

Administration Guide

Novell iPrint Appliance 1.0

September 2013

Novell.

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About This Guide

This guide describes how to install, configure, and customize Novell iPrint Appliance on your network.

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- ♦ [Chapter 2, “Installing iPrint Appliance,” on page 13](#)
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Audience

This guide is intended for Novell iPrint Appliance administrators.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation.

Documentation Updates

For the most recent version of the *Novell iPrint Appliance 1.0 Administration Guide*, and other documentation for this product, visit the [Novell iPrint Appliance 1.0 Documentation Web site \(http://www.novell.com/documentation/iprint-appliance1/\)](http://www.novell.com/documentation/iprint-appliance1/).

For information about configuring and using the mobile app, see the *iPrint Appliance User Guide*, or the *Help* section of the app.

1 Overview

- ♦ [Section 1.1, “What is Novell iPrint Appliance?,” on page 9](#)
- ♦ [Section 1.2, “Methods of Printing,” on page 9](#)
- ♦ [Section 1.3, “Document Rendering,” on page 11](#)

1.1 What is Novell iPrint Appliance?

Novell iPrint Appliance is a virtual appliance that offers cross-platform, self-service printing for the enterprise. It allows users to print to your current printers from all your desktops, laptops and mobile devices. Novell iPrint Appliance supports Active Directory and mobile identities. It scales to fit organizations of any size and provides a single solution to manage all your printing across multiple office locations.

With iPrint Appliance, you can print in multiple ways:

- ♦ Using the Novell iPrint App
- ♦ Email Printing
- ♦ Using AirPrint (iOS Devices Only)
- ♦ Using Laptops or Desktops

After configuring iPrint Appliance, you can use the Novell iPrint app to print from a mobile device. Novell iPrint submits documents for printing using the *Share* functionality on Android, and the *Open In* functionality on iOS. To submit the print job, the app uses the IPP (Internet Printing Protocol) method. If a direct network connection to iPrint Appliance is unavailable, the app switches to email printing, and uses the email client configured on the device.

NOTE: By default, email printing is not enabled on iPrint Appliance. The Novell iPrint app switches to email printing only if the administrator enables email printing.

For information about configuring and using the mobile app, see the [Novell iPrint 1.0 User Guide](#), or the *Help* section of the app.

IMPORTANT: By default, iPrint Appliance supports only PostScript printers. For non-PostScript printers, you must install the appropriate printer drivers. For more information on installing appropriate printer drivers, see [Appendix D, “Printing to a PCL Printer,” on page 97](#).

1.2 Methods of Printing

- ♦ [Section 1.2.1, “Using the Mobile App,” on page 10](#)
- ♦ [Section 1.2.2, “Using Email Printing,” on page 10](#)

- ♦ [Section 1.2.3, “Using AirPrint \(iOS Devices Only\),” on page 10](#)
- ♦ [Section 1.2.4, “Using Laptops or Desktops,” on page 11](#)

1.2.1 Using the Mobile App

The Novell iPrint app prints documents from mobile devices using the IPP (Internet Printing Protocol) method. IPP is a standard network protocol for remote printing and print management.

iPrint Appliance's print server converts documents to a printer friendly format (PostScript), and sends them to the printer for printing.

IMPORTANT: The Novell iPrint app is available on Android and iOS platforms. To download the Novell iPrint app, search for *Novell iPrint* on Google's Play Store or Apple's App Store.

1.2.2 Using Email Printing

iPrint Appliance accepts print jobs through email messages and attachments, using your existing enterprise email infrastructure.

There are two kinds of email printing:

- ♦ **Printing using the email client:** You can print documents from any device capable of sending emails. You can print emails by specifying email printing commands in the subject line of the email. You can also print documents by emailing them to your printer as attachments. For more information on email printing and commands, see [Chapter 6, “Email Printing,” on page 45](#).
- ♦ **Email printing through the app:** The Novell iPrint app uses Direct IPP printing by default. If Direct IPP printing fails, iPrint Appliance switches over to email printing as a fallback option. The Novell iPrint app generates an email, attaches the document to the email, and sends the email to iPrint Appliance. iPrint Appliance then issues the print request in the IPP format.

By default, email printing is disabled. To enable email printing, see [Section 6.1, “Enabling Email Printing,” on page 45](#).

IMPORTANT: For enhanced security, email printing to secure printers is disabled.

NOTE: It is important that iPrint Appliance has a high bandwidth connection to the mail server provided during initial configuration. An email containing large attachments can take several seconds or minutes to download, depending on the connection speed between the print server and the mail server. This can cause delays in processing the remaining emails, thereby delaying printing for subsequent documents.

1.2.3 Using AirPrint (iOS Devices Only)

AirPrint is a printing technology created by Apple for iOS devices. iOS devices can print to any AirPrint-enabled printer, wirelessly, using Apple's driverless printing architecture. iPrint Appliance takes advantage of this technology, enabling non AirPrint-enabled printers to be published as AirPrint printers over the wireless network. You can seamlessly print documents and images from

your iOS devices over the wireless network. iOS devices do not require a software download or driver installation. With just a few taps from any AirPrint-enabled iOS application (for example, Mail, Photos, Safari, and iBooks), you can print to an iPrint AirPrint-enabled printer.

For more information about AirPrint through iPrint, see [Chapter 5, “AirPrint through iPrint,”](#) on [page 39](#).

1.2.4 Using Laptops or Desktops

iPrint Appliance allows enterprise users to install printers and print documents seamlessly. Users can install printers using the iPrint URL provided by their administrator. The iPrint page displays the available printers. Users can click a printer to install the iPrint Client, download the printer’s driver, and create a printer on their workstation. Users can then print documents to the printer from any application on their desktops and laptops.

To setup iPrint Appliance for desktop and laptop printing, see the [Setting Up iPrint](#) section in the [iPrint Administration Guide](#).

To install the iPrint on client workstations, see the [Installing and Setting Up iPrint on Client Workstations](#) section in the [iPrint Administration Guide](#).

1.3 Document Rendering

iPrint Appliance strives to provide a client independent and driverless printing environment to mobile users. The iPrint Appliance print server performs the task of converting documents into print-ready formats, and printing the documents. iPrint Appliance uses an internal and an external renderer.

- ♦ [Section 1.3.1, “Internal Renderer,”](#) on [page 11](#)
- ♦ [Section 1.3.2, “External Renderer,”](#) on [page 12](#)
- ♦ [Section 1.3.3, “Supported Document Formats,”](#) on [page 12](#)

1.3.1 Internal Renderer

iPrint Appliance is bundled with LibreOffice, which is the default internal document renderer. LibreOffice supports Open Office and image formats, and provides a good quality conversion.

NOTE: LibreOffice supports a broad range of formats, beyond the officially tested formats Writer (odt), Calc (ods), Impress (odp), and all image formats. These formats include Static HTML pages, Adobe PDF, and Microsoft Office. However, printing quality varies, depending on the document complexity. We strongly recommended that you use the iPrint Windows Renderer if you intend to print Microsoft Office and Adobe PDF formats.

1.3.2 External Renderer

iPrint Windows Renderer is an external document renderer. For desktop-quality printing, iPrint Windows Renderer is highly recommended. You can download iPrint Windows Renderer from the iPrint Appliance Management Console.

iPrint Windows Renderer provides high quality rendering for Microsoft Office and PDF document formats. The renderer uses Microsoft Office and Adobe Acrobat Pro applications to convert documents to print-ready formats. The renderer converts the documents using a PostScript driver. The HP Universal Print Driver for Windows - PostScript is tested and recommended. This driver supports a broad range of devices.

NOTE: If you have printers that do not support the HP driver, you can use the drivers specific to your printer. If your printers are PCL based and do not support PostScript, you can use the PCL drivers instead.

You can download the latest version of HP Universal PostScript Print Driver for Windows 7 64-bit from [HP's drivers and software page](#).

iPrint Windows Renderer runs on a standalone Windows 7 64-bit machine, and communicates with the iPrint Appliance print server for document conversion. Although it is not a mandatory requirement for iPrint Appliance, iPrint Windows Renderer is strongly recommended for desktop quality printing.

iPrint Windows Renderer supports Microsoft Office formats such as Word, Excel, PowerPoint, and RTF, and Adobe PDF formats.

1.3.3 Supported Document Formats

iPrint Appliance supports the following document formats:

- ♦ Open Office and LibreOffice formats (Writer, Calc, and Impress)
- ♦ Microsoft Office formats (Word, Excel, PowerPoint, and RTF)
- ♦ PDF
- ♦ Image formats (jpg, gif, png, bmp)
- ♦ Text files (txt)
- ♦ Static HTML content

NOTE: Static HTML content refers to the HTML content that does not change or have dependencies on external files such as MySQL database and JavaScript.

For a comprehensive list of supported document formats, see [Appendix A, "Supported Document Formats,"](#) on page 91.

2 Installing iPrint Appliance

- ♦ [Section 2.1, “Downloading iPrint Appliance,” on page 13](#)
- ♦ [Section 2.2, “Installing iPrint Appliance,” on page 13](#)

2.1 Downloading iPrint Appliance

Download the iPrint Appliance image file from the Novell Downloads page at download.novell.com.

NOTE: The iPrint Appliance image file is available in the .ovf file format.

2.2 Installing iPrint Appliance

Before installing, see [Appendix E, “Best Practices,” on page 99](#) to ensure a seamless experience with iPrint Appliance.

- ♦ [Section 2.2.1, “System Requirements,” on page 13](#)
- ♦ [Section 2.2.2, “Installation,” on page 14](#)

2.2.1 System Requirements

iPrint Appliance works best with the virtualization software versions listed below. However, iPrint Appliance works with any virtualization software that can run the .ovf file format.

- ♦ VMware ESX 4.x, ESXi 4.x, ESXi 5.x or higher
- ♦ A VMware vSphere client 4.x or VMware vSphere client 5.x for accessing the host server and appliance for initial configuration
- ♦ VMware Workstation 9 on Windows 7 and SLES. VMware Workstation 9 is certified, however, VMware Workstation 8 works with no major issues.
- ♦ Microsoft Internet Explorer 9 or 10, or the latest version of Mozilla Firefox or Google Chrome, or Safari on Mac, for configuring and managing iPrint Appliance after installation
- ♦ IP address information to assign to iPrint Appliance, including:
 - ♦ Static IP address
 - ♦ Network mask
 - ♦ Gateway IP address
 - ♦ DNS host name associated with the IP address
 - ♦ IP address of a DNS server
- ♦ 4 GB RAM or higher is recommended

NOTE: For VMware system requirements, see [Minimum system requirements for installing ESX/ESXi](#) on the VMware support page.

2.2.2 Installation

To install iPrint Appliance:

- 1 Download the iPrint Appliance file (`iPrint.x86_64-version.ovf.zip`) to your management workstation.
- 2 Extract the `iPrint.x86_64-version.ovf.zip` file on your management workstation.
The `iPrint-<version>` folder is displayed.
- 3 In the vSphere client, click *File > Deploy OVF Template*.

NOTE: If the virtualization software you are using does not support `ovf`, you must convert the `.ovf` file to `.vmx` using the VMware OVF Tool available on the VMware site.

- 4 Browse to and select the `.ovf` file in the `iPrint-version` folder.
- 5 Click *Next*.
- 6 In the *Name* field, rename iPrint Appliance to a name of your choice, then click *Next*.
- 7 Click *Next* to accept the default for the disk format.
- 8 Click *Finish*.
 - 8a Select the virtual machine that you just created, then click *Edit virtual machine settings*.
 - 8b On the *Hardware* tab, click *Add*.
 - 8c Select *Hard Disk*, then click *Next*.
 - 8d Select *Create a new virtual disk*, then click *Next*.
 - 8e Specify the amount of hard disk space that you want to allocate, then click *Next*.
 - 8f Click *Next > Finish*.
 - 8g Click *OK*.
- 9 Increase the amount of memory that VMware allocates for iPrint Appliance. The default of 4 GB might not be sufficient except in a very limited testing environment.
 - 9a In the Virtual Machine Properties window, select *Memory*, then increase to a suitable size for your environment.
 - 9b Click *OK* to exit the Virtual Machine Properties window.

NOTE: iPrint Appliance deployment is started. Wait until the deployment is complete.

- 10 Power on the appliance (virtual machine).
- 11 Click the *Console* tab.
- 12 After the appliance is started, accept the license agreement.
The Novell iPrint Appliance Configuration window is displayed.
- 13 Specify the following network information:
Root password and confirmation: The root password for your iPrint Appliance.
Vaadmin password and confirmation: This is the preferred user to use when logging in to the appliance.
Hostname: The fully qualified DNS host name associated with the appliance's IP address. For example, `iprint.example.com`.

IP address: The static IP address for the appliance. For example, 172.17.2.3.

Network Mask: The network mask associated with the appliance's IP address. For example, 255.255.255.0.

Gateway: The IP address of the gateway on the subnet where your iPrint virtual appliance is located. For example, 172.17.2.254.

DNS Servers: The IP address of a primary DNS server for your network. For example, 172.17.1.1.

NTP Server: The IP address or DNS name of a reliable external Network Time Protocol (NTP) server. For example, time.example.com.

Region: Your local region.

Time Zone: Your local time zone.

IMPORTANT: iPrint Appliance 1.0 does not support changing the iPrint Appliance eDirectory admin password.

NOTE: Before using iPrint Appliance, ensure that a DNS server is configured on your network, and that you are using a valid DNS address during iPrint Appliance configuration.

14 Click *Next*.

15 Select the data storage location:

Hard Disk (recommended): You must add a hard disk to the virtual machine before you choose this option. If you have not already added a hard disk, click Power Off Virtual Machine, modify the virtual machine settings to add a hard disk, then power on the virtual machine.

NOTE: If you do not add a hard disk to the virtual machine, then iPrint Appliance is installed on the default partition. The default partition is `/sda`.

Remote NFS: You must export the remote directory before you choose this option.

IMPORTANT: If you want to configure iPrint Appliance using the *Remote NFS* option, you must ensure that the NFS share is mounted on OES or Netware, and configure the NFS share with the rights `rw,no_root_squash,fsid=0`.

16 (Conditional) If you selected Hard Disk in [Step 15](#), specify the following options:

Hard Drive: Select the hard drive you are using.

Create a new partition: Select this option to create a new partition.

Partition size: Specify the partition size.

Filesystem type: Specify the type of file system.

17 (Conditional) If you selected Remote NFS in [Step 15](#), specify the following options:

NFS Server Hostname: Specify the host name of the NFS server.

Remote Directory: Specify the path to the remote directory.

18 Click *Configure*.

The iPrint Appliance installation process begins. A message stating, "The system is ready for appliance configuration" is displayed. After the installation is complete, a URL and an IP address to access the iPrint Appliance Management Console is displayed. Using a Web browser, navigate to the Management Console URL.

NOTE: Ignore the WARNING message that is displayed in the command prompt.

The iPrint Appliance installation is now complete. You must configure iPrint Appliance before you can start printing. Continue with [Chapter 3, “Setting Up iPrint Appliance,” on page 17](#).

3 Setting Up iPrint Appliance

You can configure iPrint Appliance through the iPrint Appliance Management Console (Novell iPrint Appliance Administration).

- ♦ [Section 3.1, “Methods of Setting Up iPrint Appliance,” on page 17](#)
- ♦ [Section 3.2, “Creating and Configuring Printers Using the Management Console,” on page 22](#)
- ♦ [Section 3.3, “Importing Printers from an Existing OES iPrint System or iPrint Appliance,” on page 27](#)
- ♦ [Section 3.4, “Importing Users from an LDAP Source,” on page 32](#)
- ♦ [Section 3.5, “Line Printer Remote \(LPR\) Printing,” on page 32](#)
- ♦ [Section 3.6, “iPrint Appliance Configuration Complete,” on page 32](#)

3.1 Methods of Setting Up iPrint Appliance

You can set up iPrint Appliance as a new copy, or you can upgrade from an earlier version.

- 1 On a Web browser, use either the DNS name or the IP Address to access the Management Console. For example, https://server_url:9443 or <http://<serverurl>/admin>.

NOTE: Ignore the security certificate warning, and continue to the iPrint Appliance Management Console. To avoid the security warning prompt every time you access the iPrint Appliance Management Console, you can add the certificate to the trusted certificates list on your browser.

- 2 Specify `vaadmin` or `root` as the user name.
- 3 Specify the password.
The Management Console page is displayed.
- 4 Click *iPrint Appliance Configuration*.
The *iPrint Initial Configuration Wizard* window is displayed.

iPrint Initial Configuration Wizard

Is this a new appliance, or are you upgrading from an existing one?

☒ **New**

*Start up a new iPrint appliance.
Select this option if you would like this appliance to start with new configuration settings.*

☐ **Upgrade**

*Upgrade from an older iPrint appliance.
Select this option if you have already exported the configuration details from the appliance and you want to use those settings.*

Previous Next Finish

5 Select *New* or *Upgrade*, then click *Next*.

- ♦ [Section 3.1.1, “New,” on page 18](#)
- ♦ [Section 3.1.2, “Upgrade,” on page 20](#)

3.1.1 New

1 Specify the following information:

Table 3-1 iPrint Initial Configuration Wizard

General	<p>Authentication Realm: Specify the authentication domain.</p> <p>DNS for Print Manager: Specify the DNS name in the format displayed in the box. It is recommended that you do not use the DNS name of iPrint Appliance. Specify a DNS name that follows the Print Manager. This provides the flexibility to move the Print Manager to a different server. The DNS name is also known as a CNAME record. It is a DNS name tied to a service, rather than a server. The DNS name must resolve to the IP address of the Appliance. If you choose to specify a CNAME record, ensure that the chosen name resolves to the IP address of iPrint Appliance.</p>
---------	---

Embedded Data Store

Administrator Username: The administrator account user name is pre-populated in the following format: `cn=admin,o=iPrintAppliance`. This field is not editable.

Administrator Password: Specify the password for the administrator account. Administrator password is the eDirectory administrator Password. It is used for eDirectory and iManager.

Re-type Password: Specify the password again to confirm.

Driver Store

Local: If you want to use a local Driver Store, select *Local*. You can manage the Local Driver Store using iManager.

Remote: If you have an existing Driver Store configured with another iPrint Appliance or OES server, you can use that Driver Store by selecting the *Remote* option, then specifying the *DNS Name/Address, Username* and *Password* of the server containing the Driver Store.

IMPORTANT: You can setup the Remote Driver Store only during the initial configuration of iPrint Appliance.

NOTE: Specify the credentials of the root account of the server where the Driver Store resides.

NOTE: If you configure a Remote Driver Store, you cannot manage it through the iPrint Appliance iManager.

iPrint Initial Configuration Wizard

General

Authentication Realm:

DNS for Print Manager:

Embedded Data Store

Administrator Username:

Administrator Password:

Re-type Password:

Driver Store

☒ Local

☐ Remote (applies to all drivers)

DNS Name/Address:

Username:

Password:

Previous Next Finish

2 Click *Finish*.

After configuring iPrint Appliance, you must create printers. You can create printers using the Management Console. If you have an existing iPrint Appliance or OES iPrint system, you can also import printers. To create printers, see [Section 3.2, “Creating and Configuring Printers Using the Management Console,” on page 22](#).

3.1.2 Upgrade

You can use the Upgrade option in two scenarios:

- Upgrading iPrint Appliance from an earlier version
- Importing the configuration settings from an existing copy of iPrint Appliance

When you select the *Upgrade* option, you are prompted for the configuration file `iprintconfig.zip`. To create a configuration file, you must export the configuration information from an existing copy of iPrint Appliance.

IMPORTANT: If you want to use an external disk to upgrade iPrint Appliance, you must add the virtual machine hard disk of the older version of iPrint Appliance to the new version, navigate to the DataStore location, then select the vmdk file of the older version of iPrint Appliance.

Exporting the Configuration File

- 1 On a Web browser, use either the DNS name or the IP Address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.

NOTE: Ignore the security certificate warning, and continue to the iPrint Appliance Management Console.

- 2 Specify `vaadmin` or `root` as the user name.
- 3 Specify the password.
The Management Console page is displayed.
- 4 Click the *iPrint Appliance Configuration* icon.
- 5 Under *Administration*, click *Export Configuration*.
- 6 Specify the *eDirectory administrator Password*, then click *Export*.

NOTE: *eDirectory administrator Password* is the password that you use for the administrator account of iPrint Appliance when using iManager.

The `iprintconfig.zip` file is created. This is the backup file. The backup file contains the configuration information.

NOTE: Log files are not backed up when exporting the configuration file.

Upgrading iPrint Appliance

When upgrading to a new version of iPrint Appliance from an older version, you must ensure that the newly deployed version of iPrint Appliance has the same network configuration, passwords, and time zone as that of the older version of iPrint Appliance from which you exported the `iprintconfig.zip` configuration file.

- 1 On a Web browser, use either the DNS name or the IP Address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.

NOTE: Ignore the security certificate warning, and continue to the iPrint Appliance Management Console.

- 2 Specify `vaadmin` or `root` as the user name.
- 3 Specify the password.
The Management Console page is displayed.
- 4 Click *iPrint Appliance Configuration*.
The *iPrint Initial Configuration Wizard* window is displayed.
- 5 Select *Upgrade*, then click *Next*.
- 6 In the *File* option, click *Choose File*, then select the configuration file exported from a previous copy of iPrint Appliance.

iPrint Initial Configuration Wizard

Browse for, and select the configuration file exported from an older iPrint appliance (i.e. iprintconfig.zip). You must provide the same password for the eDirectory administrator (cn=admin,o=iPrintappliance) that was used when the zip file was created.

File: Choose File No file chosen

eDirectory Password:

Previous Next Finish

- 7 Specify the *eDirectory Password*.

NOTE: *eDirectory Password* is the password that you specified when exporting the configuration file from the previous copy of iPrint Appliance.


- 8 Click *Finish*.

NOTE: After upgrading iPrint Appliance, you must copy the license file from the older version of iPrint Appliance to the newly installed version. For information on updating your license, see [Chapter 9, "License Information," on page 69](#).

3.2 Creating and Configuring Printers Using the Management Console

Before configuring the printer, you must create printers on iPrint Appliance by using iManager.

3.2.1 Creating Printers

- 1 On the iPrint Appliance Management Console page, select the  *iPrint Printer Configuration (iManager)* tool to connect to iManager.
- 2 Log in to Novell iManager using the eDirectory admin credentials of iPrint Appliance.

NOTE: Ignore the security certificate warning, and continue to the iPrint Appliance Management Console. If you add the certificate to the trusted certificates list, the security warning is not displayed.

- 3 Click *iPrint > Create Printer*.
- 4 Configure the iManager security certificate. To create a printer on iPrint Appliance, you must accept the security certificate for the first time.
 - 4a When you specify values in the Create Printer page for the first time, the values are ignored. To accept the security certificate, fill in the required fields with the first printer that you want to create, then click *Next*.
 - 4b Click *iPrint Certificate Manager* when an error is generated.

- 4c Select the *Trust the above certificate* option, then click *OK*.
- 4d Click *OK* to complete the security certificate configuration.
- 5 Click *iPrint > Create Printer*.
- 6 Specify the Target printer details.

Printer Name: Defines the label by which the new printer is identified. You can include uppercase and lowercase letters, numbers, spaces, and underscore in the label. Do not use any other characters.

Container Name: The eDirectory container where the printer reference resides. By default, the value is "iPrintAppliance". We do not recommend changing the default value.

Print Manager name: The name of the Print Manager that handles the incoming print jobs.

DNS name or IP address: The IP address of a printer uniquely identifies it on the network and allows other networked machines to communicate with it. A DNS name can also be applied to the printer, which can be translated into the printer's IP address.

Specify the IP address (v4) or the DNS name of the target printer.

Location: Indicates the printer's location. The value of this field is displayed when selecting a printer.

Description: Describes the printer. The value of this field is displayed when selecting a printer.

LPR Printer Name: Specify an LPR printer name. If the LPR protocol is selected, other optional parameters can also be specified. With most modern printers, the name can be set to PASSTHROUGH. With some older printers (1990's & prior), there might be a different printer name.

RAW Port Number: If the RAW protocol is selected, a port number is required. Most printers are configured, by default, to use port 9100 for RAW protocol communications.

iPrint Appliance supports printer communications using either the Line Printer Remote (LPR) or RAW protocols.

The LPR protocol is the most common printing protocol and is generally more flexible than the RAW protocol. A printer that supports the LPR protocol is sometimes referred to as a TCP/IP printer. The LPR protocol has limited error reporting capabilities, which is often limited to "Printer Error" with no details.

The RAW protocol is often the default protocol on non-Windows systems. Most printers that support the RAW protocol use port 9100. The LPR protocol can generally be substituted for the RAW protocol if the RAW protocol does not respond to a print job.

- 7 Click *Next*.
- 8 Specify the drivers for the printer.

iPrint Appliance supports both driver and driverless printing. For mobile device printing, drivers are not required. The selectable drivers for each operating system are available in the Novell iPrint Appliance Driver Store.
- 9 To re-edit the printer-specific options after the new printer has been created, click *Modify*. To create another printer, click *Repeat Task*. To continue, click *OK*.

NOTE: In iManager, you might see a *Partition and Replicas* option. This feature is not required for iPrint Appliance, so it is not supported. We recommend that you do not use it on the iPrint Appliance eDirectory.

IMPORTANT: In iManager, do not create or delete Print Manager objects. Always use the default Print Manager object.

For more information on managing your print system, including creating and deleting printers, managing Printer Agents, and creating Printer Driver Profiles using iManager, see the [Managing Printers](#) section in the [iPrint Administration Guide](#).

3.2.2 Creating Secure Printers

With iPrint Appliance, you can set access controls for your print system, and also use SSL/TLS to secure your printing environment. For more information, see the [Setting Up a Secure Printing Environment](#) section in the [iPrint Administration Guide](#).

3.2.3 Configuring Printers

After creating printers, you must configure them using the iPrint Management Console.

- 1 On a Web browser, use either the DNS name or the IP Address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.

NOTE: Ignore the security certificate warning, and continue to the iPrint Appliance Management Console. If you add the certificate to the trusted certificates list, the security warning is not displayed.

- 2 In the Novell iPrint Appliance Administration login page, enter the user name as `vaadmin`, enter the password that you specified for `vaadmin`, then click *Log in*.
- 3 Click the *iPrint Appliance Configuration* icon.
- 4 Under *Administration*, click *Printers*.

The Printers screen lists all printers created with iManager that are currently managed by iPrint Appliance. You can enable the printers for Mobile, AirPrint, and Email printing for iPrint Appliance, as well as the desktop email client.

Novell iPrint Appliance

root | Home | Logout

Administration

Mobile Configuration

Printers

Renderers

Services

Export Configuration








LDAP Import

License

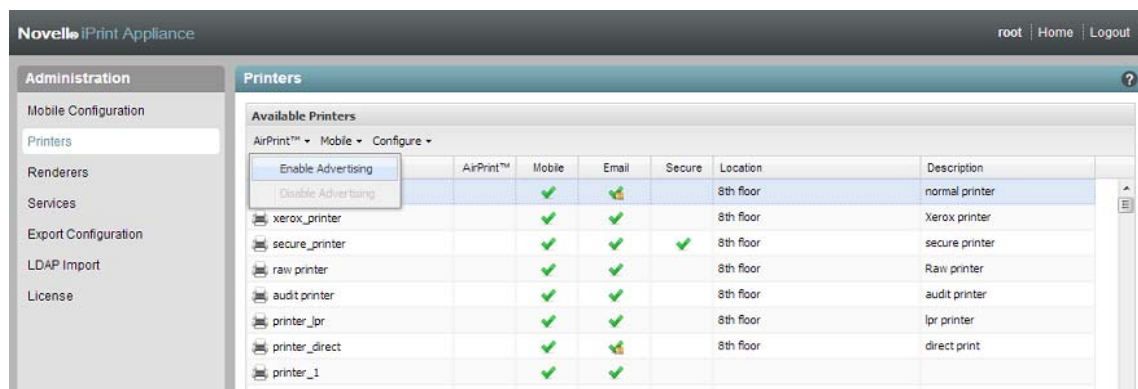
Printers

Available Printers

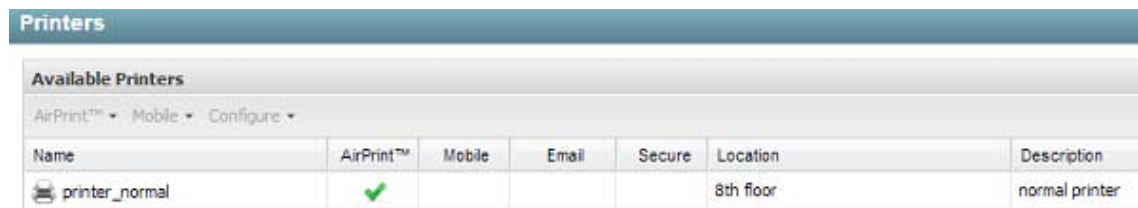
AirPrint™ Mobile Configure

Name	AirPrint™	Mobile	Email	Secure	Location	Description
 printer_normal					8th floor	normal printer
 xerox_printer					8th floor	Xerox printer
 secure_printer					8th floor	secure printer
 raw_printer					8th floor	Raw printer
 audit_printer					8th floor	audit printer
 printer_lpr					8th floor	lpr printer
 printer_direct					8th floor	direct print

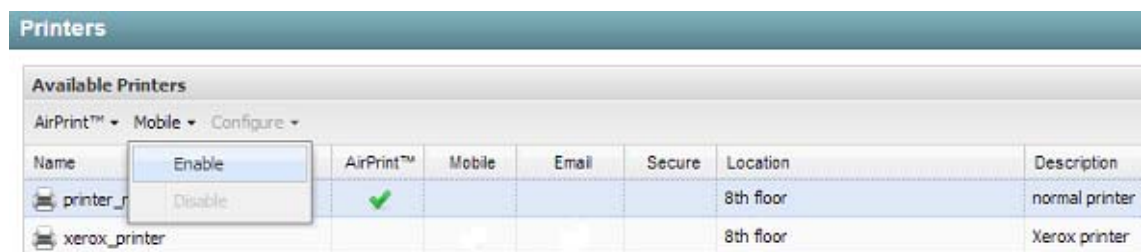
- 5 Select the printer that you want to configure. The *AirPrint*, *Mobile* and *Configure* drop-down menus are activated. You can choose multiple printers at a time by holding the *Ctrl* key.
- 6 To configure the selected printer(s) for AirPrint, click the *AirPrint* drop-down menu, then click *Enable Advertising*.



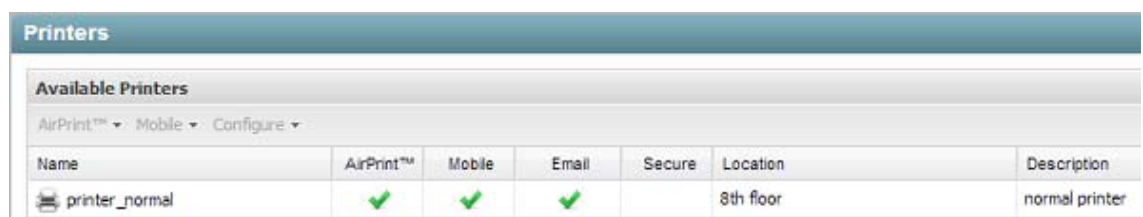
The selected printer is now advertised by the Novell iPrint Mobile Appliance.



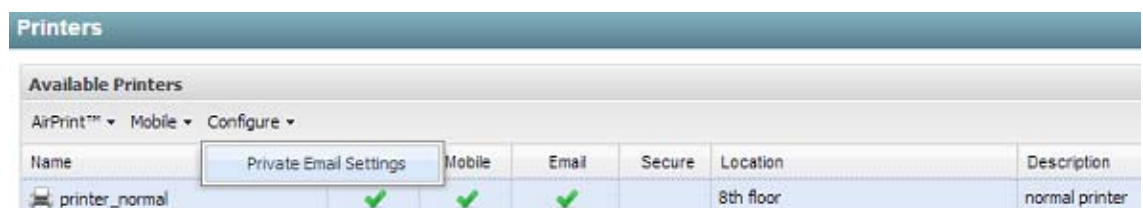
- To configure the printers for Mobile and Email printing, click the *Mobile* drop-down menu, then select *Enable*.



- The selected printer is enabled for Mobile and Email printing.



- Each printer managed by iPrint Appliance can be configured for a private email account. To configure the selected printer with a private email account, select a printer, click the *Configure* drop-down menu, then click *Private Email Settings*.



- 10 Select *Enable private email-based printing*, then specify the *Account* and *Server* information.

Private Email Settings

Warning. Changing values on this page will restart the Mobile Server which can cause existing print job loss.

☒ Enable private email-based printing

Account

Email Address: sampleprinter@novell.com

Username: sampleprinter

Password:

Retype Password:

Server

Incoming Mail Server: imap.novell.com

Outgoing Mail Server: smtp.novell.com

Access Method: IMAP

OK Cancel

Account

- ♦ **Email Address:** Specify the full email address of the mailbox to be polled for the print jobs. When an email-based job arrives, the print job is processed to the printer. For example, iprint@example.com.
- ♦ **Username:** Specify the user name to be used by iPrint Appliance to log in to the email server to access the private printer email account. For example, iprint.
- ♦ **Password:** Specify the password for iPrint Appliance to log in to the email server to access the private printer email account.
- ♦ **Retype Password:** Confirm the account password.

Server


- ♦ **Incoming Mail Server:** Specify the address of the incoming email server for the email account. For example, imap.example.com.
- ♦ **Outgoing Mail Server:** Specify the address of the outgoing email server for the email account. For example, smtp.example.com. Your email server must support the SMTP protocol.
- ♦ **Access Method:** iPrint Appliance supports two different protocols to poll for incoming print jobs. Select POP or IMAP depending on the protocol your email server supports.

When configured for private email printing, iPrint Appliance becomes a client to an email server. The printer's account inbox is polled for incoming print jobs that are routed to the printer.

NOTE: Ensure that the private email account is established and functional before associating it with a printer.

- 11 Click OK.

The selected printer is now accessible for email-based printing, using the private email address.

Printers						
Available Printers						
AirPrint™ ▾ Mobile ▾ Configure ▾						
Name	AirPrint™	Mobile	Email	Secure	Location	Description
 printer_direct		✓	✓		8th floor	direct print

3.3 Importing Printers from an Existing OES iPrint System or iPrint Appliance

If you have an existing OES iPrint system or iPrint Appliance, you can import printers by following the procedure below.

3.3.1 Prerequisites

Before starting the import process, you must connect to iPrint Appliance using a secure shell or terminal.

If using Windows:

- 1 Download and install an X-server such as MobaXterm.

NOTE: It is recommended that you use MobaXterm. If you use other X-servers (for example, X-ming), you might not be able to populate the required fields on the migration tool.

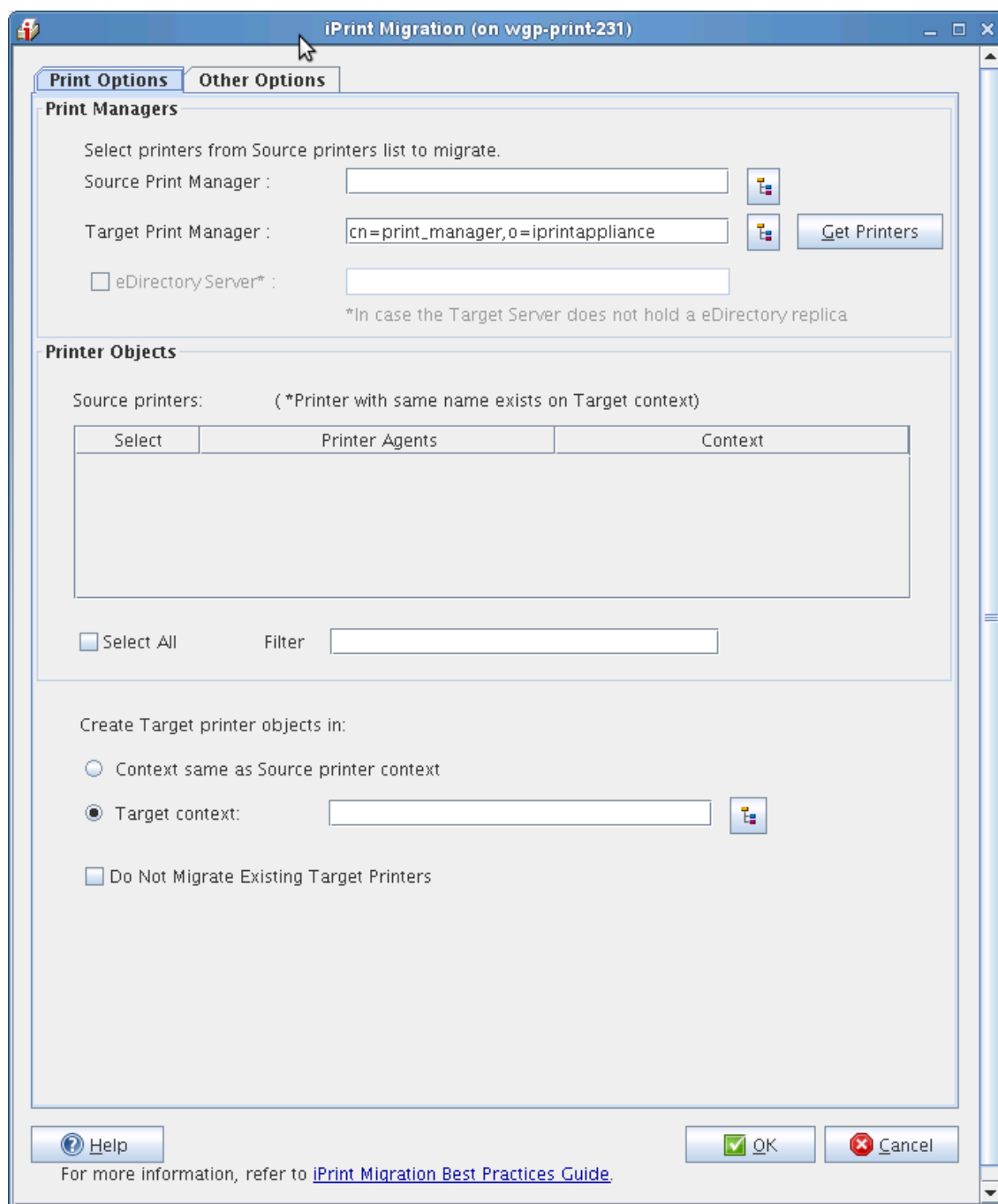
- 2 Launch a Secure Shell Client, then connect to iPrint Appliance by using the IP address.
- 3 Run the command `export DISPLAY=<localsystemIPAddress>:0.0`.

If using Linux or Mac:

- 1 Launch the terminal, then run the command `ssh -X <iPrintApplianceIPAddress>`.

3.3.2 Printer Import

- 1 Launch the Migration Tool on the iPrint Appliance server by using the command `miggui`.
The Migration Interface is displayed.
- 2 Authenticate to the source and iPrint Appliance servers.
- 3 Select *Consolidate* as the migration type.
- 4 Click *Add*.
- 5 Select *Novell iPrint*, then click *OK*.
- 6 If you see a *Do you want to configure the Novell iPrint service now?* message, click *Yes*.
The iPrint Migration window is displayed.



- 7 Click *Get Printers* to select printer objects from the source Print Manager.
- 8 Configure the following parameters to proceed with the migration process:

Print Objects	Parameter	Description
<i>Print Managers</i>	Source Print Manager	Specify the active Print Manager on the source server. The source Print Manager can be either an NDPS manager (for NetWare 6.5) or iPrint Manager (for OES 1 and OES 2 Linux). To go directly to a context of your choice, specify the context in the search base and click <i>Search</i> . The objects in the specified context are displayed.

Print Objects	Parameter	Description
<i>Printer Objects</i>	Target Print Manager	<p>The <i>Target Print Manager</i> field is populated with the name of the active Print Manager running on the target server. This field is editable; you can also specify a different name for the active Print Manager. To go directly to a context of your choice, specify the context in the search base and click <i>Search</i>. The objects in the specified context are displayed.</p> <p>Click <i>Get Printers</i> to select printer objects from the source Print Manager.</p> <p>Click <i>Get Printers</i> to select printer objects from the source Print Manager.</p>
	Source printers	Displays all printers of the active Print Manager available on the source server. The printers that already exist on the target server are indicated by an asterisk (*).
	Select All	<p>Selects all the printers listed in the Printer Objects dialog box.</p> <p>NOTE: When you apply a new filter or modify an existing filter and click <i>Select All</i>, only printers that are displayed after applying the filter are selected. When you manually select all printers, the selected printers are migrated.</p>
	Filter	Specify the search pattern in the <i>Filter</i> field. This displays the printers in the Printer Agents list. This field is case sensitive.
<i>Create target printer objects in</i>	Context same as source printer context	Select this option to use the same context as the source printers on the target server.
	Target context	<p>This option is selected by default. It allows you to create source printers under a different context on the target server. This option does not maintain the context hierarchy of the source printer.</p> <p>To go directly to a context of your choice, specify the context in the search base and click <i>Search</i>. The objects in the specified context are displayed.</p>
	Do Not Migrate Existing Target Printers	<p>If the printer names on the source server match the printer names on the target server, the target printer properties and attributes are overwritten by the source printer properties and attributes.</p> <p>The printers that already exist on the target server are represented by an asterisk (*).</p>

iPrint Migration (on wgp-print-231)

Print Options **Other Options**

Source Driver Store

☐ The Source Driver Store is not on the same Server as the Source Print Manager

IP Address/DNS Name :

User Name :

Password :

Migrate the following additional Source Print Brokers to the Target Driver Store:

IP Address/DNS Name	Broker Volume Name
<input type="text"/>	<input type="text"/>

Target Driver Store

Target Driver Store DN :

☐ Target Driver Store is remote

IP Address/DNS Name :

User Name :

Password :

Printer Drivers

Options to Migrate Printer Drivers:

☐ Do Not Migrate Printer Driver and association of the Printer Agents with the Driver.

☒ Migrate Printer Driver if the driver is not present in the Target Driver Store.

☐ Migrate all Printer Drivers. This overwrites the Printer Driver on the Target Driver Store.

Migrate drivers for the following platforms:

All

Windows 95/98

Windows NT 4

Windows 2000

Windows XP

Press Ctrl+Click to select or deselect more than one platform

☒ Migrate Printer Driver Profiles. This overwrites the existing Printer Driver Profiles

☒ Migrate iPrint.ini file. This overwrites the existing iPrint.ini file on Target

[Help](#) [OK](#) [Cancel](#)

For more information, refer to [iPrint Migration Best Practices Guide](#).

Other Options	Parameter	Description
Source Driver Store	The Source Driver Store is not on the same server as the Source Print Manager	If the source Driver Store is running on a server different from the source Print Manager's server, this check box is selected. Specify the IP address or the DNS Name and the root password of the server on which the source Driver Store is located.

Other Options	Parameter	Description
	Migrate the following additional Source Print Brokers to the Target Driver Store	<p>This section lists the names and IP/DNS addresses of the source Print Broker volumes that must be migrated to the target Driver Store.</p> <p>Click the plus button (+) and specify the IP address or the DNS name of the Source Broker. Select the Source Broker volume from the drop-down list and click <i>OK</i>. The list is populated with the IP address or DNS name of the Source Broker and Broker volume name. You can add multiple Source Brokers to the list.</p> <p>To remove the Source Broker from the list, select the IP address or DNS name and click the minus button (-). You can remove one Broker at a time.</p>
<i>Target Driver Store</i>	Target Driver Store is remote	<p>If the Driver Store is running on the remote server (other than the target server), the <i>Target Driver Store is remote</i> check box is enabled.</p> <p>Specify the IP address or the DNS name of the remote server and the root password of the remote server in the corresponding entry fields.</p>
<i>Printer Drivers</i>	Do not Migrate Printer Drivers and the association of the Printer Agents with the Driver	<p>Selecting this option ensures that printer drivers and the association of Printer Agents with the drivers are not migrated.</p>
	Migrate Printer Driver if the driver is not present in the target Driver Store	<p>Selecting this option migrates the printer drivers for the selected driver platforms from the Select Driver Platforms to Migrate list, if they are not present in the target Driver Store. This also migrates all the associations of the Printer Agents with the driver.</p> <p>NOTE: The default driver platform selection is <i>All</i>.</p>
	Migrate all Printer Drivers. This overwrites the Printer Driver on the target Driver Store	<p>Selecting this option overwrites the target drivers for the driver platforms you have selected from the Select Driver Platforms to Migrate list, if the driver names in the target Driver Store are the same as the source Driver Store. This also migrates all the associations of the Printer Agents with the driver.</p> <p>NOTE: The default Driver Platform selection is <i>All</i>.</p>
<i>Printer Driver Profile</i>	Migrate Printer Driver Profile	<p>If the profiles are the same on the target server as the source server, the target profiles are overwritten.</p>
<i>iPrint.ini File</i>	Migrate iPrint.ini File	<p>If you migrate printer agents from two or more print managers, the <code>iPrint.ini</code> file on the target server is replaced by the <code>iPrint.ini</code> file of the last source server.</p> <p>NOTE: After migration, if the target server's <code>iprint.ini</code> file is overwritten by the source server's file. If the target server's <code>iprint.ini</code> file had new parameters that were erased, you can restore them by copying the parameters manually from the <code>iprint.bak</code> file. The <code>iprint.bak</code> file is a backup of the target server's <code>iprint.ini</code> file. After migration, the <code>iprint.bak</code> file is saved in the <code>/var/opt/novell/iprint/htdocs</code> directory.</p>

- 9 Click *Start* to begin the migration process.

If you are prompted to save the project, click either *Yes* or *No* to proceed. If you save a project, the next time you want to import printers, you can use the saved file to retrieve your preferences instantly.

3.4 Importing Users from an LDAP Source

To setup iPrint Appliance, you must import users from your LDAP source. For information on how to import users from an LDAP source, see [Section 8.1.6, “LDAP Import,” on page 62](#).

3.5 Line Printer Remote (LPR) Printing

Line Printer Remote (LPR) Printing is a platform-independent printing protocol. UNIX, Macintosh, and other LPR clients can print to iPrint printers through LPR.

To set up an iPrint printer to accept LPR print jobs, you must enable LPR/LPD printing for the printer. For more information, see [Configuring LPR Printers](#) in the [iPrint Linux Administration Guide](#).

3.6 iPrint Appliance Configuration Complete

iPrint Appliance configuration is now complete. You can use the *Novell iPrint* app to print. The app is currently available on Android and iOS platforms. You can download the Novell iPrint app to your device from Google’s Play Store or Apple’s App Store, by searching for Novell iPrint. For information about configuring and using the mobile application, see the [Novell iPrint 1.0 User Guide](#), or the *Help* section of the app.

Microsoft Office and PDF formats are best rendered using iPrint Windows Renderer. The renderer uses Microsoft Office and Adobe Acrobat Pro applications to convert documents to print-ready formats. To install iPrint Windows Renderer, continue with [Chapter 4, “iPrint Windows Renderer Installation and Configuration,” on page 33](#).

4 iPrint Windows Renderer Installation and Configuration

For desktop quality printing for Microsoft Office and PDF documents, you must install iPrint Windows Renderer on a Microsoft Windows 7 64-bit system.

- ♦ [Section 4.1, “System Requirements,” on page 33](#)
- ♦ [Section 4.2, “Downloading iPrint Windows Renderer,” on page 34](#)
- ♦ [Section 4.3, “Installing iPrint Windows Renderer,” on page 34](#)
- ♦ [Section 4.4, “Assigning Log On as a Service Rights,” on page 35](#)
- ♦ [Section 4.5, “Creating an Authentication Key,” on page 35](#)
- ♦ [Section 4.6, “Configuring iPrint Windows Renderer for Microsoft Office or Adobe Acrobat,” on page 36](#)
- ♦ [Section 4.7, “Configuring iPrint Windows Renderer as a Local User,” on page 36](#)
- ♦ [Section 4.8, “Configuring iPrint Windows Renderer as a Domain User,” on page 37](#)
- ♦ [Section 4.9, “iPrint Windows Renderer Commands,” on page 37](#)

4.1 System Requirements

You must install iPrint Windows Renderer on a Microsoft Windows 7 system. The minimum requirements are as follows:

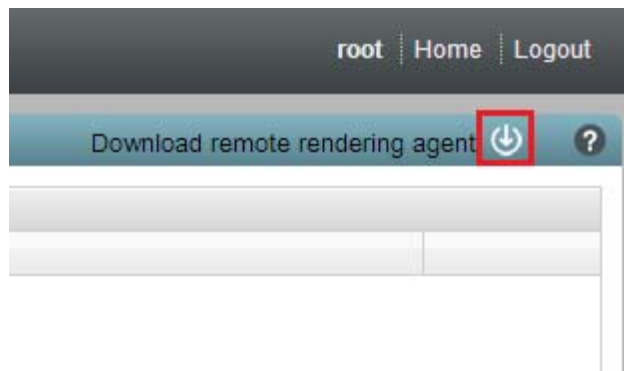
- ♦ Microsoft Windows 7 64-bit with a dual-core processor
- ♦ Microsoft Office 2010
- ♦ Adobe Acrobat X Pro or higher
- ♦ Microsoft .Net Framework 4
- ♦ HP Universal Print Driver for Windows - Postscript

NOTE: You must pre-install the PostScript driver or install it during iPrint Windows Renderer configuration when prompted. The latest version of HP Universal Print Driver for Windows - Postscript driver for Window 7 64-bit is highly recommended. You can download the driver from [HP's drivers and software page](#).

You can configure iPrint Windows Renderer to render specific formats based on your print requirements. For example, if you do not have a need to print PDF documents, you can skip installing Adobe Acrobat, and use only Microsoft Office. Similarly, if you do not have a need to print Microsoft Office documents, then you can install only Adobe Acrobat. For more information, see [Section 4.6, “Configuring iPrint Windows Renderer for Microsoft Office or Adobe Acrobat,” on page 36](#).

4.2 Downloading iPrint Windows Renderer

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Specify `vaadmin` as the user name.
- 3 Specify the password that you provided for `vaadmin`.
The Management Console page is displayed.
- 4 Click *iPrint Appliance Configuration*.
- 5 Under *Administration*, click *Renderers*.
- 6 Click the icon next to the *Download remote rendering agent* link in the upper-right corner of the screen, to download the renderer.



NOTE: The iPrint Windows Renderer installation interface is not available in Slovak, Hungarian, Netherlands Dutch, and Catalan languages.

4.3 Installing iPrint Windows Renderer

- 1 After you have downloaded the software, launch the `iPrintRendererSetup.msi` file to begin the installation.
- 2 Follow the on-screen prompts to complete the installation procedure.

IMPORTANT: iPrint Appliance supports only PostScript printers by default. For non-PostScript printers, you must install the appropriate printer drivers. For more information, see [Appendix D, "Printing to a PCL Printer,"](#) on page 97.

NOTE: If you want to install or uninstall Adobe Acrobat X Pro on the Windows 7 machine, and if iPrint Windows Renderer is already installed, you must stop the iPrint Windows Renderer service using the command `iprntrendcmd -q`. If you do not stop the iPrint Windows Renderer service, you may see a message that Microsoft Office applications are running, and you may not be able to proceed with installation or uninstallation.

4.4 Assigning Log On as a Service Rights

Before configuring iPrint Windows Renderer, you must assign the *Log on as a service* rights to the account with which you want to set up the renderer, on the local machine.

- 1 Go to *Start > Control Panel*.
- 2 In the upper-right corner of the Control Panel window, click the *View by* drop-down menu, then select *Large icons*.
- 3 Go to *Administrative Tools > Local Security Policy*.
- 4 In the left pane, double-click *Local Policies*.
- 5 Click *User Rights Assignment*.
- 6 In the right pane, under *Policy*, double-click *Log on as a service*.
- 7 Click *Add User or Group*.
- 8 Specify the user name in the *Enter the object names to select* box, then click *Check Names*.
- 9 Click *OK* after the user is displayed.
- 10 Click *OK*.
- 11 Click *OK*, then close the Local Security Policy window.

4.5 Creating an Authentication Key

For an external document renderer like iPrint Windows Renderer to connect to iPrint Appliance, an Authentication Key is required.

To create an Authentication Key:

- 1 On a Web browser, specify either the DNS name or the IP address. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Specify the *Username* and *Password*, then click *Log in*.
- 3 Click the *iPrint Appliance Configuration* icon.
- 4 Under *Administration*, click *Mobile Configuration*.
- 5 Under *Renderer Options*, specify an *Authentication Key*.
The Authentication Key can be a combination of a string of characters.
- 6 Click *Save*.

4.6 Configuring iPrint Windows Renderer for Microsoft Office or Adobe Acrobat

You can configure iPrint Windows Renderer to render specific formats based on your print requirements. If you do not have a need to print PDF documents, you can install only Microsoft Office. Similarly, if you do not have a need to print Microsoft Office documents, then you can install only Adobe Acrobat on the Windows 7 64-bit system.

If you are installing only one of either Microsoft Office or Adobe Acrobat, you must modify the `iPrintRenderer.conf` file before starting the configuration process:

- 1 Launch the `iPrintRenderer.conf` file located at
`C:\NDPS\Renderer\conf\iPrintRenderer.conf`.
- 2 Comment out the format that is not applicable to your print environment. If you are installing only Adobe Acrobat, comment all the Microsoft Office formats lines listed in the file. If you are installing only Microsoft Office, comment the Adobe Acrobat line.
- 3 Save and close the file.
- 4 Restart the `iPrntRendCmd` service.

NOTE: If iPrint Windows renderer was configured and registered before modifying the `iPrintRenderer.conf` file, you must unregister the renderer by using the command `iPrntRendCmd -u`, and re-register by using the command `iPrntRendCmd -r` for the changes to take effect.

NOTE: If you want to uninstall either Microsoft Office or Adobe Acrobat, follow the same procedure of modifying the `iPrintRenderer.conf` file. Ensure that you unregister and re-register the renderer after uninstalling either software.

4.7 Configuring iPrint Windows Renderer as a Local User

You must configure and register the renderer with the iPrint Appliance server to start accepting rendering jobs.

- 1 Launch the command prompt in the *Run as administrator* mode.
- 2 Run the command `iPrntRendCmd -c` to configure the renderer, then follow the on-screen instructions to install the printer driver specific to your printer.

When prompted for service configuration credentials, specify the credentials of an account with Windows admin and *Log on as a service* rights.

The generic universal driver must be pre-installed or provided during the iPrint Windows Renderer installation. The latest version of HP Universal Print Driver for Windows - PostScript for Window 7 64-bit is highly recommended. You can download the HP driver from [HP's drivers and software page](#).
- 3 Run the command `iPrntRendCmd -r <iPrintAppliance DNS name or IP address> <authentication key>` to register the renderer.

NOTE: You can find the Authentication Key in the Management Console of iPrint Appliance by going to *iPrint Appliance Configuration > Mobile Configuration*.

During renderer registration, a certificate window is displayed. Accept the certificate to complete the registration.

After configuration and registration of the renderer, run the command `iPrntRendCmd -s` from the installation directory to check the iPrint Rendering Service status.

4.8 Configuring iPrint Windows Renderer as a Domain User

To configure iPrint Windows Renderer as a domain user, you must use a domain user account. If you do not have a domain user account, you must create one. For information on creating a domain user account, see the article on how to [Create a user account](#) on the Microsoft support site.

After creating a Domain User account, you must assign *Log on as a Service* rights to the domain user. For more information, see [Section 4.4, "Assigning Log On as a Service Rights,"](#) on page 35.

After adding the *Log on as a Service* rights to the Domain User account, you must configure and register the renderer with the iPrint Appliance server to start accepting rendering jobs.

- 1 Launch the command prompt in the *Run as administrator* mode.
- 2 Run the command `iPrntRendCmd -c` to configure the renderer.
- 3 When prompted for a user name, specify the user name in the following format:
[domainname]\[username].
- 4 Run the command `iPrntRendCmd -r <iPrintAppliance DNS name or IP address> <authentication key>` to register the renderer.

NOTE: You can find the Authentication Key in the Management Console of iPrint Appliance by going to *iPrint Appliance Configuration > Mobile Configuration*.

During renderer registration, a certificate window is displayed. Accept the certificate to complete the registration.

After configuration and registration of the renderer, run the command `iPrntRendCmd -s` from the installation directory to check the iPrint Rendering Service status.

4.9 iPrint Windows Renderer Commands

The `iPrntRendCmd` command that is used to configure iPrint Windows Renderer has following options:

Command	Description
-h	Shows the various available commands with their syntax.
-v	Shows the current version of iPrint Windows Renderer.
-c	Configures the iPrint Windows Renderer service and installs the printer drivers. When prompted for service configuration credentials, specify the credentials of an account with Windows admin rights.
-r	Registers iPrint Windows Renderer with the iPrint Appliance server. To start accepting rendering jobs, you must register the renderer with the iPrint Appliance server.
-u	Un-registers iPrint Windows Renderer from the iPrint Appliance server. After un-registration, the iPrint Windows Renderer stops accepting jobs from the iPrint Appliance server for conversion. The iPrint Rendering service is running, but does not receive rendering jobs from the iPrint Appliance server.
-t	Tests the conversion locally.

Command	Description
-s	Displays the status of iPrint Windows Rendering service.
-l	Starts the iPrint Windows Rendering service. After registration, the rendering service starts automatically.
-q	Stops the iPrint Windows Rendering service.
-ls	Lists the iPrint Appliance registered with iPrint Windows Renderer.

5 AirPrint through iPrint

AirPrint is a framework that facilitates driverless printing. The framework was invented by Apple Inc. iOS applications (apps) that implement AirPrint technology allow users to send print jobs to AirPrint enabled printers. With iPrint Appliance, you can “AirPrint enable” any iPrint printer.

This section describes the benefits and key features of AirPrint through iPrint:

- [Section 5.1, “iOS Wireless Printer Discovery,” on page 39](#)
- [Section 5.2, “Multicast DNS,” on page 39](#)
- [Section 5.3, “AirPrint through iPrint,” on page 40](#)
- [Section 5.4, “Benefits,” on page 40](#)
- [Section 5.5, “Supported iOS Devices,” on page 40](#)
- [Section 5.6, “AirPrint Deployment Considerations in iPrint Appliance,” on page 40](#)
- [Section 5.7, “AirPrint Deployment Scenario in iPrint,” on page 41](#)
- [Section 5.8, “Enabling AirPrint through iPrint,” on page 42](#)
- [Section 5.9, “Disabling AirPrint through iPrint,” on page 43](#)
- [Section 5.10, “AirPrint Errors and Symptoms,” on page 43](#)

5.1 iOS Wireless Printer Discovery

iOS devices have an inherent service discovery mechanism called Bonjour. Bonjour has the wireless service identifying capability known as mDNS (multicast DNS). iPrint uses the Linux Avahi daemon service to advertise iPrint printers to the iOS devices on a wireless network.

5.2 Multicast DNS

Domain Name Service provides translation from a Web address (starting with www) to the Internet Protocol (IP) addresses. mDNS (Multicast DNS protocol) is a method of network neighborhood resource discovery. mDNS forwards the DNS message to many endpoints on a network. Each device connected to an mDNS enabled network sends out a message detailing its name, function, and capabilities. On the receiving device, the information is stored so it can route requests when an application requests a service, such as printing.

mDNS is useful in wireless networks. By monitoring mDNS advertisements, clients can learn the location of the service, then connect to it in the same way as any other service. mDNS transforms the manual process of configuring IP addresses and port numbers that provides a zero configuration experience where a user references the service using human-friendly types and names.

5.3 AirPrint through iPrint

When iOS devices such as iPhone, iPad, and iPod touch connect to the wireless network, they are automatically assigned an IP address. This opens an opportunity to exploit the IP network service for printer discovery, and submit the print job. iOS devices convert Microsoft Office files, images, and web pages into PDF; construct an IPP print request; and send the print request to the AirPrint enabled IPP printer. The AirPrint enabled IPP printer renders the PDF or image file into a printer-specific language such as post script. The printer consumes this data and the document is printed. This is called AirPrint.

Many printers are not compatible with AirPrint. iPrint hides the printer's capabilities, and advertises the printer as an AirPrint enabled printer. This allows iPrint to extend the enterprise print service into the wireless network to exploit the iOS devices' inherent print capability, and provides additional advantages to consume iPrint features.

5.4 Benefits

AirPrint through iPrint offers significant benefits over other printing models:

- ♦ Any iPrint printer can be enabled for AirPrint regardless of the printer's inherent AirPrint support.
- ♦ AirPrint enabled printers are also listed in the iOS device.
- ♦ AirPrint enabled printers can make use of the iPrint server's features.

5.5 Supported iOS Devices

Supported iOS devices include iPhone, iPad, and iPod touch with iOS 5 and above.

NOTE: Secure printing to iPrint printers through AirPrint is supported only on iOS 6.x. It is not supported on iOS 5.x.

5.6 AirPrint Deployment Considerations in iPrint Appliance

The mDNS protocol operates on service announcements and queries, which allow devices to advertise specific applications, such as printing services. Each query or advertisement is sent to an mDNS multicast address for delivery to all clients on the subnet. Apple's Bonjour protocol relies on Multicast DNS (mDNS) operating at UDP port 5353. iOS devices listen for services on these reserved group addresses:

- ♦ IPv4 Group address - 224.0.0.251

The addresses used by the mDNS protocol are link-local multicast addresses and are valid on the link local domain. Hence, routers might have to be enabled, in order to forward the multicast advertisement to various subnetworks.

Before you can enable AirPrint in iPrint, your network must meet the requirements listed below.

5.6.1 Hardware Requirements

- ♦ Router or Gateway with an option to forward mDNS (Apple Bonjour) multicast advertisement on all or selected wireless VLANs
- ♦ Wireless router that supports mDNS (Apple Bonjour) between wired and wireless machines

NOTE: The wireless routers are expected to have the capability for IGMP snooping. IGMP snooping is required to disallow the multicast traffic on those network interfaces that are not participating in AirPrint's Bonjour multicast discovery.

The wireless network switches must not be interconnected for redundancy. This results in a Layer 2 switching loop.

5.6.2 Network Requirements

- ♦ Wireless network with no interconnection
- ♦ IP Multicast network (IP Multicast must be enabled on network devices such as routers and switches)

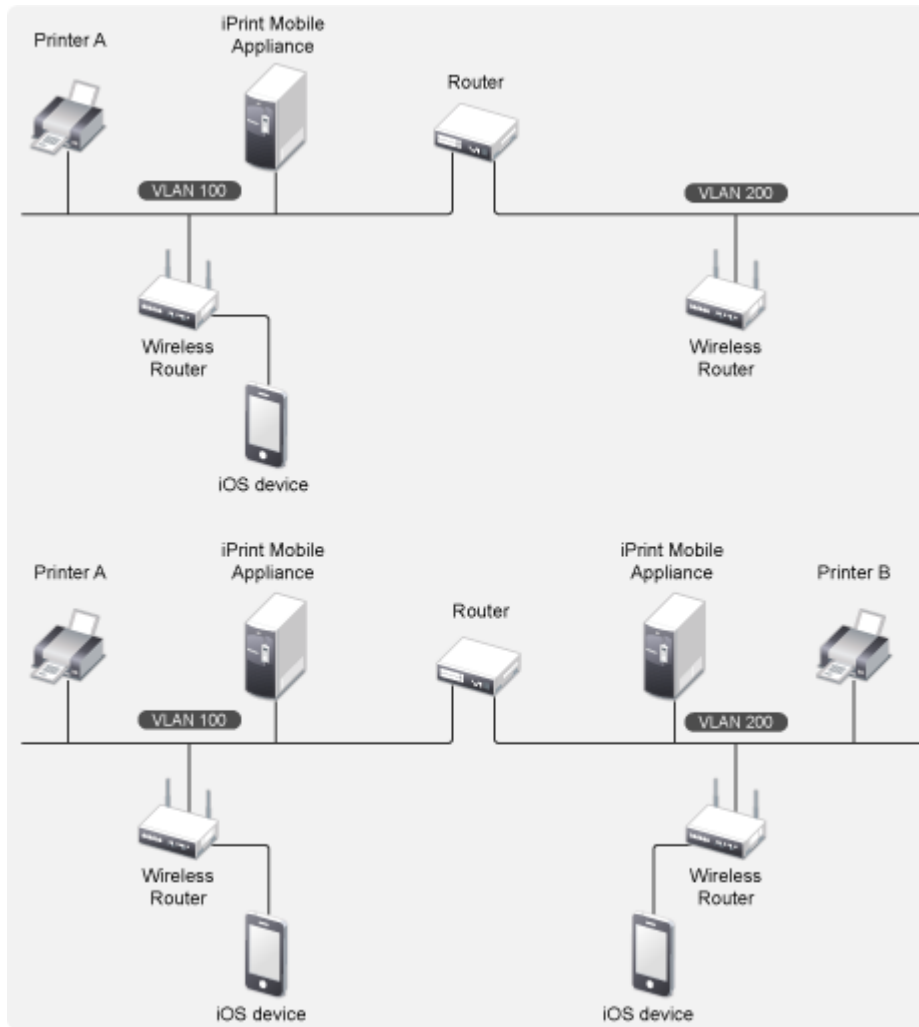
5.7 AirPrint Deployment Scenario in iPrint

The deployment scenarios are confined to the wireless-based LAN network because iOS devices can only communicate over the wireless medium for the printer discovery and print services. The deployment scenario varies based on how wireless is configured in the organization. The preferred scenario is to deploy iPrint's AirPrint mDNS services led by the router, which has the ability to route the mDNS packets (link local Bonjour advertisement) into the various wireless sub networks in the organization. See [Figure 5-1](#).

5.7.1 Intra VLAN Configuration

Wireless routers span across multiple wired networks, and have hotspots on every network. The mDNS service advertises printers on the wireless network, and the iOS device builds a list of available print services by listening to these advertisements. AirPrint client's users can select a target printer from the received list of advertised printers.

Figure 5-1 Logical Network Segment Configuration



In this configuration, the mDNS advertisement is instantly injected into the network. In the above configuration, printer 'A' is visible for VLAN 100 wireless users, and printer 'B' is visible for and VLAN200 wireless users. The printers are not visible across the VLANs.

5.8 Enabling AirPrint through iPrint

To enable AirPrint through iPrint:

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, https://server_url:9443 or <http://<serverurl>/admin>.
- 2 Specify the user name and password, then click *Log in*.
- 3 Click *iPrint Appliance Configuration*.
- 4 Under *Administration*, click *Printers*.
- 5 Select a printer for which you want to enable AirPrint.

The *AirPrint* and *Mobile* drop-down menus are activated.

- 6 Click the *AirPrint* drop-down menu, then click *Enable Advertising*.

iPrint AirPrint is now enabled on the iPrint printer. You can print to an iPrint AirPrint enabled printer from any iOS device.

5.9 Disabling AirPrint through iPrint

To disable AirPrint through iPrint:

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, https://server_url:9443 or <http://<serverurl>/admin>.
- 2 Specify the user name and password, then click *Log in*.
- 3 Click *iPrint Appliance Configuration*.
- 4 Under *Administration*, click *Printers*.
- 5 Select a printer for which you want to disable AirPrint.
The *AirPrint* and *Mobile* drop-down menus are activated.
- 6 Click the *AirPrint* drop-down menu, then click *Disable Advertising*.

IMPORTANT: If a printer is shut down or redirected to another printer, you must disable AirPrint advertising. This ensures that users do not receive errors when trying to print to non-functional printers.

5.10 AirPrint Errors and Symptoms

When using AirPrint, users might receive a few error messages, or notice symptoms that might indicate issues with the printer or the network. The errors and symptoms are listed below, along with the possible cause.

Table 5-1 *AirPrint Error and Symptoms*

Error/Symptom	Possible Cause
The printer is paused	iPrint output printer queue paused.
Check the printer for errors	Network communication failed between iPrint Appliance and printer, or iPrint printer is shut down.
The printer is offline	iPrint Appliance is not reachable.
iOS 5.x: An error occurred printing this document	iPrint printer is deleted from PSM but still published as Airprint printer on the network.
iOS 6.x: The printer is no longer available	
The printer is no longer available	iPrint printer is shut down.
The printer job is continuously under processing	Printer is redirected or not working.

Points to note:

- ♦ If the printer's input queue is paused, jobs are queued at the device print queue. To view the print queue on iOS devices, double-tap the Home button, then select the *Print Centre* app.

- ♦ For photo printing, paper types such as 4x6 and LETTER are available only on iOS 6.0 and above. When printing images on iOS 6.x, the paper type is displayed by default.
- ♦ The duplex option is displayed on the job submission page by default on iOS 5.x. This behavior is different from iOS 6.x and above. On iOS 6.x, the duplex option is displayed dynamically by querying the printer for duplex availability status.
- ♦ AirPrint might display messages regarding the status of the printer such as empty input tray or printer jam, based on the status message from the printer's console. If the printer is in READY state without any warning/error messages, AirPrint does not display any printer error messages to the user.
- ♦ Before enabling AirPrint, ensure that the iPrint Appliance DNS name is resolvable by the iOS device.
- ♦ If a printer is not functioning, disable advertising on that printer to ensure that the printer is not displayed as an AirPrint printer, and users do not try printing to those printers.
- ♦ iPrint Windows Renderer must be configured with iPrint Appliance to ensure that documents render correctly when printing using AirPrint.

6 Email Printing

iPrint Appliance contains an email printing feature. Using email printing, you can print documents from any device capable of sending emails. You can print emails by specifying email printing commands in the subject line of the email. You can also print documents by emailing them to your printer as attachments.

You can configure printers to print through the global print email address, or you can setup a printer for private email printing by providing a specific email address to each printer.

- ♦ **Global Print Email Address:** When enabling email printing, you are prompted to specify an email address. This email address is the global print email address. When configured for email printing, iPrint Appliance becomes a client to an email server. The global email account inbox is polled for incoming print jobs, which are then routed to the intended printer.
- ♦ **Private Email Printing:** You can assign a specific email address to each printer. When a user sends an email printing request, the print job is sent directly to the printer. Also, users do not need to specify any print commands in the subject line of the email.

Email printing is not enabled by default. You can enable email printing through the Management Console. You must create a unique email address for iPrint Appliance to receive and process print requests.

WARNING: You must create an exclusive email account to be used for iPrint Appliance. If you provide an existing email address (for example, your official email address), the iPrint Appliance mobile server immediately starts processing all existing emails in the inbox, replies to every mail with a response, then deletes all the received emails.

- ♦ [Section 6.1, “Enabling Email Printing,” on page 45](#)
- ♦ [Section 6.2, “Email Printing Commands,” on page 47](#)

6.1 Enabling Email Printing

- ♦ [Section 6.1.1, “Enabling Global Email Printing,” on page 45](#)
- ♦ [Section 6.1.2, “Enabling Private Email Printing,” on page 46](#)

6.1.1 Enabling Global Email Printing

- 1 On a Web browser, use either the DNS name or the IP address of iPrint Appliance to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Specify the user name and password, then click *Log in*.
- 3 Click *iPrint Appliance Configuration*.
- 4 Under *Administration*, click *Mobile Configuration*.
- 5 Check *Enable email-based printing* box.

6 Specify the following information:

Email address: Specify the full email address that is used to queue global print jobs.

WARNING: You must create an exclusive email account to be used for iPrint Appliance. If you provide an existing email address (for example, your official email address), the iPrint Appliance mobile server immediately starts processing all existing emails in the inbox, replies to every mail with a response, then deletes all the received emails.

Account Username: Specify the user name for iPrint Appliance to log in to the email server to access the global email account. Account Username must be the user name of the email address that you specified in the *Email address* field.

Account Password: Specify the password for iPrint Appliance to log in to the email server to access the global email account.

Re-type Password: Specify the password again to confirm.

Incoming Mail Server: Specify the address of the incoming email server for the email account. For example, `imap.example.com`.

Incoming Server Type: iPrint Appliance supports IMAP and POP for incoming print jobs. Select the protocol that your email server supports.

Outgoing (SMTP) Mail Server: Specify the address of the outgoing email server for the email account. For example, `smtp.example.com`.

Enable Mail-body Printing: With email-based printing, attachments are always printed. This option allows the email message body to also be printed.

7 Click *Save*.

IMPORTANT: When using email printing, the print command in the subject line may trigger spam filters. To avoid this issue, configure your email system to allow print-specific emails. Include the approved print users in the spam filter of your email system to prevent unwanted print requests.

NOTE: The global email address must be unique for each copy of iPrint Appliance that you deploy.

6.1.2 Enabling Private Email Printing

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Click the *iPrint Appliance Configuration* icon.
- 3 Under *Administration*, click *Printers*.
- 4 Select a printer, click the *Configure* drop-down menu, then click *Private Email Settings*.
- 5 Specify the following information, then click *OK*.

Account

- ♦ **Email Address:** Specify the full email address of the mailbox to be polled for the print jobs. When an email-based job arrives, the print job is processed to the printer. For example, `print@example.com`.
 - ♦ **Username:** Specify the user name to be used by iPrint Appliance to log in to the email server to access the private printer email account. For example, `iprint`.
 - ♦ **Password:** Specify the password for iPrint Appliance to log in to the email server to access the private printer email account.
 - ♦ **Retype Password:** Confirm the account password.
-

Server	<ul style="list-style-type: none"> ♦ Incoming Mail Server: Specify the address of the incoming email server for the email account. For example, <code>imap.example.com</code>. ♦ Outgoing Mail Server: Specify the address of the outgoing email server for the email account. For example, <code>smtp.example.com</code>. ♦ Access Method: iPrint Appliance supports two different protocols to poll for incoming print jobs. Select POP or IMAP depending on the protocol your email server supports.
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6.2 Email Printing Commands

You can print the body of the email and the attachments by using a few simple print commands in the subject line of your email.

- ♦ [Section 6.2.1, “Basic Print Commands,” on page 47](#)
- ♦ [Section 6.2.2, “Additional Print Commands,” on page 48](#)

6.2.1 Basic Print Commands

help

Provides information on email printing commands.

list printers

To get the names of the available printers, send an email to the iPrint server address (for example, `iprint@novell.com`) with the subject line `list printers`.

print printer=<printer_name>

Prints your email and its attachments to the specified printer. For example, `print printer=hp#Test Mail`.

NOTE: If you print to a specific printer by using the printer’s email address, the `print printer` command is ignored.

hold printer=<printer_name>

Queues your email along with its attachments and sends you the job ID as acknowledgement.

resume

Resumes the printing of a job that you put on hold. There are two ways to print a job on hold:

- ♦ Send an email with subject `resume` followed by the job ID. For example, `resume 10`
- ♦ Send an email with the original subject line prefixed with `resume`. For example, `resume#Test Mail`

cancel

Cancels a job that you put on hold. There are two ways to cancel a job on hold:

- ♦ Send an email with subject `cancel` followed by the job ID. For example, `cancel 10`
- ♦ Send an email with the original subject line prefixed with `cancel`. For example, `cancel#Test Mail`

status

Displays the status of a job. There are two ways to check the status of a job:

- ♦ Send an email with subject `status` followed by the job ID. For example, `status 10`
- ♦ Send an email with the original subject line prefixed with `status`. For example, `status#Test Mail`

move

Moves a job to a new printer. There are two ways to move a job to a new printer:

- ♦ Send an email with subject `move`, the job ID, and the name of the new printer. For example, `move 10 printer=<PrinterName>`
- ♦ Send an email with the original subject line prefixed with `move`, the name of the new printer, and `#`. For example, `move printer=<PrinterName>#Test Mail`

list jobs

Lists the details of the held jobs.

default printer

Displays the default printer.

default printer=<PrinterName>

Sets a particular printer as your default printer. After you set the default printer, you do not need to include the printer name while printing to the default printer. You only need to use the `print` command followed by the email subject. For example, `print#Test Mail`.

NOTE: If a printer name contains spaces, enclose the printer name within double (") or single (') quotes. For example, `print printer='HP PRINTER'`.

NOTE: To separate the email subject from the command, use `#`. For example, `print printer=hp#Test Mail`.

6.2.2 Additional Print Commands

In addition to the basic print commands listed above, you can use these additional commands to refine your printing:

portrait [portrait=yes/portrait=y (or) portrait=no/portrait=n]

Prints your email content in portrait orientation. For example, `print printer=hp portrait=y#Test Mail`

landscape [landscape=yes/landscape=y (or) landscape=no/landscape=n]

Prints your email content in landscape orientation. For example, `print printer=hp landscape=y#Test Mail`

color [color=yes/color=y (or) color=no/color=n]

Prints your email content in color. For example, `print printer=hp landscape=y color=y#Test Mail`.

pages

Prints a given range of pages in your email. For example, the command `print printer=hp landscape=y color=y pages=1-3#Test Mail` prints pages 1, 2, and 3.

copies

Prints the specified number of copies of your email and its attachments. For example, the command `print printer=hp landscape=y color=y pages=1-3 copies=5#Test Mail` prints 5 copies of pages 1, 2, and 3.

duplex [duplex=yes/duplex=y (or) duplex=no/duplex=n]

Prints your email and its attachments on both sides of the printing paper. For example, the command `print printer=hp landscape=y color=y pages=1-3 copies=5 duplex=y#TestMail` prints 5 copies of pages 1, 2, and 3 in duplex mode.

media

Prints your email and its attachments with the specified paper type. The default paper type is "LETTER". You can change the default paper type by using the iPrint Appliance Management Console. The other available print paper types are A3, A4, and other common paper types. For example, the command `print printer=hp landscape=y color=y pages=1-3 copies=5 duplex=y media=A3#Test Mail` prints 5 copies of pages 1, 2, and 3 in duplex mode, on an A3 size paper.

mailbody [mailbody=yes/mailbody=y (or) mailbody=no/mailbody=n]

Prints either your email and its attachments or only the attachments from your email without the email body. For example, using the command `print printer=hp landscape=y color=y mailbody=n#Test Mail` prints only the email attachments in landscape mode.

NOTE: If you do not specify any of the additional commands, your print job is carried out according to the default preferences set by your administrator.

IMPORTANT: When printing to a specific printer using the printer's private email address, you do not need to specify the printer's name in the command. You can also leave the subject line empty. Printing is carried out according to the default print options set by the administrator.

However, you must specify the print command in the following scenarios:

- ♦ The administrator changes the `subject_optional_for_printer_specific_emails` to *False* in the iPrint Appliance Server Configuration file located at `/etc/opt/novell/iprintmobile/conf/iprintmobile.conf`.
 - ♦ If you want to customize the print options, you must specify the print command, along with the required print options. For example, `print landscape=y color=y pages=1-3 copies=5 duplex=y media=A3#Test Mail`.
-

7 iPrint Appliance System Configuration

The Novell iPrint Appliance Management Console allows you to change configuration settings for iPrint Appliance, such as administrative passwords to the appliance, network settings, certificate settings, and perform administration of iPrint Appliance.

To access the Appliance System Configuration page:

- 1 On a Web browser, specify either the DNS name or the IP address. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Specify the *Username* and *Password*, then click *Log in*.
- 3 Click the *Appliance System Configuration* icon.

The Appliance System Configuration page displays the following options:

- ♦ [Section 7.1, “Administrative Passwords,” on page 51](#)
- ♦ [Section 7.2, “Network,” on page 52](#)
- ♦ [Section 7.3, “Time,” on page 52](#)
- ♦ [Section 7.4, “Digital Certificates,” on page 53](#)
- ♦ [Section 7.5, “Ganglia Configuration,” on page 54](#)
- ♦ [Section 7.6, “System Services,” on page 55](#)
- ♦ [Section 7.7, “Firewall,” on page 56](#)
- ♦ [Section 7.8, “Shutting Down and Restarting iPrint Appliance,” on page 56](#)
- ♦ [Section 7.9, “Signing Out of iPrint Appliance,” on page 56](#)

7.1 Administrative Passwords

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Click the *Appliance System Configuration* icon.



- 3 Click *Administrative Passwords*.
- 4 Specify new passwords for the root and vaadmin administrators.
If you are changing the root password, you must first specify the current root password.
- 5 Click *Save*.

NOTE: iPrint Appliance 1.0 does not support changing the eDirectory admin password.

7.2 Network

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, https://server_url:9443 or <http://<serverurl>/admin>.
- 2 Click the *Appliance System Configuration* icon.



- 3 Click *Network*.
- 4 Change the IP and DNS configuration settings for your Novell appliance.

IMPORTANT: Do not change any settings on the *Network* page. iPrint Appliance 1.0 does not support network settings changes after the initial iPrint Appliance configuration.

- 5 Click *Save*.

7.3 Time

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, https://server_url:9443 or <http://<serverurl>/admin>.
- 2 Click the *Appliance System Configuration* icon.



- 3 Click *Time*.
- 4 Change the time configuration options as necessary:
 - NTP Server:** Specify the NTP server that you want to use for time synchronization.
 - Region:** Select the region where your Novell Appliance is located.
 - Time Zone:** Select the time zone where your Novell Appliance is located.
- 5 Click *Save*.

7.4 Digital Certificates

The Novell Appliance ships with a self-signed digital certificate. Instead of using this self-signed certificate, you should use a trusted server certificate that is signed by a trusted certificate authority (CA) such as VeriSign or Equifax.

The certificate works for both the Novell Appliance and the iPrint software (ports 9443 and 8443). You do not need to update your certificate when you update the iPrint Appliance software.

Complete the following sections to change the digital certificate for your Novell Appliance. You can use the digital certificate tool to create your own certificate and then have it signed by a CA, or you can use an existing certificate and key pair if you have one that you want to use.

- [Section 7.4.1, “Getting Your Certificate Officially Signed,” on page 53](#)
- [Section 7.4.2, “Using an Existing Certificate and Key Pair,” on page 53](#)
- [Section 7.4.3, “Activating the Certificate,” on page 54](#)

7.4.1 Getting Your Certificate Officially Signed

- 1 On the Digital Certificates page, select the certificate that you just created, then click *File > Certificate Requests > Generate CSR*.
- 2 Complete the process of emailing your digital certificate to a certificate authority (CA), such as Verisign.

The CA takes your Certificate Signing Request (CSR) and generates an official certificate based on the information in the CSR. The CA then mails the new certificate and certificate chain back to you.
- 3 After you have received the official certificate and certificate chain from the CA:
 - 3a Revisit the Digital Certificates page by clicking *Digital Certificates* from the Novell Appliance.
 - 3b Click *File > Import > Trusted Certificate*. Browse and select the trusted certificate chain that you received from the CA, then click OK.
 - 3c Select the self-signed certificate, then click *File > Certification Request > Import CA Reply*.
 - 3d Browse to and upload the official certificate to be used to update the certificate information.

On the Digital Certificates page, the name in the *Issuer* column for your certificate changes to the name of the CA that stamped your certificate.
- 4 Activate the certificate, as described in [Section 7.4.3, “Activating the Certificate,” on page 54](#).

7.4.2 Using an Existing Certificate and Key Pair

When you use an existing certificate and key pair, use a .P12 key pair format.

- 1 Go to the Digital Certificates page by clicking *Digital Certificates* from the Novell Appliance.
- 2 On the Digital Certificates page, in the Key Store drop-down menu, select *JVM Certificates*.
- 3 Click *File > Import > Trusted Certificate*. Browse and select your existing certificate, then click OK.
- 4 Click *File > Import > Trusted Certificate*. Browse and select your existing certificate chain for the certificate that you selected in [Step 3](#), then click OK.

- 5 Click *File > Import > Key Pair*, then browse to and select your .P12 key pair file, specify your password if needed, then click OK.
- 6 Continue with [Section 7.4.3, “Activating the Certificate,” on page 54](#).

7.4.3 Activating the Certificate

- 1 On the Digital Certificates page, in the Key Store drop-down menu, select *Web Application Certificates*.
- 2 Select the certificate that you want to make active, click *Set as Active*, then click Yes.
- 3 Verify that the certificate and the certificate chain were created correctly by selecting the certificate, then clicking *View Info*.

NOTE: When you activate a certificate, the *Set as Active* button may still be enabled for that certificate. You can ignore it as it does not affect the certificate activation.

7.5 Ganglia Configuration

Ganglia is a scalable, distributed monitoring system that allows you to gather important information about your iPrint Appliance system.

- 1 On a web browser, use either the DNS name or the IP address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Click the *Appliance System Configuration* icon.



- 3 Click *Ganglia Configuration*.
- 4 As necessary, change the following Ganglia configuration options:
 - ♦ **Enable the Web interface to run on this machine:** Select this option to allow the Ganglia Web Interface to run on the same machine as iPrint Appliance.
If you already have a monitoring system that you plan to use for iPrint Appliance, you can disable Ganglia monitoring by deselecting this option and the following option.
 - ♦ **Enable Ganglia Monitoring:** Select this option to enable Ganglia to monitor iPrint Appliance.
 - ♦ **Multicast Mode:** Select this option to send monitoring information to multiple destinations.
 - ♦ **Unicast Mode:** Select this option to send monitoring information to a single destination.
 - ♦ **Publish to:** Specify the URL where Ganglia sends monitoring information when it is running in Unicast mode.
- 5 Click *Save*.

For more information about how to use Ganglia monitoring with iPrint Appliance, see [Chapter 11, “Monitoring iPrint Appliance Performance with Ganglia,” on page 73](#).

7.6 System Services

This section describes the actions you can perform to the system services.

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Click the *Appliance System Configuration* icon.



- 3 Click *System Services*.
- 4 You can perform the following actions:
 - [Section 7.6.1, “Starting, Stopping, or Restarting System Services,” on page 55](#)
 - [Section 7.6.2, “Setting System Services to Automatic or Manual,” on page 55](#)
 - [Section 7.6.3, “Downloading Log Files for System Services,” on page 55](#)

7.6.1 Starting, Stopping, or Restarting System Services

- 1 Select the service that you want to start, stop, or restart.
- 2 Click *Action*, then click *Start*, *Stop*, or *Restart*.
- 3 Click *Close* to exit System Services.

7.6.2 Setting System Services to Automatic or Manual

- 1 Select the service that you want to make automatic or manual.
- 2 Click *Action*, then click *Set as Automatic*, or *Set as Manual*.

7.6.3 Downloading Log Files for System Services

The Log Files section is not available on iPrint Appliance 1.0. However, you can view the log files on the server at the following locations.

Novell iPrint Mobile and iManager: `/var/opt/novell/tomcat6/logs/catalina.out`

Novell iPrint Mobile log: `/var/opt/novell/log/iprintmobile/iprintmobile0.log`

Management Console: `/var/opt/novell/jetty8/logs/jetty.stderrout.out`

Export Backup Log: `/var/opt/novell/log/iprintmobile/backup.log`

Upgrade Restore log: `/var/opt/novell/log/iprintmobile/restore.log`

Print Manager: `/var/opt/novell/log/iprint/ipsmd.log`

Driver Store: `/var/opt/novell/log/iprint/idsd.log`

eDirectory: `/var/opt/novell/eDirectory/log/ndsd.log`

Apache: /var/log/apache2/error_log

Avahi: /var/log/messages

7.7 Firewall

You can view your current firewall configuration directly from the iPrint Appliance:

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, https://server_url:9443 or <http://<serverurl>/admin>.
- 2 Click the *Appliance System Configuration* icon.



- 3 Click *Firewall*.

Port numbers are listed with the current status of each port number. This page is for informational purposes and is not editable.

For more information about port numbers in iPrint Appliance, see [Chapter 10, “Firewall Exceptions,”](#) on page 71.

7.8 Shutting Down and Restarting iPrint Appliance

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, https://server_url:9443 or <http://<serverurl>/admin>.
- 2 Click the *Appliance System Configuration* icon.



- 3 Click *Reboot* or *Shutdown*.

7.9 Signing Out of iPrint Appliance

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, https://server_url:9443 or <http://<serverurl>/admin>.
- 2 Specify the *Username* and *Password*, then click *Log in*.
- 3 In the upper-right corner of the page, next to the user name, click *Logout*.

NOTE: On the *Appliance System Configuration* and *iPrint Appliance Configuration* pages of iPrint Appliance, you can see the user name displayed along with the *Home* and *Logout* links. The *Home* link directs you to the iPrint Appliance main page, and the *Logout* link allows you to sign out of iPrint Appliance.

8 iPrint Appliance Management

The Novell iPrint Appliance Management Console allows you to add and manager printers, check the printer status, create printer maps, and monitor iPrint Appliance.

To access the Management Console, on a Web browser, specify either the DNS name or the IP address. For example, https://server_url:9443 or <http://<serverurl>/admin>.

The iPrint Appliance Management Console page displays the following options:

- ♦ [Section 8.1, “iPrint Appliance Configuration,” on page 59](#)
- ♦ [Section 8.2, “iPrint Printer Configuration \(iManager\),” on page 66](#)
- ♦ [Section 8.3, “iPrint Printer Status,” on page 66](#)
- ♦ [Section 8.4, “iPrint Printer Import / Migration,” on page 66](#)
- ♦ [Section 8.5, “iPrint Map Creation,” on page 66](#)
- ♦ [Section 8.6, “Ganglia,” on page 67](#)

8.1 iPrint Appliance Configuration

The iPrint Appliance Configuration page contains the following options:

- ♦ [Section 8.1.1, “Mobile Configuration,” on page 59](#)
- ♦ [Section 8.1.2, “Printers,” on page 61](#)
- ♦ [Section 8.1.3, “Renderers,” on page 62](#)
- ♦ [Section 8.1.4, “Services,” on page 62](#)
- ♦ [Section 8.1.5, “Export Configuration,” on page 62](#)
- ♦ [Section 8.1.6, “LDAP Import,” on page 62](#)
- ♦ [Section 8.1.7, “License,” on page 66](#)

8.1.1 Mobile Configuration

On the Mobile configuration page, you can configure Email printing, Printer Defaults, and Renderer Options.

Email Configuration

iPrint Appliance can be configured to accept print jobs through email messages and attachments. When configured for email printing, iPrint Appliance becomes a client to an email server. Email account inbox(es) are polled for incoming print jobs, which are routed to the intended printer. Email accounts must be created and functional prior to their association with Novell iPrint Appliance.

Enable email-based printing: Select this option to enable email printing. A global email address can be assigned for all printers. The global email address feature requires access to an email account such as GroupWise, Exchange, Lotus Notes or Gmail.

The following fields are used by iPrint Appliance to describe and access the global email account:

Email address: Specify the full email address for global print jobs. iPrint Appliance polls the inbox of this email address looking for print jobs. When an email-based job arrives, the subject line is parsed to determine the printer to which the job is sent. For example, print@example.com.

Account Username: Specify the user name for Novell iPrint Appliance to log in to the email server to access the global email account. For example, iprint.

Account Password: Specify the password for Novell iPrint Appliance to log in to the email server to access the global email account.

Re-type Password: Confirm the account password.

Incoming Mail Server: Specify the address of the incoming mail server for the email account. For example, imap.example.com.

Incoming Server Type: Novell iPrint Appliance supports POP and IMAP protocols to poll for incoming print jobs. Select POP or IMAP depending on the protocol that your email server supports.

Outgoing (SMTP) Mail Server: Specify the address of the outgoing mail server for the above email account. For example, smtp.example.com. Novell iPrint Appliance uses the SMTP protocol to send email back to users who submit email-based print jobs to report their job status. In order to support Novell iPrint Appliance, the email server you select must support the SMTP protocol.

Enable Mail-body Printing: With email-based printing, attachments are always printed. This option allows the email message body to also be printed. It is enabled by default.

NOTE: Each instance of iPrint Mobile service must be configured with a unique email address, which cannot be shared with other instances of mobile service. Similarly, an email address used for a particular printer (per printer email configuration) cannot be shared for any other printer or mobile service.

Printer Defaults

Printer features managed by Novell iPrint Appliance can be enabled and disabled. The fields in this section are the default values for newly added printers. As each printer is added, these values can be modified.

Paper Size: Select *Letter* or *A4*.

Orientation: Select between *Landscape* or *Portrait* printing orientation.

Enable Duplex Printing: Duplex printing allows automatic printing of a sheet of paper on both sides. Print devices without this capability can only print on a single side of paper (simplex printing).

Enable Color Printing: Color (or Colour) printing prints the documents in color, as opposed to monochrome (black and white) printing.

Renderer Options

Print jobs arrive from iPrint clients in a variety of file formats. By default, these files are rendered to a format that can be printed (by the target printer) using LibreOffice. However, there are several file formats that are not perfectly rendered by LibreOffice. To provide a more precise rendering, one or more external “Novell iPrint Windows Renderers” must be installed and configured on a Windows 7 64-bit machine.

External renderers connect to Novell iPrint Appliance and poll the un-rendered print jobs queue for files that the external renderer can more expertly render. The rendered jobs are then returned to Novell iPrint Appliance for printing.

For the external renderer to connect to Novell iPrint Appliance, an Authentication Key is required. If the external renderer's Authentication Key matches the Authentication Key specified in this field, the external renderer is granted access to poll the un-rendered print jobs.

The Authentication Key can be a combination of a string of characters. The key is used to authorize an external document renderer with iPrint Appliance.

8.1.2 Printers

The Printers page lists all printers currently managed by iPrint Appliance (created using iManager). You can enable a printer for AirPrint, Email printing, and IPP printing. Select a printer, click the *AirPrint* or *Mobile* drop-down menu, then click *Enable*.

You can also assign a specific email address to each printer by clicking the *Configure* drop-down menu, then clicking *Private Email Settings*. When configured for private email printing, iPrint Appliance becomes a client to an email server. You must provide the following information to enable a private email address for the printer:

Account	<ul style="list-style-type: none">♦ Email Address: Specify the full email address of the mailbox to be polled for the print jobs. When an email-based job arrives, the print job is processed to the printer. For example, print@example.com.♦ Username: Specify the user name to be used by iPrint Appliance to log in to the email server to access the private printer email account. For example, iprint.♦ Password: Specify the password for iPrint Appliance to log in to the email server to access the private printer email account.♦ Retype Password: Confirm the account password.
Server	<ul style="list-style-type: none">♦ Incoming Mail Server: Specify the address of the incoming email server for the email account. For example, imap.example.com.♦ Outgoing Mail Server: Specify the address of the outgoing email server for the email account. For example, smtp.example.com.♦ Access Method: iPrint Appliance supports two different protocols to poll for incoming print jobs. Select POP or IMAP depending on the protocol your email server supports.

NOTE: An email address used for a particular printer (per-printer email configuration) cannot be shared for any other printer or mobile service.

IMPORTANT: If you configure a printer for private email printing, then disable the printer for Mobile printing, the private email configuration settings are deleted. If you want to enable private email printing in future, you must specify the information manually.

8.1.3 Renderers

The Renderers page allows you to download iPrint Windows Renderer. The page also displays all document renderers registered with iPrint Appliance.

8.1.4 Services

The Services pages displays the system services that are required for iPrint Appliance. To enable or disable a service, select a service on the page, click the *Action* drop-down menu, then click *Start*, *Stop*, or *Restart*.

You can set the *Startup Type* of the services to Automatic or Manual by clicking the *Options* drop-down menu, then clicking *Set as Automatic* or *Set as Manual*.

To refresh the information on the page, click *Refresh List*.

8.1.5 Export Configuration

The Export Configuration page allows you to create a backup of the iPrint Appliance configuration. The configuration information is exported to the `iprintconfig.zip` file. This file can be used when upgrading iPrint Appliance or installing a new copy.

NOTE: Log files are not backed up when exporting the configuration file. If you want to backup files and folders that are not backed up by default, you must add the path of those files manually into the `additionalBackupList` file located at `/etc/opt/novell/iprintmobile/conf/additionalBackupList/`.

To export the configuration, provide the *eDirectory administrator Password*, then click *Export*. When upgrading to a new iPrint Appliance, you must use the eDirectory administrator password.

NOTE: The eDirectory administrator is usually the admin user `cn=admin,o=iPrintappliance`.

For information on upgrading iPrint Appliance, see [Section 3.1.2, "Upgrade," on page 20](#).

NOTE: Any configuration change in iPrint Appliance takes at least 20 minutes to get updated to the configuration file. If you export the iPrint Appliance configuration file within 20 minutes of modifying the configuration settings, and then import the configuration file into another copy of iPrint Appliance, the changes are not captured. In this case, you might not be able to view the updated information in the iPrint Appliance. We recommend that you wait at least 20 minutes after the last configuration change before you export the configuration file.

8.1.6 LDAP Import

To create an iPrint Appliance user account, you can synchronize initial user information from your network directory service (Novell eDirectory or Microsoft Active Directory service) after you have installed the iPrint Appliance software. Over time, you can continue to synchronize user information from the LDAP directory to your iPrint Appliance.

NOTE: When you synchronize user information into iPrint Appliance from a source LDAP directory service, the entire Base DN on the source is imported into iPrint Appliance. For example, if you sync the context `o=users` from an LDAP source, the same `o=users` context is created in iPrint Appliance.

IMPORTANT:

- ♦ iPrint Appliance performs one-way synchronization from the LDAP directory. If you change user information in iPrint Appliance, the changes are not synchronized back to your LDAP directory. It is recommended that you do not change synced LDAP user information on iPrint Appliance.
- ♦ iPrint Appliance does not support multi-value attributes. If your LDAP directory contains multi-value attributes, iPrint Appliance recognizes only the first attribute. For example, if your LDAP directory contains multiple email addresses for a given user, only the first email address is synchronized to iPrint Appliance.
- ♦ LDAP import does not sync user passwords to iPrint Appliance. Authentication requests from the mobile app are redirected to the defined LDAP source. If a user password is changed on the LDAP source, you do not need to update the same password on iPrint Appliance.
- ♦ The LDAP source IP or DNS name must be always active for iPrint Appliance to authenticate users.

You can configure multiple LDAP connections. To create a new LDAP connection, click *Add a New LDAP Source* on the LDAP Import page.

For information on importing certificates into iPrint Appliance when using LDAPS, see the knowledge base article: [How to enable SSL to Teaming LDAP Synchronization and Authentication](#).

Each connection requires the following configuration information:

- ♦ [“LDAP Server URL” on page 63](#)
- ♦ [“User DN \(Proxy User for Synchronizing Users and Groups\)” on page 64](#)
- ♦ [“LDAP Attribute to Identify a User or Group” on page 64](#)
- ♦ [“LDAP Attribute for iPrint Appliance User Name” on page 64](#)
- ♦ [“User and Group Object Locations” on page 65](#)
- ♦ [“LDAP Synchronization” on page 66](#)

LDAP Server URL

In order to synchronize initial user information, iPrint Appliance must access an LDAP server where your directory service is running. You must provide the hostname of the server, using a URL with the following format:

```
ldap://hostname
```

If the LDAP server requires a secure SSL connection, use the following format:

```
ldaps://hostname
```

If the LDAP server is configured with a default port number (389 for non-secure connections or 636 for secure SSL connections), the port number is not required in the URL. If the LDAP server uses a different port number, use the following format for the LDAP URL:

```
ldap://hostname:port_number  
ldaps://hostname:port_number
```

If the LDAP server requires a secure SSL connection, additional setup is required. You must import the root certificate for your LDAP directory into the Java KeyStore (JVM Certificates) from *Management Tools > Appliance System Configuration > Digital Certificates* on the iPrint server, before you configure iPrint Appliance for LDAP synchronization.

User DN (Proxy User for Synchronizing Users and Groups)

To sync users into iPrint Appliance, you must provide the user name and password of a user who has sufficient rights to access the user information on the LDAP server.

In your LDAP directory tree, you must provide the fully qualified, comma-delimited user name, along with its context, in the format expected by your directory service.

Directory Service	Format for the User Name
eDirectory	<code>cn=username,ou=organizational_unit,o=organization</code>
Active Directory	<code>cn=username,cn=organizational_unit,dc=domain_component</code> or <code>cn=username,ou=organizational_unit,dc=domain_component</code>

LDAP Attribute to Identify a User or Group

The LDAP attribute that uniquely identifies a user or group helps facilitate renaming and moving iPrint users and groups in the LDAP directory. If this attribute is not set, and you rename or move a user in the LDAP source directory, iPrint Appliance assumes that the new name (or the new location of the same name) represents a new user, not a modified user, and creates a new iPrint Appliance user.

For example, you have an iPrint user with a given name of William Jones. If William changes his name to Bill, and you make that change in the LDAP directory, iPrint Appliance creates a new user named Bill Jones.

To ensure that iPrint Appliance modifies the existing user instead of creating a new user when the user is renamed or moved in the LDAP directory, you must specify the name of the LDAP attribute that uniquely identifies the user. For eDirectory, this value is `GUID`. For Active Directory, this value is `objectGUID`. This attribute always has a unique value that does not change when you rename or move a user in the LDAP directory. If you want to map users to a different attribute, you must ensure that the attribute that you use is a binary attribute. For example, the `cn` attribute cannot be used because it is not a binary attribute.

LDAP Attribute for iPrint Appliance User Name

The setting *LDAP Attribute Used for iPrint Appliance User Name* is used for two purposes:

- ♦ The value is used as the iPrint Appliance user name when the user is first provisioned from LDAP. The value of this attribute must be unique.
- ♦ During iPrint Appliance login, iPrint Appliance uses this attribute to locate the user in the LDAP directory, and then tries to authenticate as that user.

LDAP directories differ in the LDAP attribute used to identify a User object. Both eDirectory and Active Directory may use the `cn` (common name) attribute. A more sure alternative for Active Directory is to use the `sAMAccountName` attribute. Other LDAP directories may use the `uid` (unique ID) attribute, depending on the structure and configuration of the directory tree.

You must consult with your directory administrator in order to determine the best attribute to use. In some cases where not all users are being imported successfully, you must set up two LDAP sources pointing to the same LDAP server and have each source use a different value for the *LDAP Attribute Used for iPrint Name*. For example, set up one LDAP source and use `cn` as the *LDAP Attribute Used for iPrint Name*, and then set up a separate source to the same LDAP server and use `sAMAccountName` as the *LDAP Attribute Used for iPrint Name*.

In addition to the attributes already mentioned in this section, other LDAP attributes can be used for the *LDAP Attribute Used for iPrint Name*, as long as the attribute is unique for each User object. For example, the `mail` LDAP attribute on User objects can be used to enable iPrint Appliance users to log in by using their email addresses.

User and Group Object Locations

iPrint Appliance can find and synchronize initial user information from User objects located in one or more containers in the LDAP directory tree. A container under which User objects are located is called a base DN (distinguished name). The format you use to specify a base DN depends on your directory service.

Directory Service	Format for the User Container
eDirectory	<code>ou=organizational_unit,o=organization</code>
Active Directory	<code>ou=organizational_unit,dc=domain_component</code> or <code>cn=organizational_unit,dc=domain_component</code>

To identify potential iPrint users, iPrint Appliance by default filters on the following LDAP directory object attributes:

- ♦ `Person`
- ♦ `orgPerson`
- ♦ `inetOrgPerson`

If you want to create iPrint groups based on information in your LDAP directory, iPrint Appliance filters on the following LDAP directory object attributes:

- ♦ `group`
- ♦ `groupOfNames`
- ♦ `groupOfUniqueNames`

You can add attributes to the user or group filter list if necessary. You can use the following operators in the filter:

- ♦ `|` OR (the default)
- ♦ `&` AND
- ♦ `!` NOT

You can choose whether you want iPrint Appliance to search for users (and optionally, groups) in containers below the base DN (that is, in subtrees).

You can create a group that consists of all the users that you want to set up in iPrint Appliance, regardless of where they are located in your LDAP directory. After you create the group, you can use the following filter to search for User objects that have the specified group membership attribute:

```
(groupMembership=cn=group_name,ou=organizational_unit,o=organization)
```

IMPORTANT: Ensure that you include parentheses in your filter.

LDAP Synchronization

Synchronization options apply to all LDAP configurations.

You can perform LDAP synchronization every day, or on specific days of the week. You can also perform a sync once a day at a specified time, or multiple times each day. The smallest time interval you can set is .25 hours (every 15 minutes).

To synchronize users and groups immediately, select *Run Immediately*.

NOTE: If you want to delete users that are synced from a particular LDAP source, you must delete the LDAP source connection, then run an LDAP sync. When you delete an LDAP source, the users and groups from that context are deleted, while the context itself is retained.

8.1.7 License

For information on iPrint Appliance Licensing, see [Chapter 9, “License Information,”](#) on page 69.

8.2 iPrint Printer Configuration (iManager)

iManager is a tool that allows you to manage your print environment. You can create printers, printer drivers, profiles, and create users. You can also manage workstations.

For more information about managing your print system using iManager, see *Managing Your Print System* section in the [iPrint Administration Guide](#).

8.3 iPrint Printer Status

The iPrint Printer Status tool provides a global view of your print system. The tool displays the current status of Printer Agents, and lets you configure settings and generate reports about your print system.

For more information about the iPrint Printer Status tool, see the [iPrint Manager Health Monitor Administration Guide](#).

8.4 iPrint Printer Import / Migration

The iPrint Printer Import link provides information on how to migrate printers from an existing OES iPrint system or iPrint Appliance.

8.5 iPrint Map Creation

You can use the iPrint Map Designer to create a map displaying the location of printers. Users can identify and install the printers that are nearest to their location.

For more information about creating a map, see [Setting Up Location-Based Printing](#) in the [iPrint Linux Administration Guide](#).

8.6 Ganglia

Ganglia is a scalable, distributed monitoring system that allows you to gather important metric data about the performance of your iPrint Appliance. The default metrics that you can monitor are processor, disk, load, memory, network, and process.

For information about how to configure Ganglia for your environment, including changing from multicast mode to unicast mode, see [Section 7.5, “Ganglia Configuration,” on page 54](#).

9 License Information

On the License page of iPrint Appliance, you can view information about your current iPrint license.

- ♦ [Section 9.1, “Accessing the License Page,” on page 69](#)
- ♦ [Section 9.2, “Updating iPrint Appliance License,” on page 69](#)

9.1 Accessing the License Page

You can access the License page of iPrint Appliance by using the Management Console. To access the License page:

- 1 On a Web browser, specify either the DNS name or the IP address of iPrint Appliance. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Log in using admin or root credentials.
- 3 Click the *iPrint Appliance Configuration* icon.
- 4 Under *Administration*, click *License*.

iPrint ships with a 60-day evaluation license. You must update this license to a full product license.

On the License page, the *Current License Information* section displays information about your current iPrint license, including the date it was issued and the number of days from the issue date that the license is valid.

9.2 Updating iPrint Appliance License

To update your iPrint Appliance license:

- 1 On the system which you have installed iPrint Appliance, navigate to `/opt/novell/filr/apache-tomcat/webapps/ssf/WEB-INF/license`.
- 2 Download the iPrint Appliance license file, then copy it to the directory `/opt/novell/filr/apache-tomcat/webapps/ssf/WEB-INF/license`.

IMPORTANT: If you are running multiple copies of iPrint Appliance, you must update the license for each copy of iPrint Appliance individually.

10 Firewall Exceptions

If you have a firewall, you must allow the port numbers listed below to ensure that you have a seamless experience with iPrint Appliance.

- ♦ [Section 10.1, “Inbound Connections to iPrint Appliance,” on page 71](#)
- ♦ [Section 10.2, “Outbound Connections from iPrint Appliance,” on page 71](#)

10.1 Inbound Connections to iPrint Appliance

To allow printing access to your end-users from a public network, you must allow the following ports:

- ♦ 80 - HTTP
- ♦ 443 - HTTPS
- ♦ 631 - IPP

To allow iPrint Appliance access to your administrators, you must allow the following ports:

- ♦ 80 - HTTP
- ♦ 443 - HTTPS
- ♦ 636 - LDAPS
- ♦ 389 - LDAP
- ♦ 524 - NCP
- ♦ 631 - IPP
- ♦ 9443 - Management Console
- ♦ 515 - LPR
- ♦ 22 - SSH
- ♦ 5353 - mDNS/UDP (AirPrint)
- ♦ 8080, 8081, 8443, 8444, and 8649 (Ganglia Configuration)

10.2 Outbound Connections from iPrint Appliance

iPrint Appliance uses the following ports to access external applications:

- ♦ 636 and 389 - For LDAP Import and user authentication to the configured LDAP sources
- ♦ 80, 524, 443, 631, 636, and 389 - To access the source server for printer migration
- ♦ 5353 - To access the wireless network to advertise AirPrint printers
- ♦ 161, 515, and 9100 - To access printers

11 Monitoring iPrint Appliance Performance with Ganglia

Ganglia is a scalable, distributed monitoring system that allows you to gather important metric data about the performance of your iPrint Appliance. The default metrics that you can monitor are processor, disk, load, memory, network, and process.

Ganglia is not enabled by default. To monitor iPrint Appliance using Ganglia, you must enable Ganglia Configuration in the Appliance System Configuration page of the iPrint Appliance Management Console. For information in how to enable Ganglia Configuration, see [Section 7.5, “Ganglia Configuration,” on page 54](#).

To view Ganglia monitoring of your iPrint Appliance system:

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Click the *Ganglia* icon.
An overview of all the nodes in the cluster, including information such as processor utilization, memory, load, and so forth is displayed.
- 3 In the *Grid-Node* drop-down list, select a node that you want to monitor.
or
Scroll to the bottom of the page and click a node to get server information for your iPrint Appliance.

For information about how to configure Ganglia for your environment, including changing from multicast mode to unicast mode, see [Section 7.5, “Ganglia Configuration,” on page 54](#).

12 Advanced Configuration for iPrint Mobile Service (Optional)

Besides the Management Console, there are a few additional parameters that can be configured to fine-tune the iPrint Mobile service, based on your network and printing requirements. The iPrint Appliance Server Configuration file, located at `/etc/opt/novell/iprintmobile/conf/iprintmobile.conf`, allows you to customize the iPrint Mobile service per your requirements.

You must configure the `iprintmobile.conf` file manually. When assigning a value to any parameter, ensure that you uncomment the line, in order for the changes to take effect. After configuring the file, you must restart the iPrint Mobile service through the Management Console.

The iPrint Appliance Server Configuration file contains the following information:

NOTE: The advanced configuration is optional. For most environments, the configuration does not require modifications.

Table 12-1 *iPrint Appliance Server Configuration File Contents*

Parameter	Default Value	Function
office_port	8100	Office background instance listens to this port number.
home_directory	<code>/var/opt/novell/iprintmobile</code>	A directory on the file system that is used to store the data. This folder contains the service metadata and temporary job data.
conversion_wait_time	60	Duration of time (in seconds) that the job submission threads wait for the job conversion threads.
db_backup_interval	10000	Duration (in milliseconds) after which the database is backed up on the disk.
is_test_setup	false	Set this flag if the server is being set up for testing, and no dedicated email address is available. Print job requests are read-only from the Cabinet folder.
job_submission_thread_timeout	60	Duration of time for which an excess idle thread waits before terminating.

Parameter	Default Value	Function
delete_completed_job_data	true	<p>Deletes the converted email print job data stored at <code>/var/opt/novell/iprintmobile/jobs/</code>. Set the value to <i>false</i> to retain the converted job data for email print jobs.</p> <p>The <code>/var/opt/novell/iprintmobile/jobs/</code> folder does not maintain the IPP job data. IPP job data includes job data from the Novell iPrint app and Airprint. The job data for apps and AirPrint are stored in the PA spool directory of the Print Manager.</p> <p>WARNING: If you set the value to <i>false</i>, you must ensure that you delete the print job data regularly to free up disc space. If the disk space gets full, then email print jobs are not processed.</p>
fallback_to_local_converter	false	If the remote renderer fails, you can run the job through a local converter.
num_email_receiver_threads	0	Configure this parameter to the maximum number of threads to be used for processing multiple mailboxes. By default (when set to 0), the number of threads to email addresses ratio is 1:5 (1 thread per 5 email addresses).
use_global_address_for_notifications	false	By default, notifications are sent from the printer-specific email address. Change the value to 'true' if you want to send notifications to users using the global email address.
renderer_time_out	30000	Duration (in milliseconds) after which a registered renderer times out and moves to an inactive state.
verify_certificates	false	Disable certificate validation.
renderingOnlyServiceEnabled	true	RenderOnly Configuration
backendRenderingPollingInterval	500	Backend Rendering Polling Interval (in milliseconds)
email_polling_interval	30000	Configures the interval (in milliseconds) at which emails are fetched from mail servers.
subject_optional_for_printer_specific_emails	true	Stops printing emails without the correct iPrint email print command. By default this value is 'true'. Emails forwarded to the printer-specific email address, with or without a subject line, are printed.
email_reconnect_interval	30	If the email server is unavailable, iPrint Appliance tries to reconnect to the email server after the specified duration (in seconds).

13 Backup and Restore iPrint Appliance

You can backup the configuration file of iPrint Appliance to protect against system or hard drive crashes. You can also use the backup to transfer the configuration to another iPrint Appliance, or quickly restore iPrint Appliance in case of an eventuality.

13.1 Backup iPrint Appliance

You can backup iPrint Appliance through the Management Console.

- 1 On a web browser, use either the DNS name or the IP Address to access the Management Console. For example, https://server_url:9443 or <http://<serverurl>/admin>.

NOTE: Ignore the security certificate warning, and continue to the iPrint Appliance Management Console.

- 2 Specify `vaadmin` or `root` as the user name.
- 3 Specify the password.
The Management Console page is displayed.
- 4 Click the *iPrint Appliance Configuration* icon.
- 5 Under *Administration*, click *Export Configuration*.
- 6 Specify the *eDirectory administrator Password*, then click *Export*.

The *iprintconfig.zip* file is created. This is the backup file. The backup file contains the configuration information.

13.2 Restore iPrint Appliance

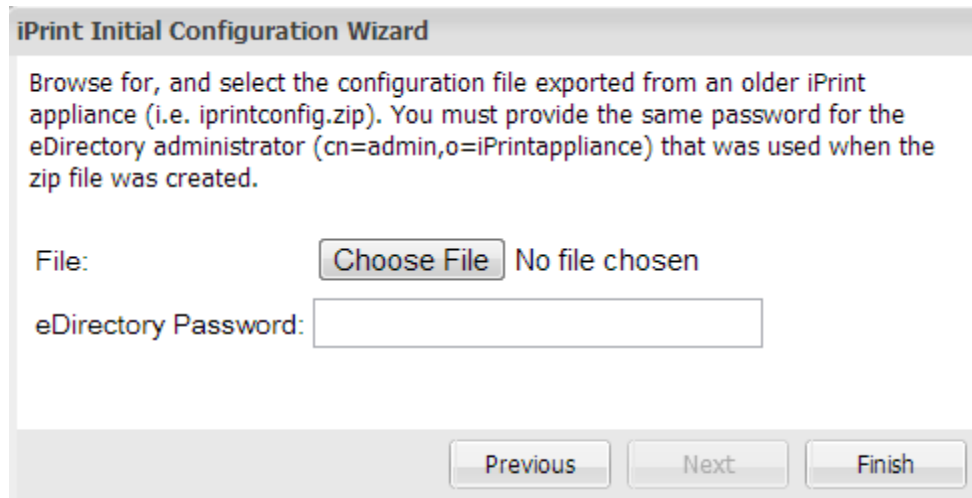
If you want to restore iPrint Appliance, you must reinstall iPrint Appliance, then follow the procedure below. To reinstall iPrint Appliance, see [Chapter 2, “Installing iPrint Appliance,” on page 13](#).

- 1 On a web browser, use either the DNS name or the IP Address to access the Management Console. For example, https://server_url:9443 or <http://<serverurl>/admin>.

NOTE: Ignore the security certificate warning, and continue to the iPrint Appliance Management Console.

- 2 Specify `vaadmin` or `root` as the user name.
- 3 Specify the password.
The Management Console page is displayed.
- 4 Click *iPrint Appliance Configuration*.
The *iPrint Initial Configuration Wizard* window is displayed.

- 5 Choose *Upgrade*, then click *Next*.
- 6 In the *File* option, click *Choose File*, then select the configuration file exported from a previous copy of iPrint Appliance.



The image shows a screenshot of the 'iPrint Initial Configuration Wizard' dialog box. The title bar reads 'iPrint Initial Configuration Wizard'. The main text area contains the instruction: 'Browse for, and select the configuration file exported from an older iPrint appliance (i.e. iprintconfig.zip). You must provide the same password for the eDirectory administrator (cn=admin,o=iPrintappliance) that was used when the zip file was created.' Below this text, there are two input fields. The first is labeled 'File:' and contains a 'Choose File' button followed by the text 'No file chosen'. The second is labeled 'eDirectory Password:' and is an empty text box. At the bottom of the dialog, there are three buttons: 'Previous', 'Next', and 'Finish'.

- 7 Specify the *eDirectory Password* that you provided when exporting the configuration file from the previous copy of iPrint Appliance.
- 8 Click *Finish*.

14 Troubleshooting iPrint Appliance

You may encounter the following issues when using iPrint Appliance.

NOTE: The iPrint Appliance print server maintains log files to help with debugging the server's activity. The log files are located at the following locations:

- ♦ Novell iPrint Mobile and iManager: `/var/opt/novell/tomcat6/logs/catalina.out`
- ♦ Novell iPrint Mobile log: `/var/opt/novell/log/iprintmobile/iprintmobile0.log`
- ♦ Management Console: `/var/opt/novell/jetty8/logs/jetty.stderrout.out`
- ♦ Export Backup Log: `/var/opt/novell/log/iprintmobile/backup.log`
- ♦ Upgrade Restore log: `/var/opt/novell/log/iprintmobile/restore.log`
- ♦ Print Manager: `/var/opt/novell/log/iprint/ipsmd.log`
- ♦ Driver Store: `/var/opt/novell/log/iprint/idsd.log`
- ♦ eDirectory: `/var/opt/novell/eDirectory/log/ndsd.log`
- ♦ Apache: `/var/log/apache2/error_log`
- ♦ Avahi: `/var/log/messages`

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- ♦ [Section 14.1, “iPrint Mobile Service Fails to Connect,” on page 80](#)
 - ♦ [Section 14.2, “Unable to Import All Users From the Active Directory Source Using LDAP Sync,” on page 80](#)
 - ♦ [Section 14.3, “iPrint Windows Rendering Service Hangs,” on page 80](#)
 - ♦ [Section 14.4, “iPrint Rendering Service Registration to the Appliance Server Fails,” on page 81](#)
 - ♦ [Section 14.5, “iPrint Renderer Status Is Inactive after Exporting or Upgrading iPrint Appliance,” on page 81](#)
 - ♦ [Section 14.6, “Printer Prints Junk Characters,” on page 82](#)
 - ♦ [Section 14.7, “Secure Printer Continues Printing after Changing the User Password \(Local Appliance eDirectory Users Only\),” on page 82](#)
 - ♦ [Section 14.8, “iPrint Windows Renderer Fails to Start Due to Login Failure,” on page 83](#)
 - ♦ [Section 14.9, “AirPrint Printers Are Listed Twice During Printer Discovery,” on page 83](#)
 - ♦ [Section 14.10, “AirPrint Printers Are Not Listed,” on page 83](#)
 - ♦ [Section 14.11, “Print Job Submitted Using AirPrint Shows Processing Continuously,” on page 84](#)
 - ♦ [Section 14.12, “Processor Utilization Increases When 10000 Users Are Imported from External LDAP Source,” on page 84](#)
 - ♦ [Section 14.13, “iPrint Appliance Migration Target Server SSL Authentication Fails,” on page 85](#)
 - ♦ [Section 14.14, “RPC Error When Enabling Printers for Mobile Printing,” on page 85](#)
 - ♦ [Section 14.15, “iPrintRenderCmd Stops Responding During Configuration or Other Command Line Operations,” on page 85](#)

- [Section 14.16, “Apache Services Fails to Use the Certificate Key Store,” on page 85](#)
- [Section 14.17, “Unable to Configure Email Printing When SSL is Enabled for IMAP in GroupWise,” on page 86](#)
- [Section 14.18, “Upgrade Progress Bar Continues Processing,” on page 86](#)
- [Section 14.19, “iPrint Rendering Service Fails to Start If the Windows User Account Password Changes or Expires,” on page 86](#)
- [Section 14.20, “License File Is Missing After iPrint Appliance Upgrade,” on page 87](#)
- [Section 14.21, “DataStore Creation Fails,” on page 87](#)
- [Section 14.22, “Garbage Characters Printed When Printing from Gmail on Internet Explorer,” on page 87](#)
- [Section 14.23, ““Canceled by Operator” Messages in the Audit Logs,” on page 87](#)
- [Section 14.24, “Printers not Listed in PSM After Upgrading iPrint Appliance,” on page 88](#)

14.1 iPrint Mobile Service Fails to Connect

The iPrint Mobile service might fail to connect if the Apache server has connectivity issues with Tomcat which is hosting the iPrint Mobile service.

To resolve this issue, restart the Apache service from the iPrint Appliance Management Console:

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Click the *iPrint Appliance Configuration* icon.
- 3 Click *Services*.
- 4 Select *Apache server for Novell for iPrint*.
- 5 Click the *Action* drop-down menu, then click *Restart*.

14.2 Unable to Import All Users From the Active Directory Source Using LDAP Sync

You might not be able to import all users from the Active Directory source using LDAP sync. By default, in Active Directory, LDAP search returns only 1000 objects. This issue is due to a default setting in Active Directory that limits LDAP searches to 1,000 results.

To work around this issue, you can use the `Ntdsutil.exe` tool to modify the *MaxPageSize* value to expand or limit the search, depending on the size of the Active Directory tree.

For more information, see the Microsoft support article on [How to view and set LDAP policy in Active Directory by using Ntdsutil.exe](#).

14.3 iPrint Windows Rendering Service Hangs

The iPrint Windows Rendering Service might hang with the service status “Stopping.”

This issue is caused when iPrint Windows Renderer fails to restart when using the configuration or registration commands.

To workaroud this issue:

- 1 Launch the *Windows Task Manager*.
- 2 Click the *Processes* tab.
- 3 Check the *Show processes from all users* box.
- 4 Right-click *iPrint Rendering Service.exe*, then click *End Process*.
- 5 Start the iPrint Windows Renderer service by using the `iprntrendcmd -l` command or through the window services panel.

14.4 iPrint Rendering Service Registration to the Appliance Server Fails

The iPrint Rendering Service registration to the Appliance server might fail if the Apache server has connectivity issues.

To resolve this issue, restart the Apache service from the iPrint Appliance Management Console:

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Click the *iPrint Appliance Configuration* icon.
- 3 Under *Administration*, click *Services*.
- 4 Select *Apache server for Novell for iPrint*.
The *Action* and *Options* drop-down menus are activated.
- 5 Click the *Action* drop-down menu, then click *Restart*.

14.5 iPrint Renderer Status Is Inactive after Exporting or Upgrading iPrint Appliance

When you upgrade or export iPrint Appliance, the iPrint Windows Renderer status might be "Inactive." To work around this issue, you must unregister and re-register iPrint Windows Renderer.

To unregister iPrint Windows renderer:

- 1 Launch the command prompt in the *Run as administrator* mode.
- 2 Run the command `iprntrendcmd.exe -u <iPrintAppliance DNS name or IP address> <authentication key>`.

To register iPrint Windows Renderer:

- 1 Launch the command prompt in the *Run as administrator* mode.
- 2 Run the command `iprntrendcmd.exe -r <iPrintAppliance DNS name or IP address> <authentication key>`.

14.6 Printer Prints Junk Characters

When trying to print any document, the printer might print only junk characters and not the actual content. This can be due to an incompatible printer driver.

To work around this issue, update the printer drivers to the latest version of HP Universal Print Driver for Windows - Postscript, or PCL drivers, depending on the compatibility with your printer. For information on updating printer drivers, see [Appendix D, "Printing to a PCL Printer," on page 97](#).

14.7 Secure Printer Continues Printing after Changing the User Password (Local Appliance eDirectory Users Only)

When users change their passwords, secure printers might continue printing with the old password for up to ten minutes. This is due to caching inside the iPrint LDAP authentication module, and affects only the users created inside the local eDirectory tree on iPrint Appliance.

To fix this issue, add the parameters `LDAPDNCacheTTL` and `LDAPDNCacheEntries` to the `iprint_g.conf` file, located at `/etc/opt/novell/iprint/httpd/conf/iprint_g.conf` as shown below:

To change the caching time to 30 seconds:

```
<IfModule mod_authnz_ldapdn.c>

    LDAPDNCacheTTL 30

</IfModule>
```

To disable caching:

```
<IfModule mod_authnz_ldapdn.c>

    LDAPDNCacheEntries -1

</IfModule>
```

After updating the `iprint_g.conf` file, launch the terminal window, then restart the Apache service using the iPrint Appliance Management Console:

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Click the *iPrint Appliance Configuration* icon.
- 3 Under *Administration*, click *Services*.
- 4 Select *Apache server for Novell for iPrint*.
The *Action* and *Options* drop-down menus are activated.
- 5 Click the *Action* drop-down menu, then click *Restart*.

14.8 iPrint Windows Renderer Fails to Start Due to Login Failure

The iPrint Windows Renderer service might not start if the credentials provided are incorrect, or if the user account does not have the *Log on as a service* rights.

To resolve this issue, you must assign the *Log on as a service* rights to the user account with which you want to setup the renderer, on the local machine:

- 1 Go to *Start > Control Panel > Administrative Tools > Local Security Policy*.
- 2 In the left pane, double-click *Local Policies*.
- 3 Click *User Rights Assignment*.
- 4 In the right pane, under *Policy*, double-click *Log on as a service*.
- 5 Click *Add User or Group*.
- 6 Add the user account to the list, then click *OK*.
- 7 Click *OK*, then close the Local Security Policy window.

14.9 AirPrint Printers Are Listed Twice During Printer Discovery

iPrint AirPrint uses the same advertising medium (mDNS) as that of Apple's AirPrint. Due to this, an AirPrint printer is listed twice during printer discovery.

To resolve this issue, disable the advertisement from iPrint Appliance.

To disable advertisements from iPrint Appliance:

- 1 On a web browser, use either the DNS name or the IP address to access the Management Console. For example, https://server_url:9443 or <http://<serverurl>/admin>.
- 2 Click the *iPrint Appliance Configuration* icon.
- 3 Under *Administration*, click *Printers*.
- 4 Select the printer for which you want to disable advertising. You can select multiple printers by holding the *Ctrl* key on your keyboard, then selecting the printers.
- 5 Click the *AirPrint* drop-down menu, then select *Disable Advertising*.

14.10 AirPrint Printers Are Not Listed

When trying to print, you might not be able to see any AirPrint printers listed.

To resolve this issue, try disabling and re-enabling the wireless connection on the iOS device. If you are still unable to view the printers, restart the Avahi service on the AirPrint server through the iPrint Appliance Management Console:

- 1 On a Web browser, use either the DNS name or the IP address to access the Management Console. For example, https://server_url:9443 or <http://<serverurl>/admin>.
- 2 Click the *iPrint Appliance Configuration* icon.
- 3 Under *Administration*, click *Services*.
- 4 Select *Avahi*.
The *Action* and *Options* drop-down menus are activated.
- 5 Click the *Action* drop-down menu, then click *Restart*.

14.11 Print Job Submitted Using AirPrint Shows Processing Continuously

On iOS devices, when you submit a print job, the Print Center continuously shows that the job is processing. This issue occurs when a printer to which the user is trying to print is redirected or not working.

To resolve this issue on a redirected printer, disable advertising on a redirected printer so that the printer is not displayed as an AirPrint printer. Advertise the target printer instead.

To resolve this issue on a printer that is not working, disable advertising and fix the printer before enabling advertising on the printer.

To disable advertisements from iPrint Appliance:

- 1 On a web browser, use either the DNS name or the IP address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Click the *iPrint Appliance Configuration* icon.
- 3 Under *Administration*, click *Printers*.
- 4 Select the printer for which you want to disable advertising. You can select multiple printers by holding the *Ctrl* key on your keyboard, then selecting the printers.
- 5 Click the *AirPrint* drop-down menu, then select *Disable Advertising*.
- 6 Fix the printer.
- 7 Click the *AirPrint* drop-down menu, then select *Enable Advertising*.

14.12 Processor Utilization Increases When 10000 Users Are Imported from External LDAP Source

When syncing users from an external LDAP source, the processor utilization increases if you try to import 10000 users.

The reason for this behavior is because the User Sync is scheduled to run every 8 minutes, by default. Due to this, every time the User Sync is started, which is every 8 minutes, the processor utilization increases to around 50%, and remains in that state for up to 5 minutes. The utilization may further increase if you import over 10000 users.

To workaround this issue, you can change the sync interval by editing the crontab file.

- 1 Launch the crontab file located at `/etc/crontab`.
- 2 Browse to the line where the sync interval is set to 8 minutes.

```
# run iprint migrate every 8 minutes
*/8 * * * * root /usr/bin/python/opt/novell/iprintmobile/python/migrate/
migrateUsers.pyc >> /var/log/ipmigrate.log 2>&1
```
- 3 Change the time to the desired time interval.

NOTE: For information on scheduling time intervals for cron jobs, see the article about [Cron](#) on Wikipedia.

14.13 iPrint Appliance Migration Target Server SSL Authentication Fails

iPrint Appliance Migration target server SSL authentication may fail at times.

To workaround this issue, close the *miggui* application and launch it again.

14.14 RPC Error When Enabling Printers for Mobile Printing

When enabling printers for Mobile printing using the iPrint Appliance Management Console, you may encounter an RPC error.

To workaround this issue, you can logout and login to the iPrint Appliance Management Console if the browser session is open for a long time, or you can refresh the Printers page. If you are still seeing the RPC error, restart the Print Manager service, then try to enable the printer for mobile printing.

To restart the Print Manager service:

- 1 On a web browser, use either the DNS name or the IP address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Click the *iPrint Appliance Configuration* icon.
- 3 Under *Administration*, click *Services*.
- 4 Select *Print Manager*.
The *Action* and *Options* drop-down menus are activated.
- 5 Click the *Action* drop-down menu, then click *Restart*.

14.15 iPrntRendCmd Stops Responding During Configuration or Other Command Line Operations

When using configuring or modifying iPrint Windows Renderer, the `iprntrendcmd` command may stop responding.

To workaround this issue, close the command prompt that is currently open, launch a new command prompt window, then try the `iprntrendcmd` command again.

14.16 Apache Services Fails to Use the Certificate Key Store

When you import CA signed or third-party certificates into iPrint Appliance using the Management Console, the Apache service continues to use the old certificates.

To workaround this issue, you must manually replace the certificates. Ensure that the certificate you want to replace is in the `.crt` format, and that you have the `.key` file.

- 1 Create a `.pem` file from the `.crt` and `.key` files by using the following commands:
 - 1a Run the command - `cat <path to .key file> <path to .crt file> > /etc/ssl/servercerts/servercert.pem.`
 - 1b Run the command - `cat <path to .key file> <path to .crt file> > /etc/ssl/servercerts/serverkey.pem.`
- 2 Restart the Apache service by using the command `rcapache2 restart`.

- 3 In the files `/etc/apache2/vhosts.d/vhost-ssl.conf` and `/etc/opt/novell/iprint/httpd/conf/iprint_g.conf`, add the following entry:
`SSLCertificateChainFile <path-to-intermediate-ca-certificate-file>`
- 4 Restart the Apache service by using the command `rcapache2 restart` and try again.

14.17 Unable to Configure Email Printing When SSL is Enabled for IMAP in GroupWise

If SSL is enabled for IMAP in Groupwise, you may be unable to configure email printing using the iPrint Appliance Management Console.

To workaround this issue, you must manually import the GroupWise certificate into iPrint Appliance using the Management Console.

- 1 On a web browser, use either the DNS name or the IP address to access the Management Console. For example, `https://server_url:9443` or `http://<serverurl>/admin`.
- 2 Click the *Appliance System Configuration* icon.
- 3 Click *Digital Certificates*.
- 4 In the *Key Store* drop-down menu, select *JVM Certificates*.
- 5 Go to *File > Import > Trusted Certificate*.
- 6 Browse and select the GroupWise certificate, specify an *Alias* name, then click *OK*.
- 7 Click *Close*.
- 8 Click *Reboot* to reboot iPrint Appliance.

After iPrint Appliance reboots, configure email printing from the iPrint Appliance Management Console.

14.18 Upgrade Progress Bar Continues Processing

When upgrading iPrint appliance using the iPrint Appliance Management Console, the progress bar continues processing. This issue is caused due to the automatic update feature of the Web browser.

To workaround this issue, close all open browser sessions, relaunch the browser, then wait for the browser update to complete before upgrading iPrint Appliance.

14.19 iPrint Rendering Service Fails to Start If the Windows User Account Password Changes or Expires

The iPrint Rendering Service may not work if the password of the user account associated with the service changes or expires.

To workaround this issue, you must update the new password for the iPrint Rendering Service on the Services utility.

- 1 Click *Start > Run*.
- 2 Specify `services.msc`, then click *OK*.
- 3 Right-click *iPrint Rendering Service*, then click *Properties*.
- 4 Click the *Log On* tab.

- 5 Under *This account*, update the new password, then click **Apply**.
- 6 Click **OK**.
- 7 Right-click *iPrint Rendering Service*, then click **Start** or **Restart** to start the service.

14.20 License File Is Missing After iPrint Appliance Upgrade

After upgrading iPrint Appliance, the license file from the older version of iPrint Appliance is not be available. This is because the license file is not backed up when exporting the configuration file.

To workaround this issue, you must copy the license file from the older version of iPrint Appliance to the newly installed version. For information on updating your license, see [Chapter 9, “License Information,” on page 69](#).

14.21 DataStore Creation Fails

When trying to create a DataStore, you may see a message: “Failed to parse the XML file: XML document structures must start and end within the same entity”.

To work around this issue, run the configuration script located at `/opt/novell/iprintmobile/bin/config.sh`.

If you are still seeing the error, you must reinstall iPrint Appliance.

14.22 Garbage Characters Printed When Printing from Gmail on Internet Explorer

If you are using Gmail on Internet Explorer, and try to print an email, you might see garbage characters in place of line breaks. This is due to a character encoding issue.

To work around this issue, you must change the default text encoding to UTF-8 in Gmail settings.

- 1 Launch Internet Explorer, then go to www.gmail.com.
- 2 Sign in to Gmail with your user name and password.
- 3 Click the settings icon in the upper-right corner of the screen, then select *Settings*.
- 4 Under *General* settings, in the *Outgoing message encoding* section, select *Use Unicode (UTF-8) encoding for outgoing messages*.
- 5 Click *Save Changes*.

14.23 “Canceled by Operator” Messages in the Audit Logs

In the audit log files, you might see the following message:

`Canceled by operator`

This issue occurs if the files are not rendering correctly.

To work around this issue, ensure that the rendering service is active, and that the renderer is configured correctly.

14.24 Printers not Listed in PSM After Upgrading iPrint Appliance

When you upgrade iPrint Appliance, you might not see any printers listed in PSM (Print Manager).

To work around this issue, you must manually import printers from the source XML file.

- 1 Copy the source Print Manager XML (`padbtxt.xml`) available in the `iprintconfig.zip` file, to the `tmp` directory, then rename the file to `importRAWconfig.xml`.
- 2 Import the change configuration to the new Print Manager database using the commands `rcnovell-ipsmd stop` and `/opt/novell/iprint/bin/ipsmd -x /tmp/importRAWconfig.xml -u cn=admin,o=<OrgName>`.

NOTE: Replace `cn=admin,o=<OrgName>` with the LDAP distinguished name of the eDirectory administrator.

- 3 Specify the eDirectory administrator password.

15 Known Limitations

You might encounter the following limitations when using iPrint Appliance.

- ♦ [Section 15.1, “General Limitations,” on page 89](#)
- ♦ [Section 15.2, “AirPrint Through iPrint Limitations,” on page 90](#)

15.1 General Limitations

- ♦ iPrint Appliance 1.0 does not support changing the iPrint Appliance eDirectory admin password.
- ♦ When exporting the iPrint configuration file, iPrint Appliance does not export all csv files. iPrint Appliance exports only the `audit.csv` which is the default audit file. If you want iPrint Appliance to export additional csv files, you must add the path of those csv files manually into the `additionalBackupList` file located at `/etc/opt/novell/iprintmobile/conf/additionalBackupList/`.
- ♦ When using email printing commands, the `status`, `move`, `resume`, and `cancel` commands may not execute when used with the job name. If the commands do not execute with job names, use job id instead.
- ♦ Email printing to secure printers is disabled. This is to enhance the security of your print system.
- ♦ When you upgrade or export iPrint Appliance, the iPrint Windows Renderer status might be “Inactive”. To resolve this issue, you must unregister and re-register iPrint Windows Renderer.
- ♦ If you have configured a remote Driver Store, you cannot manage it through the iManager of iPrint Appliance.
- ♦ If you want to create a local user or a local group account in iPrint Appliance, ensure that you create the user or group account outside the synced user’s context. This is because, when you sync from an LDAP source to iPrint Appliance, the user and group entries are imported into the MySQL database of iPrint Appliance. By default, iPrint Appliance runs a sync to the MySQL database every 8 minutes. If the local user or group account is not found in the MySQL database, the account is automatically deleted during the next sync.
- ♦ Any configuration change in iPrint Appliance takes at least 20 minutes to get updated to the configuration file. If you export the iPrint Appliance configuration file within 20 minutes of modifying the configuration settings, and then import the configuration file into another copy of iPrint Appliance, the changes are not captured. In this case, you might not be able view the updated information in the iPrint Appliance. It is recommended that you wait at least 20 minutes after the last configuration change before you export the configuration file.
- ♦ Novell iPrint app does not allow imported users to login with the full user context.
- ♦ PCL drivers always print documents in simplex mode.
- ♦ The iPrint Windows Renderer installation interface is not available in Slovak, Hungarian, Netherlands Dutch, and Catalan languages.

- ♦ When trying to print an image through the Gmail app on Android devices, you may see a message “Novell iPrint could not receive the document/image in a file format,” and the image may not print.
- ♦ Before installing or uninstalling Adobe Acrobat X Pro on the Windows 7 machine, you must stop the iPrint Windows Renderer service using the command `iprntrendcmd -q`. If you do not stop the iPrint Windows Renderer service, you may see a message that Microsoft Office applications are running, and you may not be able to proceed with installation or uninstallation.
- ♦ If a user account synced from an LDAP source to iPrint Appliance, is renamed at the source, the user authentication fails. The user account is imported as a new object. Novell plans to address this issue in a future release.
- ♦ iPrint Appliance Migration target server SSL authentication might sometimes fail. To work around this issue, close the *miggui* application and launch it again.
- ♦ If you install iPrint Windows Renderer on a non-English version of Windows 7, conversion of Microsoft Excel files might fail.

15.2 AirPrint Through iPrint Limitations

- ♦ Users submitting AirPrint jobs to non-secure printers are logged as Guest users in the iPrint server audit log. This is because non-secure printers do not require user credentials to print.
- ♦ If a user is not authorized to use a secure printer, the printer does not print due to an authentication failure. The iOS device does not display any message to indicate the authentication failure.
- ♦ Users may be prompted for credentials for non-secure AirPrint printers.
- ♦ Secure printing to AirPrint printers is supported only iOS 6.x. It is not supported on iOS 5.x.
- ♦ “The printer is no longer available,” message is displayed even if the printer is working fine.
- ♦ If you print to a secure AirPrint printer by providing your credentials, the credentials are stored, and you are not prompted for the credentials when you print to that printer in future. This is the default behavior of AirPrint.
- ♦ Whenever a user prints to a secure printer, an “invalid request-URI” message is displayed in the Apache error logs.

A Supported Document Formats

The following document formats have been tested and are known to work well with iPrint Appliance printing.

Formats supported by the default renderer (Libre Office):

- ♦ ODT
- ♦ ODP
- ♦ ODG
- ♦ ODS
- ♦ JPG
- ♦ BMP
- ♦ TIF
- ♦ GIF
- ♦ PNG
- ♦ TXT
- ♦ HTML (Static)

Formats supported by the external renderer (iPrint Windows Renderer):

- ♦ Microsoft Word Formats:
 - ♦ DOC
 - ♦ DOCX
 - ♦ RTF
- ♦ Microsoft Excel Formats:
 - ♦ XLS
 - ♦ XLSX
- ♦ Microsoft PowerPoint Formats:
 - ♦ PPT
 - ♦ PPTX
- ♦ PDF
- ♦ XPS (Non-certified)

NOTE: Libre Office can render PDF and Microsoft Office formats in the absence of iPrint Windows Renderer. However, the output might not match the quality of iPrint Windows Renderer.

B Email Service Parameters

- ♦ [Section B.1, “Incoming Mail Server Parameters,” on page 93](#)
- ♦ [Section B.2, “Outgoing Mail Server Parameters,” on page 94](#)

B.1 Incoming Mail Server Parameters

The Novell iPrint Appliance uses POP3 and IMAP protocols to access email servers to poll for email-based print jobs. The default POP3 and IMAP protocol ports are listed below:

Protocol	Path
IMAP	143
IMAP (Secure/IMAP4-SSL)	585
IMAP4 over SSL	993
POP3	110
POP3 (Secure)	995

In the table below are some examples of several incoming public mail servers.

NOTE: This information has been retrieved from the proper email provider support pages. This is not an exhaustive list. Please refer to your email provider for additional information and compatibility.

Mail Server	Protocol	Address	Port	Notes
1&1	POP3	pop.1and1.com	995	
	IMAP4	imap.1and1.com	143	
AT&T	POP3	pop.att.yahoo.com	995	SSL-enabled
AOL Mail	IMAP	imap.aol.com	143	
Comcast	POP3	mail.comcast.net	110	
Google Gmail	POP3	pop.gmail.com	995	SSL-enabled
	IMAP		993	SSL-enabled
Hotmail	POP3	pop3.live.com	995	Secure Password Authentication (SPA)

Mail Server	Protocol	Address	Port	Notes
Mac	POP3	mail.mac.com	143	
	IMAP4	mail.mac.com	143	
Netscape IMS	POP3	pop.3.isp.netscape.com	110	
Verizon	POP3	pop.verizon.net	110	
			995	SSL-enabled
Yahoo!	POP3	pop.mail.yahoo.com	465	SSL-enabled
			995	SSL-enabled
Yahoo! Plus	POP3	plus.pop.mail.yahoo.com	995	SSL-enabled

B.2 Outgoing Mail Server Parameters

The iPrint Appliance uses SMTP protocols to send email back to users who submit email-based print jobs to report their job status. The default SMTP protocol ports are listed below:

Protocol	Port
SMTP	25
SSMTP (Secure SMTP)	465

NOTE: This information has been retrieved from the proper email provider support pages. This is not an exhaustive list. Please refer to your email provider for additional information and compatibility.

Mail Server	Protocol	Address	Port	Notes
1&1	SMTP	smtp.1and1.com	587	
AT&T	SMTP	smtp.att.yahoo.com		Requires authentication
AOL Mail	SMTP	smtp.aol.com	587	
Comcast	SMTP	smtp.comcast.net	110	
Google Gmail	SMTP	smtp.gmail.com	465	SSL-enabled
			587	TLS-enabled
Hotmail	SMTP	smtp.live.com	587	TLS-enabled
Mac	SMTP	smtp.mac.com		
Netscape IMS	SMTP	smtp.isp.netscape.com	25	SSL-enabled
Verizon	SMTP	smtp.verizon.net	587	SSL-enabled
Yahoo!	SMTP	smtp.mail.yahoo.com	995	SSL-enabled
Yahoo! Plus	SMTP	smtp.mail.yahoo.com	465	SSL-enabled

C Traditional iPrint Client Authentication

Desktop and laptop workstations based on Windows or Mac OS can install a traditional iPrint client to facilitate printing to printers managed by the iPrint Appliance, as well as those managed by traditional Novell Open Enterprise Server (OES) iPrint servers.

Printers managed by the iPrint Appliance, as well as those managed by traditional OES print servers, can be configured as “Public” or “Secure”. When a traditional iPrint client attempts to send a print-job to a “secure” printer, Novell iPrint Appliance (or OES iPrint server) requires the traditional iPrint client to authenticate. This authentication is performed either through a single sign-on experience, or manually.

- ♦ **Manual Authentication:** Manual authentication is invoked when the single sign-on experience fails. When manual authentication is required, the iPrint client presents a login dialog where users can supply their iPrint credentials (user name and password).
- ♦ **Single Sign-on Experience:** The iPrint authentication single sign-on experience is associated with a base client OS authentication into an authentication realm, such as when a Windows client logs in to an Active Directory domain. When the login is successful, Windows passes three data fields (associated with the successful login) to the iPrint client running on the workstation. This includes the authentication realm, the user name, and the password. The iPrint client caches this information in anticipation of using it to facilitate a single sign-on experience when authenticating with iPrint servers (including the OES iPrint server and iPrint Appliance).

When a traditional iPrint client attempts to send a print job to a secure iPrint managed printer, the iPrint server (including the OES iPrint server and iPrint Appliance) sends an authentication challenge back to the iPrint client. This challenge request includes a string that specifies an authentication realm. If the authentication challenge indicates an iPrint authentication realm that matches the realm cached by the iPrint client, the associated (cached) user name and password are used to respond to the iPrint server's authentication challenge.

If the appliance-specified authentication realm does not match the authentication realm cached by the iPrint client, or if the associated user name and password fail the authentication challenge, then the iPrint client reverts to manual authentication.

The iPrint Appliance administrator can set the iPrint authentication realm (string) of the appliance. This authentication realm is sent to traditional iPrint client workstations with authentication challenges.

The iPrint authentication realm field is a string of characters. Traditionally, it is composed of uppercase letters, numbers, underscore, and dash characters. When setting this value on iPrint Appliance, consider the following points:

- ♦ Mobile clients that implement printing with AirPrint, IPP printing (via the mobile client), or e-mail based printing do not require association with an iPrint authentication realm. If the iPrint Appliance only services mobile clients, the value specified for the iPrint authentication realm is irrelevant. In this case, we suggest that the iPrint authentication realm value be set to a short string that is unique to the installation instance, such as a company name, followed by a unique internal instance identifier. For example:

MYCOMPANY_IPRINT_VA_001

- ♦ For traditional Windows Active Directory or iPrint clients to take advantage of the single sign-on experience, the following conditions must be met:
 - ♦ Clients must be associated with a specific Active Directory realm.
 - ♦ The client's Active Directory credentials (realm, user name, and password) must match their iPrint Appliance credentials.
 - ♦ The client must have the iPrint Appliance address set as the primary PSM address, using the command `iprintcmd -S <iPrintAppliance IP Address>`.

In order to support traditional Windows Active Directory (fixed) iPrint clients, the iPrint Appliance administrator should set the iPrint authentication realm field to match the Active Directory realm.

- ♦ The realm string used by workstations that authenticate using the (OES) Novell Client is the associated eDirectory tree name.
- ♦ Where Novell OES iPrint products have been implemented previous to installing an iPrint Appliance, an iPrint authentication realm might have already been established for legacy iPrint clients. The iPrint Appliance administrator can use the previously established iPrint authentication realm, and also the same user names and passwords for iPrint Appliance. As these properly configured clients migrate between iPrint environments, the single sign-on experience continues (uninterrupted) in both the previous OES iPrint environment and in iPrint Appliance environment.

C.1 Password Caching

When users change their passwords, secure printers might continue printing with the old password for up to ten minutes. This is due to caching inside the iPrint LDAP authentication module, and affects only the users created inside the local eDirectory tree on iPrint Appliance.

To resolve this issue, see [Section 14.7, “Secure Printer Continues Printing after Changing the User Password \(Local Appliance eDirectory Users Only\),”](#) on page 82.

D Printing to a PCL Printer

iPrint Appliance supports only PostScript printers by default. For non-PostScript printers like PCL, you must install the appropriate printer drivers.

- ♦ [Section D.1, “Printing to a PCL Printer with LibreOffice,” on page 97](#)
- ♦ [Section D.2, “Printing to a PCL Printer with iPrint Windows Renderer,” on page 98](#)

D.1 Printing to a PCL Printer with LibreOffice

To render documents, iPrint Appliance has a built-in renderer called LibreOffice. LibreOffice renders open office formats (odt, ods, odp), images (jpg, png, gif, bmp, tiff), and text formats. LibreOffice also has an in-built PostScript driver which is used to convert documents to print-ready formats for PostScript printers.

To enable printing to PCL printers:

D.1.1 Prerequisite

You must connect to iPrint Appliance using a secure shell or terminal.

If using Windows:

- 1 Download and install an X-server such as MobaXterm.
- 2 Launch a Secure Shell Client, then connect to iPrint Appliance by using the IP address.
- 3 Run the command `export DISPLAY=<localsystemIPAddress>:0.0`.

If using Linux or Mac:

- 1 Launch the terminal, then run the command `ssh -X <iPrintApplianceIPAddress>`.

D.1.2 Enabling Printing to PCL Printers

- 1 Launch the LibreOffice spadmin tool using the command `/usr/lib64/libreoffice/program/spadmin`.
- 2 Click *New Printer*.
- 3 Select *Connect a PDF Converter*, then click *Next*.
- 4 Select *The default driver*, then click *Next*.
- 5 In the following command, replace `<device>` with `pxlmono`:
`/usr/bin/gs -q -dNOPAUSE -sDEVICE=<device> -sOutputFile="(OUTFILE)" -`
- 6 Specify a name for the driver. For example, PCL.
- 7 Create a second printer by following Steps 3 through 5.

- 8 In the following command, replace *<device>* with `pxlcolor`:

```
/usr/bin/gs -q -dNOPAUSE -sDEVICE=<device> -sOutputFile="(OUTFILE)" -
```

- 9 Specify a name for the driver. For example, `PCL_COLOR`.

NOTE: You must use the same name as the first printer driver, followed by `_COLOR`. This driver is automatically used when printing to color printers.

- 10 Stop the mobile service using the command `rcnovell-iprint-mobile stop`.

- 11 In the `/var/opt/novell/iprintmobile/iprintmobiledb.xml` file, modify the name of the driver in the `<driver>` tag to the one you specified for the first printer driver. For example, `<driver>PCL</driver>`.

NOTE: If you want the PCL drivers to be applicable to all printers, you must modify the default `<driver>` tag. If you want the PCL driver to be applicable for a specific printer, you must add the `<driver>` tag inside the specific `<printer>` tag. For example:

```
<printer id="7FLR2">
<uri>ipp://wgp-print-58.labs.blr.novell.com/ipp/7FLR2</uri>
<driver>PCL</driver>
<secure>>false</secure>
</printer>
```

- 12 Start the mobile service using the command `rcnovell-iprint-mobile start`.

IMPORTANT: Printing options like duplex and paper type do not work with PCL printers. Also, if your printer does not support PCL-XL format, use 'ljet4' as the device. The 'ljet4' device option supports PCL 5e, however it does not support color printing.

D.2 Printing to a PCL Printer with iPrint Windows Renderer

We recommend using iPrint Windows Renderer with HP Universal Print Driver for Windows - PostScript driver because this driver works with most printer models. However, if you have a specific printer model that isn't supported by these drivers (such as PCL), you can add the driver specific to that printer model.

- 1 Launch the command prompt in the *Run as administrator* mode.

- 2 Run the command `iPrntRendCmd.exe -c`.

When prompted for service configuration credentials, specify the credentials of an account with Windows admin and *Log on as a service* rights.

- 3 Specify *No* when prompted to reconfigure the server.

- 4 Specify *Yes* when prompted to change printer drivers.

- 5 Follow the on screen instructions to change printer drivers.

NOTE: iPrint Windows Renderer uses a universal print driver. As a result, some print options might not function as expected with certain printer models.

IMPORTANT: Printing options like duplex and paper type do not work with PCL printers. Also, if your printer does not support PCL-XL format, use 'ljet4' as the device. The 'ljet4' device option supports PCL 5e, however it does not support color printing.

E Best Practices

iPrint Appliance strives to provide a seamless printing experience. Following practices listed below can ensure a highly efficient and highly available print system.

Spam Filters: When using email printing, the print command in the subject line may trigger spam filters. To avoid this issue, configure your email system to allow print-specific emails. Include the approved print users in the spam filter of your email system to prevent unwanted print requests.

Email Polling Interval: By default, the iPrint Appliance server polls the mail server for new email every 30 seconds. If you rely heavily on email printing, you must reduce the polling interval for faster response. However, you must ensure that your mail server is not overloaded by the frequent polling.

Custom Print Drivers: By default, the iPrint Appliance server supports PostScript printers. The internal renderer can print only to the PostScript printers. However, you can use generic PCL drivers. The external renderer (iPrint Windows Renderer) allows you to use a single custom driver that works best with your printers. For more information, see [Appendix D, “Printing to a PCL Printer,” on page 97](#).

DNS Configuration: It is strongly recommended that you use a DNS resolvable host name for iPrint Appliance. This host name is used by client devices when printing, and can cause failures if it is not resolvable.

Time Sync: It is recommended that you sync the Virtual Machine host and the guest Virtual Machine time to the same source.

Connectivity between iPrint Appliance and External Renderer: It is recommended that you have a high-speed connection between iPrint Appliance and the external renderer.

Connectivity between iPrint Appliance and Mail Server: If you rely heavily on email printing, it is recommended that you have a high-speed communication link between iPrint Appliance and the mail server, to speed up the printing of email jobs.

Virus Scanner: It is recommended that you use a virus scanner on the external renderer system (iPrint Windows Renderer).

Applications on Remote Renderer: For best performance, do not run any other applications on the external renderer machine.

Importing Users from Active Directory Source Using LDAP Sync: You might not be able to import all users from the Active Directory source using LDAP sync. By default, only 1,000 users are returned from Active Directory. This is due to a default setting in Active Directory that limits LDAP searches to 1,000 results. For more information, see the Microsoft support article: [How to view and set LDAP policy in Active Directory by using Ntdsutil.exe](#).

Partitions and Replicas Option in iManager: In iManager, you might see the *Partition and Replicas* option. This feature is not required for iPrint Appliance. Therefore, it is not supported. It is recommended that you do not use it on the iPrint Appliance eDirectory.

Creating Local Users and Groups in iPrint Appliance: If you want to create a local user or a local group account in iPrint Appliance, ensure that you create the user or group account outside the synced user's context. This is because when you sync from an LDAP source to iPrint Appliance, the user and group entries are imported into the MySQL database of iPrint Appliance. By default, iPrint Appliance runs a sync to the MySQL database every 8 minutes. If the local user or group account is not found in the MySQL database, the account is automatically deleted during the next sync.

F Traditional iPrint Client Management with Novell iPrint Appliance

iPrint Client Management (iCM) lets you designate printers to be installed on a workstation when a user logs in to the workstation. iCM also lets you control the iPrint Client configuration, making it easier to configure the iPrint Client without visiting each workstation. When the user logs in to the workstation, the iPrint Client settings you designate are configured on the user's workstation.

For more information on iCM, see the [Using iPrint Client Management](#) section in the [iPrint Linux Administration Guide](#).

F.1 iCM with iPrint Appliance

iPrint Appliance does not support traditional iCM with the Novell Client. iPrint Appliance supports iCM using Windows Local/AD credentials.

For more information on using Windows Local/AD credentials for iCM, see the [Configuring iCM for Windows / Active Directory \(AD\) environments without Novell Client](#) section in the [iPrint Linux Administration Guide](#).

For iPrint clients to use the Windows Local/AD credentials for iCM, the following conditions must be met:

- ♦ The client's Active Directory credentials (user name, and password) must match their iPrint Appliance credentials. If you import users from Active Directory to iPrint Appliance, the credentials are automatically matched.
- ♦ You must set iPrint Appliance address set as the primary PSM address on the client by using the command `iprintcmd -S <iPrintAppliance IP Address>`.
- ♦ For iCM to work with imported users, you must enable browse/read rights and inheritance for iCM for the following attributes, using iManager.
 - ♦ iPrintPrinterIPPURI
 - ♦ iPrintiCMClientFlags
 - ♦ iPrintiCMClientProxyURI
 - ♦ iPrintiCMClientTrayURI
 - ♦ iPrintiCMPrinterFlags
 - ♦ iPrintiCMPrinterList
 - ♦ iPrintiCMTrustedSiteList

IMPORTANT: For the user accounts imported from OES, iCM settings are not migrated. You must reassign the iCM settings on iPrint Appliance for the OES user accounts.

G Support Matrix

This section compares the different aspects of Novell iPrint Appliance.

- ♦ [Section G.1, “Mobile Server Support,” on page 103](#)
- ♦ [Section G.2, “Mobile Operating System Support,” on page 103](#)
- ♦ [Section G.3, “Directory Services Support,” on page 104](#)
- ♦ [Section G.4, “Management Console Support,” on page 104](#)
- ♦ [Section G.5, “iPrint Windows Renderer - Supported Operating Systems,” on page 105](#)
- ♦ [Section G.6, “iPrint Windows Renderer - Supported Software Versions,” on page 105](#)
- ♦ [Section G.7, “iPrint Appliance Server and Client Support,” on page 105](#)
- ♦ [Section G.8, “Clients for Email Printing,” on page 106](#)

G.1 Mobile Server Support

Table G-1 *Mobile Server Support*

Features	Version
Driver	<ul style="list-style-type: none">♦ Default Generic PS driver♦ PCL driver <p>NOTE: The PS driver has been tested and is known to work well. However, even PCL drivers work with iPrint Appliance.</p>
Email	<ul style="list-style-type: none">♦ Novell GroupWise 2012♦ Microsoft Exchange 2010♦ IBM Domino server 9♦ Gmail

G.2 Mobile Operating System Support

Table G-2 *Mobile Operating System Support for Apps*

Type	Version
iOS	<ul style="list-style-type: none">♦ iOS 5.x♦ iOS 6.x

Type	Version
Android	<ul style="list-style-type: none"> ♦ Android 2.3.x Gingerbread ♦ Android 4.0.x Ice Cream Sandwich ♦ Android 4.1.x/4.2.x Jelly Bean

G.3 Directory Services Support

Table G-3 *Directory Services Support*

LDAP Directory Service	Version
eDirectory	<ul style="list-style-type: none"> ♦ 8.8.x ♦ 8.7.x
Active Directory	<ul style="list-style-type: none"> ♦ AD configured on Windows 2008 R2 Enterprise Edition ♦ AD Configured on Windows 2003 SP1 Enterprise Edition

G.4 Management Console Support

Table G-4 *Management Console Support*

Access	Version
Browser	<ul style="list-style-type: none"> ♦ IE 10 ♦ IE 9 ♦ Firefox 21 or higher ♦ Chrome 26 or higher ♦ Safari 6 or higher ♦ iOS 6.x tablet with default browsers ♦ Android 4.x tablet with default browsers

G.5 iPrint Windows Renderer - Supported Operating Systems

Table G-5 iPrint Windows Renderer Support

Support	Version
Operating System	<ul style="list-style-type: none">♦ Windows 7 SP2 64-bit Enterprise♦ Windows 7 SP2 64-bit Ultimate♦ Windows 7 SP2 64-bit Professional
Driver	<ul style="list-style-type: none">♦ HP UPD 5.5 PS or higher

G.6 iPrint Windows Renderer - Supported Software Versions

Table G-6 iPrint Windows Renderer Support

Support	Version
Microsoft Office	<ul style="list-style-type: none">♦ Microsoft Office 2010 64-bit Standard♦ Microsoft Office 2010 32-bit Standard
Adobe Acrobat	<ul style="list-style-type: none">♦ Adobe Acrobat X Pro or higher

G.7 iPrint Appliance Server and Client Support

Table G-7 iPrint Appliance Server and Client Support

Support	Version
Hypervisor	<ul style="list-style-type: none">♦ ESXi 5.x♦ ESX 4♦ ESXi 4♦ VMware Workstation 9
Desktop iPrint Client	<ul style="list-style-type: none">♦ Windows XP♦ Windows Vista♦ Windows Server 2000, 2003, 2008, and 2008 R2♦ Windows 8♦ Windows 7♦ Mac 10.8♦ Mac 10.7
Appliance Installer	OVF

G.8 Clients for Email Printing

- ♦ GroupWise 2012 client
- ♦ Microsoft Outlook 2010
- ♦ IBM Lotus Notes 9
- ♦ iOS 5/6 default mail client
- ♦ Mail clients on Android 2.3 or higher
- ♦ Windows Mobile 7.5
- ♦ Blackberry 7.1
- ♦ Windows 8 Pro default mail client on tablet
- ♦ Gmail