

Novell NetWare® 6

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IPRINT ADMINISTRATION GUIDE



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Simplify Printing Using iPrint

iPrint is Novell's[®] next generation of printing software that lets users to print from anywhere to anywhere. Utilizing the Internet Printing Protocol standard, iPrint lets users use their Web browser to install printers on their workstations. Once installed, users can print to iPrint printers through their applications just like any other printer. These printers can be located down the hall or across the ocean.

The following chapters provide information you need to implement iPrint:

- ♦ [Chapter 1, “Understanding iPrint,” on page 9](#)
- ♦ [Chapter 2, “Setting Up iPrint on Your Server,” on page 13](#)
- ♦ [Chapter 3, “Setting Up iPrint on Client Workstations,” on page 19](#)
- ♦ [Chapter 4, “Customizing iPrint,” on page 23](#)

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

Understanding iPrint

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 print to the printer from any application on his or her desktop.

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

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

- ♦ One Net printing for global access
- ♦ Print driver download and installation
- ♦ Location-based printing
- ♦ Browser-enabled print interface
- ♦ Customizable user interface
- ♦ Secure information transfer

Using iPrint, mobile users no longer have to hunt down administrators to find out a printer's name and context and the required print driver. Instead, mobile users use 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.

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

The Novell iPrint Solution

Novell iPrint utilizes the NDPS® infrastructure, while improving the user's print experience. The Novell implementation of the Internet Printing Protocol comprises three components:

- ♦ A print provider and a set of browser plug-ins that are installed on a user's workstation. The Novell Client™ is not required.
- ♦ The IPPSRVR.NLM runs on a NetWare® server. When an NDPS printer is configured as an IPP printer, the print services manager automatically loads this NLM™ on the server.
- ♦ A set of HTML pages 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 4, "Customizing iPrint," on page 23](#).

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

Scenario 1: 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 remember how to dial into the company's network, but he has access to the Internet.

1. After the administrator has set up iPrint, he will need to enable a port on his firewall to allow access to the company's intranet from the Internet. For security, the administrator should enable port 443, which uses SSL. Port 443 requires users to authenticate using their eDirectory username and password. If a user does not have an eDirectory account, then the administrator can use the unsecured port 631.
2. John points his Web browser to the URL, `http://server_IP_address_or_DNS_name:443/ipp`.
3. From the Web page, John selects the printer to install. The iPrint client is automatically downloaded and installed on the computer. The printer driver is also downloaded and the printer installed in the workstation's Printer folder.
4. From any application on his home computer, John can now print to the company's printer.

Scenario 2: Mobile Users

Gail is visiting her company's branch office in Dallas, Texas. She needs to print a presentation for an upcoming meeting. Outside of the office she is using is a printer, but she does not know the printer's name, eDirectory context, make, model, or required print driver. Gail has used iPrint in a different branch office and she knows that a link to iPrint is available from the company's intranet Web page.

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 printer icon just outside the office door.
3. The print driver is downloaded and a printer is created in the user'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 presentation application, Gail prints her presentation for the upcoming meeting.

Scenario 3: Printing Instead of Faxing

Dan has just returned to his hotel room in Chicago after visiting with some clients. While checking his email, he is reminded that he needs to submit a color 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 additional telephone charges.

1. Using his Web browser, Dan accesses the Internet and logs in to the company's intranet. Using the iPrint map pages, he locates an iPrint color printer adjacent to his boss' office.
2. After downloading and installing the print driver, Dan uses his application to send the report to the printer.
3. 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.
4. Finally, Dan sends an e-mail to his boss telling him that the report is available at the printer.

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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.

The following sections will assist you in preparing NDPS to work with iPrint

- ♦ “Installing iPrint” on page 13
- ♦ “iPrint System Requirements” on page 14
- ♦ “Setting Up DNS for the Print Services Manager” on page 14
- ♦ “Configuring iPrint” on page 15

Installing iPrint

If you chose to install iPrint/NDPS 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 by completing the following steps.

- 1** From the GUI screen on the server, click Novell > Install.
- 2** If an iPrint/NDPS entry is listed, iPrint is already installed. If an entry does not exist, click Add.
- 3** Insert the *NetWare 6 Operating System* 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.

iPrint System Requirements

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

- ❑ **NDPS Broker:** Provides network support services. For more information, see [Creating 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 services manager loads the IPP software, IPPSRVR.NLM.

For more information, see [Creating 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 NDPS Printers](#) in the *Novell Distributed Print Services Administration Guide*.
- ❑ **iManage :** Provides browser-based management of Novell eDirectory™. For more information on iManage, see [Novell iManage Administration Guide](#).

Setting Up DNS for the Print Services Manager

Each server that is running the print services manager loads IPPSRVR.NLM when iPrint is enabled for a printer associated with that manager. Prior to configuring printers for iPrint, you should configure a DNS name for each print services manager. This lets you move the print services manager to a different server while maintaining the iPrint URLs for the associated printers; otherwise, iPrint will no longer work.

To correctly enable DNS for each print services manager, first [“Add the DNS Name to the DNS Name Server” on page 15](#) and then [“Enable DNS on the Print Services Manager” on page 15](#).

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 the DNS will not use the DNS name until the manager is restarted.

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

Enable DNS on the Print Services Manager

To configure a DNS name for the print services manager, use the print services manager startup switch.

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.

Add 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*.

Configuring iPrint

Using iManage for Network Management

iManage is a Web-based management utility to administer eDirectory objects. For information on using and configuring iManage, see the *Novell iManage Administration Guide*. Once iManage is installed and configured, you can manage iPrint. This includes the ability to create, delete, and modify printers and other NDPS objects.

The iPrint Management plug-in for iManage works only with Internet Explorer 5.5 with Service Pack 2.

If you encounter a "Page Not Found" error while running iManage, do the following:

- 1 Check that you are running Internet Explorer 5.5 with Service Pack 2 installed.
- 2 From Internet Explorer, click Tools > Internet Options > Advanced.
- 3 Uncheck Show Friendly HTTP Error Messages.

Configuring iPrint Printers

Complete the following steps for printers that are already set up in NDPS. For more information on creating an NDPS printer, see [Creating NDPS Printers](#) in the *Novell Distributed Print Services Administration Guide*.

- 1** From iManage, 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 map. For more information, see [“Using the iPrint Map Designer” on page 23](#).

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

This requires users to authenticate to eDirectory using their usernames and passwords.

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- 7** Click Apply or OK to update the printer settings.

The IPPSRVR.NLM is automatically loaded on the server where the printer's print services manager is running.

Disabling iPrint Services

- 1** From iManage, 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** Click Apply or OK to update the printer settings.

Enabling iPrint on All Printers

To enable iPrint on all printers associated with a print services manager, complete the following:

- 1** From iManage, click iPrint Management > Enable iPrint Access.
- 2** Browse to and select the print service manager you want to enable IPP printing for.
- 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 boxes next to the printers in the Enabled Column that you want iPrint enabled for.
- 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 boxes next to each printer in the Secure column.

For more information on implementing SSL, see [“Secure Printing Using SSL” on page 31](#).
- 5** Click Apply or OK to update the printer settings.

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 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 on using ZENworks, see [“Using ZENworks to Distribute iPrint” on page 21](#).

This chapter helps you with the following:

- ♦ [“Client Requirements” on page 19](#)
- ♦ [“Using the Default Printer Lists Generated by iPrint” on page 20](#)
- ♦ [“Creating Location-based Printing” on page 20](#)
- ♦ [“Using ZENworks to Distribute iPrint” on page 21](#)
- ♦ [“Uninstalling the Novell iPrint Client” on page 22](#)

Client Requirements

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

- ♦ Windows 95/98/ME or Windows NT*/2000
- ♦ Web browser with Java Script* 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, the 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 the printer from any application. For more information on using Resource Management Systems in NDPS® to distribute and update printer drivers, see [Designating Printers to Be Automatically Installed](#) 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 26](#).

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 to install and then click a printer 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 23.

Using ZENworks to Distribute iPrint

You can use ZENworks to distribute the Novell iPrint Client and printers to users’ workstations. Following the ZENworks instructions, 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 \(http://www.novell.com/documentation\)](http://www.novell.com/documentation) 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 if the user should be prompted before the updated client is installed or if the updated client should be 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 running 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 workstation 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 running 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

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 23
- ♦ “Customizing the HTML Interface” on page 27
- ♦ “Printer Availability on Workstations” on page 27
- ♦ “Printer Driver Default Install Options” on page 28

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

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. Once 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

- 1 Copy all of your background images (maps) to
SYS:LOGIN\IPPDOCS\IMAGES\MAPS on the server.

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

- 2 Do one of the following:
 - ♦ Using a mapped drive, open
SYS:LOGIN\IPPDOCS\MAPTOOL.HTM in Microsoft Internet Explorer.
 - ♦ 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.
- 3 Click Background and select an image from
SYS:LOGIN\IPPDOCS\IMAGES\MAPS.
- 4 To add a printer to the map, select the Printer icon and the printer size.
- 5 Drag and drop the printer onto the map in the design area.
- 6 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.
- 7 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 16](#) 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.

- 8** (Optional) In the Printer Caption field, enter the information to display, using Enter to parse the information onto multiple lines.
- 9** Repeat Step 4 through Step 8 and to add additional printers to your map.
- 10** To edit a printer's information, click the desired printer's icon and then edit the printer information fields.

To deselect a Printer icon while in the map, click anywhere in the design area.
- 11** 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 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. Add the printers from the first 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 the Maps on a Web Server

After creating your maps, you need to post them on a Web server. Copy the contents of the \IPPDOCS directory and its subdirectories to the Web server in order for your maps and iPrint to work properly. You can link to your maps from your company's internal Web page or send the URL out to your users.

Using the Keyboard with iPrint Map Designer

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

Table 1 **Using the Keyboard**

Task	Press
Move between fields	Tab
Insert printer icon	Insert key
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 will have to 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, do the following:

- 1** From iManage, 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\IPPDOCS directory. For information on the HTML interface, see [Appendix A, “Configuring the HTML Interface,” on page 33](#).

Some examples of ways to present printers to users are located in the SYS:LOGIN\IPPDOCS\EXAMPLES directory:

- ♦ Example 1 shows a fully graphical interface for locating and installing printers using standard HTML. This type of approach can also be created using the iPrint Map Designer. For more information, see [“Using the iPrint Map Designer” on page 23](#). Using your Web browser, view this example from
SYS:LOGIN\IPPDOCS\EXAMPLES\EXAMPLE1\INNERWEB.HTM
- ♦ Example 2 shows a lower maintenance approach for locating and installing printers using standard HTML. Using your Web browser, view this example from
SYS:LOGIN\IPPDOCS\EXAMPLES\EXAMPLE2\INNERWEB.HTM

Printer Availability on Workstations

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

Complete the following to set the persistence of a printer:

- 1** Using a text editor, open SYS:LOGIN\IPPDOCS\INST.HTM.
- 2** Edit the file by searching for "persistence=".

The setting occurs twice: once for Internet Explorer and once for Netscape browsers.
- 3** Replace the printer setting value, located after the comma (,) with *reboot*.
- 4** Save the file.

Printer Driver Default Install Options

You can change the default options for the printer driver when it is installed on the workstation. For example, you might want the printer driver default for paper size to be 8-1/2 x 11. This means every time the printer and corresponding driver is installed on a workstation, the paper size is set at 8-1/2 x 11. If this printer is being deployed in a company like a law office, you might want the printer driver to default to 8-1/2 x 14 so users will not have to change this setting when they print.

Complete the following steps to change the printer driver default settings:

- 1 Using a text editor, open SYS:\LOGIN\IPPDOCS\INST.HTM.
- 2 Edit the file by searching for *PARAM NAME=* .

The setting occurs twice: once for Internet Explorer and once for Netscape browsers.
- 3 Replace the value= setting located after the colon(:) with the value you want.

Table 2 Driver Default Setting Options

Printer Setting	Acceptable Parameter Values
Orientation	landscape, portrait
Paper size	letter, lettersmall, tabloid, ledger, legal, statement, executive, A3, A4, A4small, A5, B4, B5, folio, quarto, 10x14, 11x17, note, env_10, env_12, env_14, csheet, dsheet, esheet, env_dl, env_c5, env_c4, env_c3, env_c65, 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, A4_extra, letter_extra_transverse, a_plus, b_plus, letter_plus, A4_plus, A5_transverse, B5_transverse, A3_extra, A5_extra, B5_extra, A2, A3_transverse, A3_extra_transverse
Copies	Enter the number of copies you want printed.

Printer Setting	Acceptable Parameter Values
Color	yes=color no or false=monochrome
Duplex	simplex, horizontal, vertical
Collate	yes or true=collate no=do not collate

4 Save the file.

5

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** 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 31](#).

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 3 Effects of Printer Security with Secure Printing Enabled

Printer Security Level	Secure Printing Disabled (No SSL)	Secure Printing Enabled (With SSL)
Low	Full access	eDirectory authentication
Medium	Check of user's effective rights	eDirectory authentication and check of user's effective rights
High	Users must use SSL and authenticate to eDirectory Users will receive an error if they do not use SSL	eDirectory authentication, check user's effective rights, and connection verification

For more information on Printer Security Levels, see [Setting Printer Security Levels](#) in the *Novell Distributed Print Services Administration Guide*.

A

Configuring the HTML Interface

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

Using this information, HTML developers can 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 41 and “[op-client-version-info](#)” on page 41. 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 34
- ♦ “HTML Code Example” on page 35

HTML Script Example

The ExecuteRequest() operation 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\ieIpp\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 36)
- ♦ [debug](#) (page 36)
- ♦ [driver-options](#) (page 37)
- ♦ [error-type](#) (page 37)
- ♦ [file-path-name](#) (page 37)
- ♦ [job-list](#) (page 38)
- ♦ [job-list-options](#) (page 38)
- ♦ [persistence](#) (page 38)
- ♦ [printer-url](#) (page 39)
- ♦ [result-type](#) (page 39)
- ♦ [target-frame](#) (page 39)

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 [Table 2, “Driver Default Setting Options,” on page 28](#)

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 \(page 42\)](#)
- ♦ [op-job-hold-release \(page 42\)](#)
- ♦ [op-job-cancel \(page 41\)](#)
- ♦ [op-job-get-info \(page 42\)](#)

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.
volatile-date-time	Printer will be removed at the indicated time (year, month, day, hour, minute).

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 41)
- ♦ **op-client-is-printer-installed** (page 41)
- ♦ **op-client-version-info** (page 41)
- ♦ **op-job-cancel** (page 41)
- ♦ **op-job-get-info** (page 42)
- ♦ **op-job-hold** (page 42)
- ♦ **op-job-hold-release** (page 42)
- ♦ **op-printer-get-info** (page 43)
- ♦ **op-printer-get-status** (page 43)
- ♦ **op-printer-install** (page 43)
- ♦ **op-printer-list-all-jobs** (page 44)
- ♦ **op-printer-pause** (page 44)
- ♦ **op-printer-purge-jobs** (page 44)
- ♦ **op-printer-remove** (page 44)
- ♦ **op-printer-resume** (page 45)
- ♦ **op-printer-send-file** (page 45)
- ♦ **op-printer-send-test-page** (page 45)

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

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

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 op-printer-get-status operation is executed to provide the new printer status.
Required information:	Printer URL
Supported return types:	None, Message box, HTML, URL, Cookie

op-printer-purge-jobs

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

op-printer-remove

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

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

