HTML files are located in the `SYS:\LOGIN\IPPDOCS` directory.

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” on page 34 and “op-client-version-info” on page 35. All other parameters are operation-specific or optional. Operation-specific parameters that are used out of context are ignored.

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

Internet Explorer Browser Customization

- ◆ “HTML Script Example” on page 29
- ◆ “HTML Code Example” on page 30

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 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:\src\work\bart\ipp\ieNipp\final\novipp.ocx>

  <PARAM NAME=operation VALUE=op-printer-get-status>

  <PARAM NAME=printer-url VALUE=http://100.100.100.100/ipp/lpr>

  <PARAM NAME=result-type VALUE=html>

  <PARAM NAME=target-frame VALUE=displayFrameName>

</OBJECT>

```

Netscape Browser Customization

The following defines the interface between HTML pages and the browser plug-in. The HTML element `<EMBED>` is used to invoke the Netscape plug-in (NPNIPP.DLL).

```

<EMBED TYPE=application/x-Novell-ipp

  width=100

  height=30

  operation=op-printer-get-status

  printer-url=http://1100.100.100.100/ipp/lpr

  result-type=html

  target-frame=displayFrameName

>

```

HTML Parameters

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

- ◆ call-back-url (page 31)
- ◆ debug (page 31)
- ◆ driver-options (page 31)
- ◆ error-type (page 31)

- ◆ file-path-name (page 32)
- ◆ job-list (page 32)
- ◆ job-list-options (page 32)
- ◆ persistence (page 32)
- ◆ printer-url (page 33)
- ◆ result-type (page 33)
- ◆ target-frame (page 33)

call-back-url

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

Example:

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

debug

If debug is set to True, message boxes with debug and profiling information are displayed.

Example: PARAM NAME=debug VALUE=true

driver-options

As a printer is being installed, the plug-in can optionally set some default driver options. For a list of driver options, see “Changing Printer Driver Default Install Options” on page 25.

Example:

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

error-type

Used to tell the plug-in how to report errors associated with the requested operation. The plug-in has the ability to return the errors in.

Option	Description
none	No response.
msgBox	Display results in a message box.
html	Display results as an HTML page generated by the plug-in.
cookie	Put the error information in a cookie.
url	Pass the results as a url parameter.

The plug-in defaults to the same reply mechanism that is specified in results-type if error-type is not specified.

Example:

PARAM NAME=error-type VALUE=html

file-path-name

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

Example:

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

job-list

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

Example:

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

job-list-options

When the plug-in creates the HTML for job-list, it can add buttons to allow the user to hold, resume, delete, or display information for selected jobs. This parameter is used to specify which buttons to display and support.

The following are the possible buttons:

- ◆ op-job-hold (page 35)
- ◆ op-job-hold-release (page 36)
- ◆ op-job-cancel (page 35)
- ◆ op-job-get-info (page 35)

Example:

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

persistence

Printer installation can be temporary or permanent. If not specified, persistence defaults to persistent. Persistence is used to indicate the duration the printer is to be installed for. The choices include the following:

Option	Description
persistent	Printer will not be removed.
volatile-reboot	Printer will be removed as the workstation reboots.

Option	Description
volatile-date-time	Printer will be removed at the indicated time (year, month, day, hour, minute). NOTE: This option is not currently implemented.

Examples:

PARAM NAME=persistence VALUE=volatile-reboot

PARAM NAME=persistence VALUE=volatile-date-time:2001,3,22,8,30

printer-url

Indicates which printer the operation should be directed to.

Example:

PARAM NAME= printer-url VALUE=*ipp://DNS name/ipp/printername*

result-type

Used to tell the plug-in how to report the results of the requested operation. The plug-in has the ability to return the results in one of the following ways:

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

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

Example:

PARAM NAME=result-type VALUE=html

target-frame

Used to specify the name of the frame in which to put the results and/or error information into. If the operation results type is url, the target frame will be the one reloaded with the indicated URL.

Example:

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

Supported Operations Strings

All requests to the plug-in have two required parameters. The first is operation, and the second is results-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 34)
- ◆ `op-client-is-printer-installed` (page 34)
- ◆ `op-client-version-info` (page 35)
- ◆ `op-job-cancel` (page 35)
- ◆ `op-job-get-info` (page 35)
- ◆ `op-job-hold` (page 35)
- ◆ `op-job-hold-release` (page 36)
- ◆ `op-printer-get-info` (page 36)
- ◆ `op-printer-get-status` (page 36)
- ◆ `op-printer-install` (page 36)
- ◆ `op-printer-list-all-jobs` (page 37)
- ◆ `op-printer-pause` (page 37)
- ◆ `op-printer-purge-jobs` (page 37)
- ◆ `op-printer-remove` (page 37)
- ◆ `op-printer-resume` (page 38)
- ◆ `op-printer-send-file` (page 38)
- ◆ `op-printer-send-test-page` (page 38)

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 or for any other client plug-in/HTML file compatibility issues.
Required information:	None
Supported return types:	URL, Cookie, Object

op-client-is-printer-installed

Description:	Determines if the indicated printer is installed on the workstation.
--------------	--

Required information:	Printer URL
Supported return types:	URL, Cookie, Object

op-client-version-info

Description:	Determines the version of the Novell iPrint Client files running on the workstation.
Required information:	None
Supported return types:	Cookie, URL, Object

op-job-cancel

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

op-job-get-info

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

op-job-hold

Description:	Put sa hold on the indicated jobs. A job that is printing might not be held.
Required information:	Printer URL, job-list

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

Supported parameter is indefinite.

op-job-hold-release

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

op-printer-get-info

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

op-printer-get-status

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

op-printer-install

Description:	Installs the indicated printer to this workstation.
Required information:	Printer URL

Optional information:	driver-options, persistence
Supported return types:	None, Message box, HTML, URL, Cookie

op-printer-list-all-jobs

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

op-printer-pause

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

op-printer-purge-jobs

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

op-printer-remove

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

op-printer-resume

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

op-printer-send-file

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

op-printer-send-test-page

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