HP ePrint Enterprise

Administrator's Guide

Release 4.2

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1 Introduction

This guide provides an overview of the tasks that can be performed using the HP ePrint Enterprise Administration tool. The HP ePrint Enterprise Administration tool is accessed as follows:

- If **Enhanced security** was selected during installation, use https://<hostserver>/cloudprintadmin/
- If **Backward compatibility with low security** was selected during installation, use http://<hostserver>/cloudprintadmin/

1.1 Login

This is the main access point for the Administration UI. After entering the default URL in web browser, the system redirects the user to the Login screen.

Default **Login name** is "admin@hp.com" and **Password** is "admin". If password is forgotten, a password tip is available by clicking **Forgot Password**.

Figure 1-1 Login screen

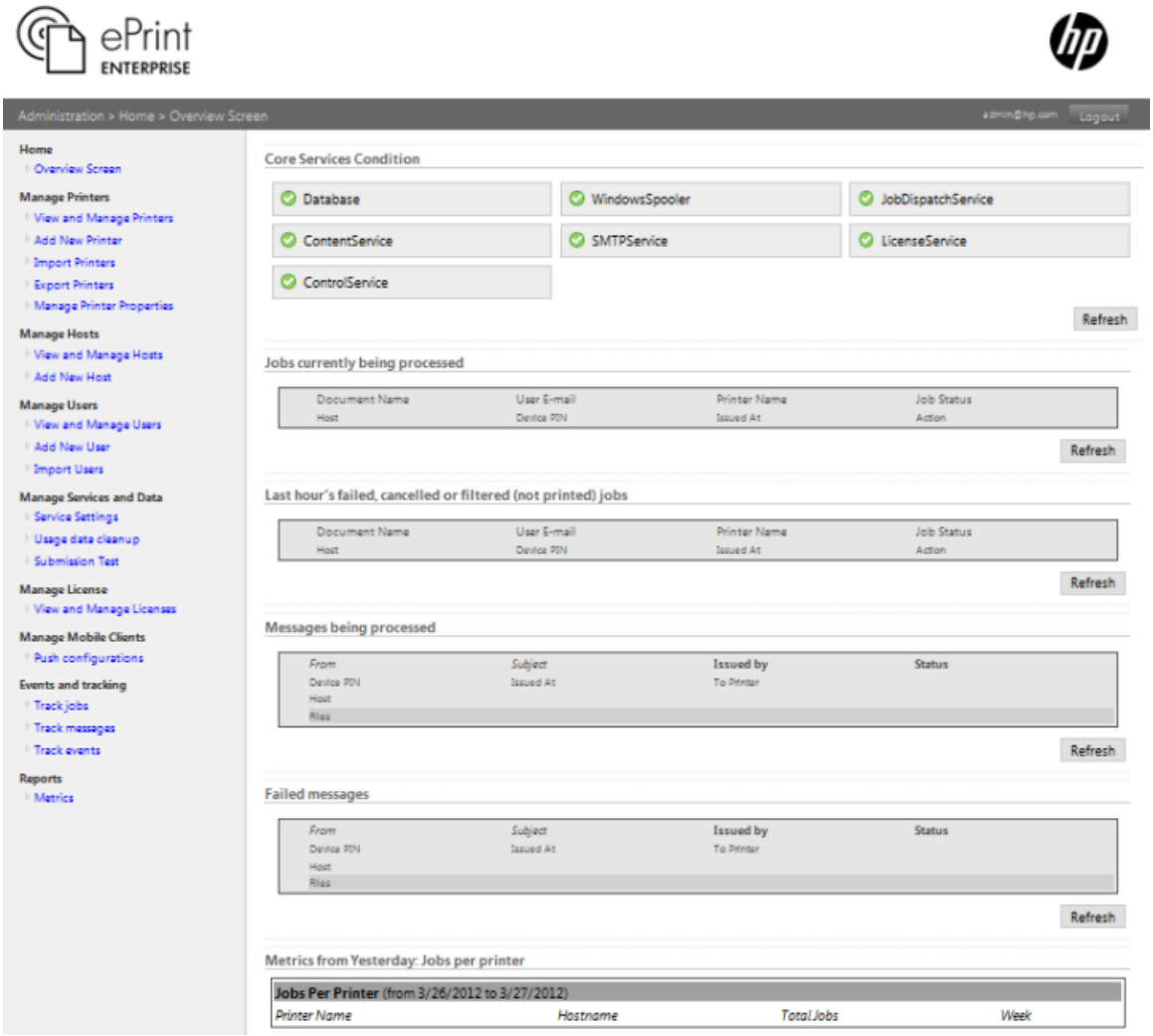
NOTE: If upgrading from HP ePrint Enterprise 3.0 or earlier, log in with the admin credentials used during data export. Make sure to manually change the credentials of other administrators.

2 Home section

2.1 Overview Screen

The **Overview Screen** shows how HP ePrint Enterprise is performing its functions. It also contains links to other administration tasks such as adding users, printers, service settings, etc.

Figure 2-1 Overview Screen



The sections which follow provide a brief description of the Overview Screen components.

2.1.1 Main menu

The Main menu contains options to perform maintenance tasks on system tables such as **Add** and **View**, and also includes some reports. Each menu entry is discussed later in this document.

2.1.2 Core Services Condition

The **Core Services Condition** panel provides an overview of the current state of HP ePrint Enterprise services. A red mark next to a service name indicates that the service is unavailable or has been suspended. Note that if any of the **Core Services** are suspended, print requests will fail.

The following list of Windows services are mapped to the Services listed in the **Core Services Condition** window.

Windows services	Core Services Condition window
SQL Server	Database
PrinterSpooler	WindowSpooler
HP CloudPrint Service Host	JobDispatcherService
HP CloudPrint Content Service	ContentService
Simple Mail Transfer Protocol	SMTPService
HP CloudPrint License Service	LicenseService
HP CloudPrint Control Service	ControlService

2.1.3 Jobs currently being processed

Displays current jobs submitted to HP ePrint Enterprise. The user can refresh this window to see an updated status.

2.1.4 Last hour's failed, cancelled, or filtered (not printed) jobs

Any print submission that fails will display in this window.

2.1.5 Messages being processed

Displays messages submitted during the last 15 minutes.

2.1.6 Failed messages

Displays messages that failed during the last 15 minutes.

2.1.7 Metrics from yesterday: Jobs per printer

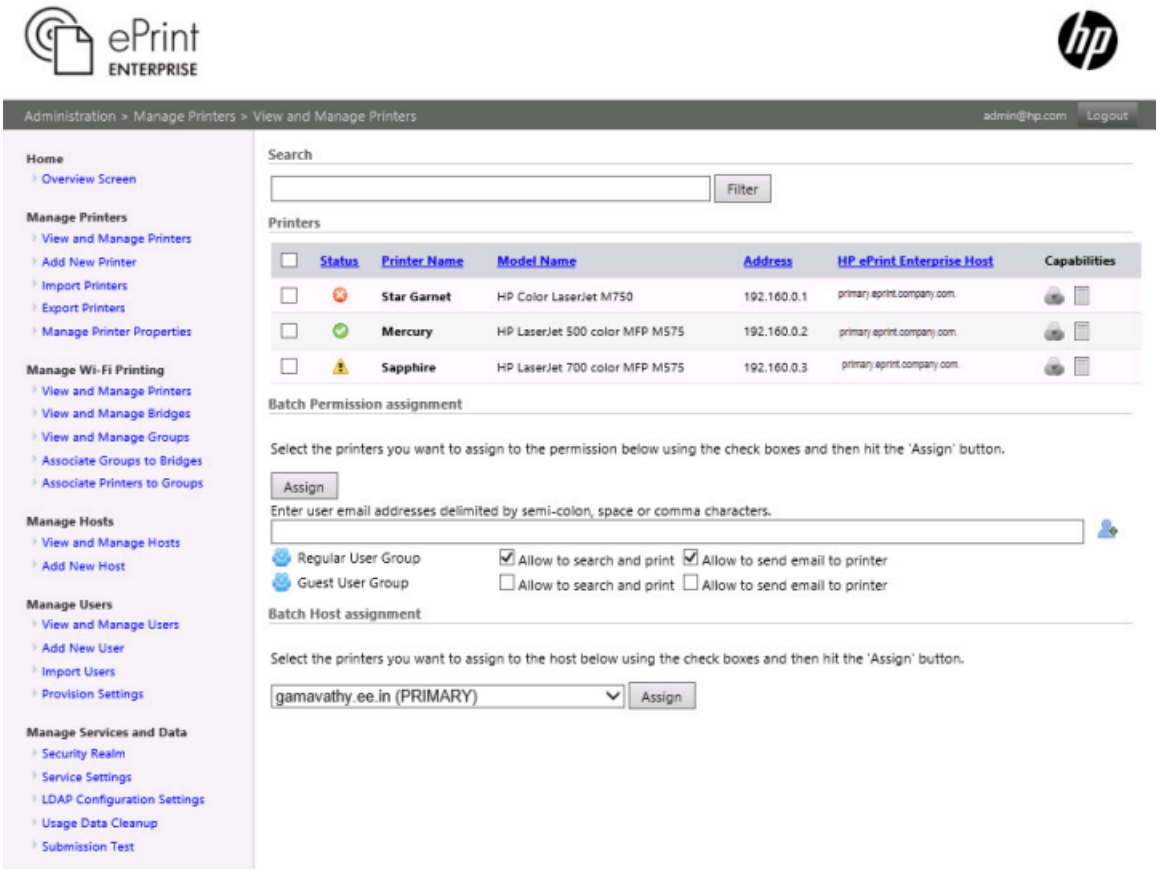
Displays a consolidated report of jobs submitted to a specific printer.

3 Manage printers

3.1 View and Manage Printers

This screen shows all printers that have been added to the system. The list can be filtered by using the **Search** box. Searches are performed on all displayed columns.

Figure 3-1 View and Manage Printers screen



Click on the table row to edit a specific printer. You can point the mouse over the Address and HP ePrint Enterprise Host column to see the Fully Qualified Domain Name (FQDN).

The status icon reflects the printer's current state.

Table 3-1 Printer statuses

Icon	Status	Description
	Ready	Printer is ready to accept jobs.
	Busy	Printer is processing a job.
	User Intervention	Printer needs user assistance due to an error condition (paper jam, out of paper, out of toner, etc.).

Table 3-1 Printer statuses (continued)

	Unavailable	Printer is not ready to accept jobs.
	Unknown	Printer status cannot be determined at this time.

3.1.1 Batch permission assignment

This tool assists in assigning permissions to one or more selected printers. Permissions (or access policies) are assigned to user groups or user accounts. Current access policies are subjected to allow/deny access to a printer. Select the required permissions to be assigned against each of the user groups/accounts and then click the **Assign** button.

3.1.2 Batch host assignment

This tool assists in assigning a group of printers to a specific HP ePrint Enterprise Host. Printers are assigned against a primary or secondary instance to manage load balance. Select the printers to be assigned and then click the **Assign** button.

3.1.3 Adding/editing printers

Click a row on the **View and Manage Printers** screen to redirect to the printer editing form, or select **Add New Printer** on the Main menu to add a new printer.

Figure 3-2 Add new printer

3.1.3.1 Name

The name used to identify this printer on the system. A friendly description is recommended. Use an easily identifiable name.

3.1.3.2 Model name

The model name of the printer.

3.1.3.3 External ID (edit mode only)

This field is used by Import/Export routines to update printer information. The system automatically generates this identification in the form ep + printer identifier (e.g., ep1). For more information on how to use and manage the external ID field, see the *Import Printers* section of this guide.

NOTE: External ID must be unique.

3.1.3.4 HP ePrint Enterprise Host

The HP ePrint Enterprise host to which the job will be sent. Jobs are processed by the assigned primary or secondary instance.

3.1.3.5 Printer Account (edit mode only)

This information is used by the email printing mechanism to identify the printer in the directory. The system automatically generates this information based on the PrinterAccountPrefix setting (set in the settings configuration file) + printer identifier. For more information, see the *Email printing* section of this guide. The Printer Account value can modified to a more appropriate / friendly value when editing the printer account.

NOTE: Printer Account value must be unique.

3.1.3.6 Address type

Represents the printer address type, which can be a network node (IPv4) or a print queue/secure pull print queue. It is important to note that a printer queue also has an IPv4 address, representing the server where the queue is located.

3.1.3.7 Network address

Represents the network address where this printer is located.

- **Queue Name** (print queue and secure pull print type only) - The queue name that identifies the printer on the print server.
- **Use Domain Credentials** (print queue and secure pull print type only) - Mark this option to use the Domain User/Password credentials for network authentication.
- **Domain User** (print queue and secure pull type print only) - The user in DOMAIN\user format used to access the print queue resource.
- **Domain Password** (print queue and secure pull print type only) - The domain password used by the user to access the print queue.

3.1.3.8 Active

Only printers marked as active can have submit jobs. To temporarily disable a printer, unmark this option. Suspended or inactive printers are not listed in search results on mobile devices.

3.1.3.9 Status

Status information is automatically updated by the HP ePrint Enterprise Printer Monitor service. If a printer is down, it gets suspended and won't be listed in printer search.

Optionally, printer status can be manually set to "Unavailable" so that it won't be listed in search results.

3.1.3.10 Family

This field represents the printer family type, and enhances printer search capabilities. A printer family association strengthens rendering capabilities to the driver family to which they belong.

3.1.3.11 Paper size

The field represents the paper size used by this printer, assisting printer search / printing. HP recommends using A4 or Letter paper size. For other unsupported paper sizes, the option must be set to **Any (per document)**.

3.1.3.12 Personality

This field dictates the printer language (PCL or PostScript) to be used by the driver when sending jobs to this printer. HP recommends using either PCL5/PCL6 or PostScript options based on the PDL, as supported by the printer.

NOTE: Use of Auto or PCL3-GUI personality may not provide expected print results.

3.1.3.13 Capabilities

Capabilities are based on properties added in **Manage Printer Properties**. All properties listed here will impact printer search results based on key words named in **Properties**.

Alternatively, Color and Duplex properties apply print preferences for a printer. When **Color** is unchecked, documents are printed in black and white. Similarly, when **Duplex** is checked, print preference is set to bind mode (Long edge/short edge depending on page orientation).

3.1.3.14 Job Retention

Job Retention dictates printer job storage mode (Off, PIN Printing - Personal Job, PIN Printing – Stored Job) to be used by the driver when sending jobs to this printer.

This feature is supported for network node (IPv4) or print queue, but not for secure pull print. Because of variances in PJL across printer manufacturers, this feature works best with HP printer devices.

3.1.3.15 Print

This feature leverages IPv4 printer's ready-to-print capability to render print jobs. Document content of jobs submitted to printer accounts with ready-to-print capability are pushed directly to printer port without HP CloudPrint driver intervention to render document. Using this feature the printer has a built-in capability to render document content, therefore speeding up the print process and processing cost (involving Memory usage / Performance of printer driver in the server).

Limited file formats are supported. By default, PDF and txt file formats are enabled as supported file formats. To avoid unexpected print behavior, the administrator must carefully consider appropriate file formats. Optionally, the supported file format can be confirmed through the embedded web server pages of the printer (supported by most HP printers).

3.1.3.16 Permission

Permission settings dictate user permissions for printer accounts. By default, Regular users are allowed to search and print jobs and send email to any printer account in HP ePrint Enterprise. Guest Users are denied the same. Administrator should override default permissions for Guest users, to enable search, print, and email features.

Permissions can also be set for a batch of users identified by their email address. For instance, we can reserve printers (i.e., a printer in a lobby) for Guest users by selectively controlling permissions from submitting print jobs to those printers.

3.1.3.17 Location Details

Location details are based on locations added to **Manage Printer Properties**.

Latitude — Defines geographic coordinate primary reference points in reference to north-south poles from the Equator (0). In reference to the equator, a plus sign (+) denotes northern hemisphere, and a minus sign (-) the southern hemisphere.

Example: Greenland, with latitude of 64 N degrees , has a required value of +64.

Longitude — Defines geographic coordinate specifying east-west position of a point with respect to the meridian. A plus sign (+) denotes east longitude or the prime meridian, and a minus sign (-) denotes west longitude or 180° meridian (opposite of the prime meridian).

Example: Greenland, with longitude of 51 W degrees, has a required value of -54.

3.1.4 Deleting printers

Click an existing printer on the **View and Manage Printers** screen and then click **Delete**. The printer can be deleted if it no longer exists in the network.

NOTE: This action cannot be reversed. A new printer cannot be added with the same external ID. The external ID for a printer is unique and cannot be assigned to any other printer. HP ePrint Enterprise does not delete the printer account permanently from database, but only marks it as deleted.

3.2 Import Printers

The **Import Printers** tool allows adding printers in batch mode and updating their information in the database. This tool supports two file types:

- **.csv** - comma-separated text file, for generic import/export.
- **.xls** - Excel spreadsheet, specifically targeted at FIS (Fleet Information Sheet) file format. FIS files contain standard HP data maintained under MPS (Managed Print Service) contracts.

This chapter describes the functionality of importing and exporting .csv files only.

NOTE: The first line of the file is the header line. This line is mandatory. Its format should reflect the printer attributes. This header can be generated by using the **HP ePrint Enterprise Printer Export** tool.

The following is a .csv file header example. Each field is preceded by a qualification prefix:

```
[P]ExternalID,[P]Name,[P]ModelName,[P]InterfaceType,[I]NETADDIPV4,
[I]QUEUE,[P]CloudPrintHost,[L]Description,[L]Room,[L]Floor,[L]Building,
[C]Color,[C]Duplex,[J]Jobretention, [P]Permission, [P]ReadyToPrint
```

[P] — Refers to **P**rinter main fields. You have no control on the naming for P-type fields, so only the following strings can be used:

- **Mandatory**: *ExternalID, Name, ModelName, InterfaceType*
- **Optional**: *CloudPrintHost, Latitude, Longitude, PaperSize, Personality, Family, AccountName, Permisson, ReadyToPrint*

[I] — Refers to printer **I**nterface description fields. You have no control on the naming for I-type fields, so only the following strings can be used:

- **Mandatory**: *NETADDIPV4, QUEUE*
- **Optional**: *USER*

[L] — Refers to printer **L**ocation tags. You do have control of the naming for L-type fields. If an existing field name is provided, data will be attributed to the existing field. If a nonexistent field name is provided, a new location tag will be created for all printers in the database. None of the location tag fields are mandatory.

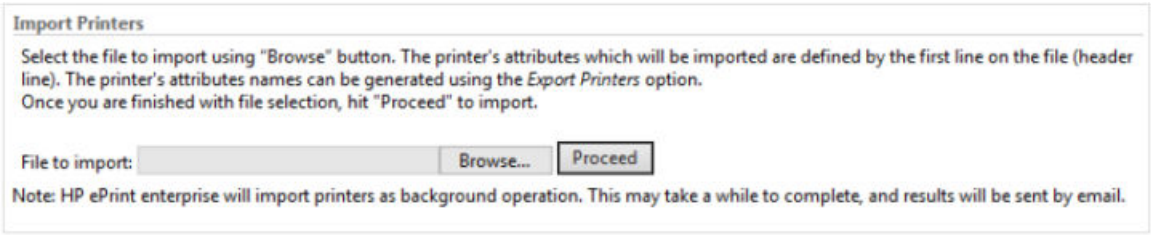
[C] — Refers to printer **C**apability tags. You do have control of the naming for C-type fields. If an existing field name is provided, data will be attributed to the existing field. If a nonexistent field name is provided, a new capability tag will be created for all printers in the database. None of the capability tag fields are mandatory.

[J] — Refers to **J**ob retention tag. You have no control over the naming of J-type fields. Only the following strings can be used:

- Off
- PIN Printing - Personal Job
- PIN Printing - Stored Job

To import printers, select the file to be imported and click **Proceed**. The import process validates the record values, and respective success / error messages are emailed to the logged in user.

Figure 3-3 Import Printers tool



NOTE: Only ANSI characters with comma separated values files are supported for .csv extension. Field values with spaces should be escaped with quotes (“”).

3.2.1 Controlling batch inserts and updates with ExternalID

The ExternalID field controls the behavior of inserting or updating printer records in the database. Since the ExternalID is a mandatory header, a given printer record may fall into one of three categories:

- **Empty ExternalID** — The record that contains no data for the ExternalID field means the printer will be INSERTED in the database. If no ExternalID is provided, one is automatically assigned (“ep” prefix + a sequential number, e.g., “eg1”). Be careful with empty ExternalIDs, as running imports with empty ExternalIDs more than once will replicate printer records.
- **Non-existent ExternalID** — The record that indicates a new ExternalID is INSERTED as a new printer in the database, and the provided ExternalID is used.
- **Existent ExternalID** — The record that indicates an ExternalID already exists in the database will be UPDATED with the provided fields, since the ExternalID is unique.

3.2.2 Empty versus non-existent fields

When importing files with records falling in the third category (existent ExternalID) an update will occur. In this scenario, information contained in configured fields can either be changed or deleted.

For any field, if the provided value is EMPTY the existing information will be deleted in the database for that printer record field. However, if the field is mandatory (e.g., if you provide an empty NETADDIPV4) importing the record will fail.

For optional fields, if field is not listed in import header the existing / current information will remain unchanged.

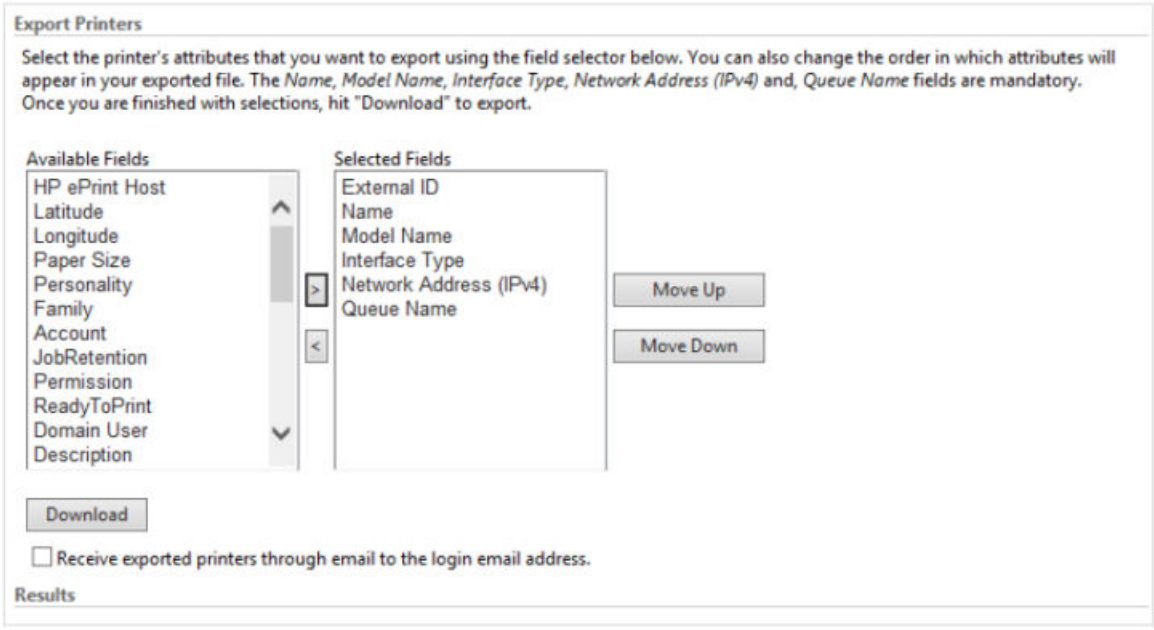
3.3 Export Printers

The Export Printers tool is used to save the system printers to a comma separated value file. The main purpose is to create a printer list backup, helping in later setup procedures, and to provide a template for populating and importing additional printer information.

You can update the order in which fields will appear in the file by using the **Move Up** and **Move Down** buttons for the **Selected Fields** list.

NOTE: The first line contains fields to assist printer import. Some fields are mandatory and must remain selected.

Figure 3-4 Export Printers tool

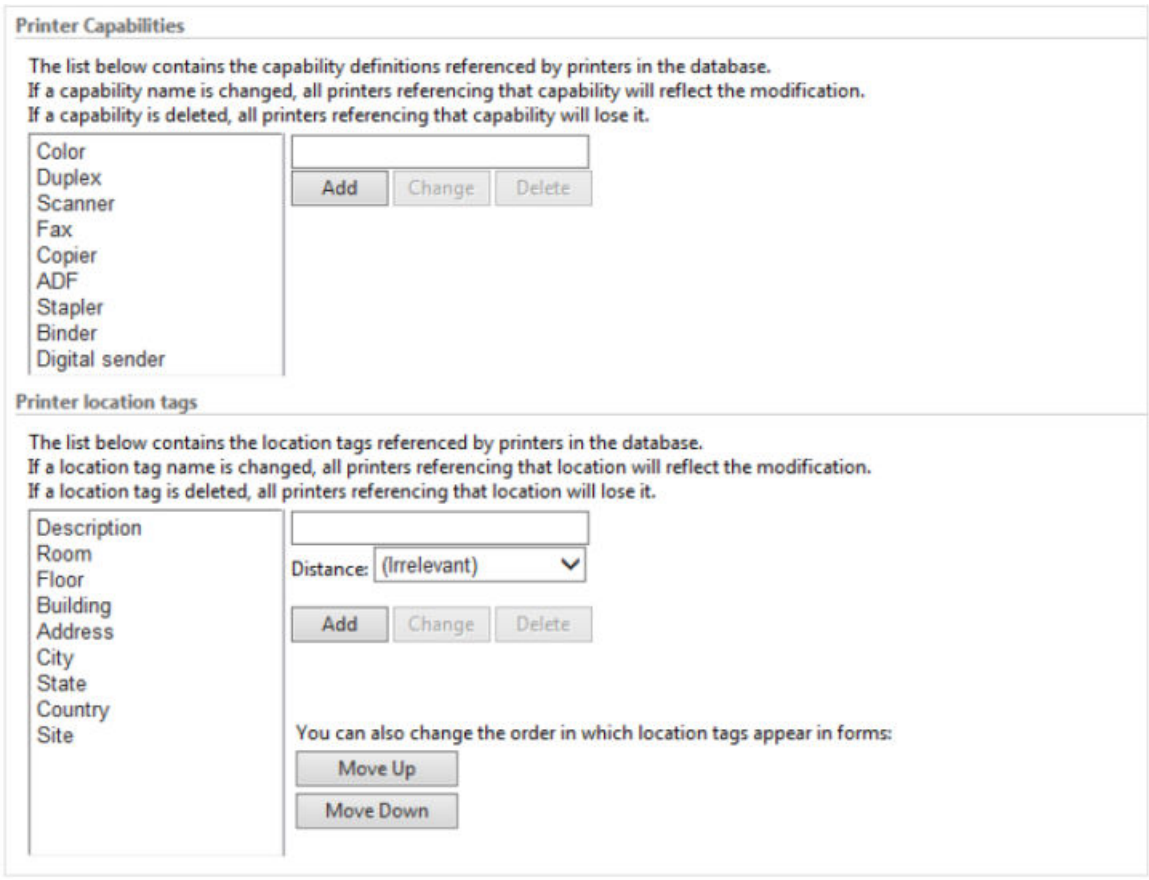


Click **Download** to start the Export process. If there are any errors during the export process, an error message displays in the **Results** panel. If the export completes successfully, the user can download/copy the exported printers. In addition to downloading the files, there is an option to receive the exported printers via email to the logged-in user. To receive this email notification, select the **Receive exported printers through email to the login email address** check box.

3.4 Manage Printer Properties

The Manage Printer Properties screen defines the **Printer Capabilities** and **Printer location tags** that are available on the Printer Editing form. Custom tags can be added to display in the **View and Manage Printers** section, allowing them to add search criteria fields. The order and relevance of searches performed can be updated using the **Distance** field for **Printer location tags**.

Figure 3-5 Manage Printer Properties



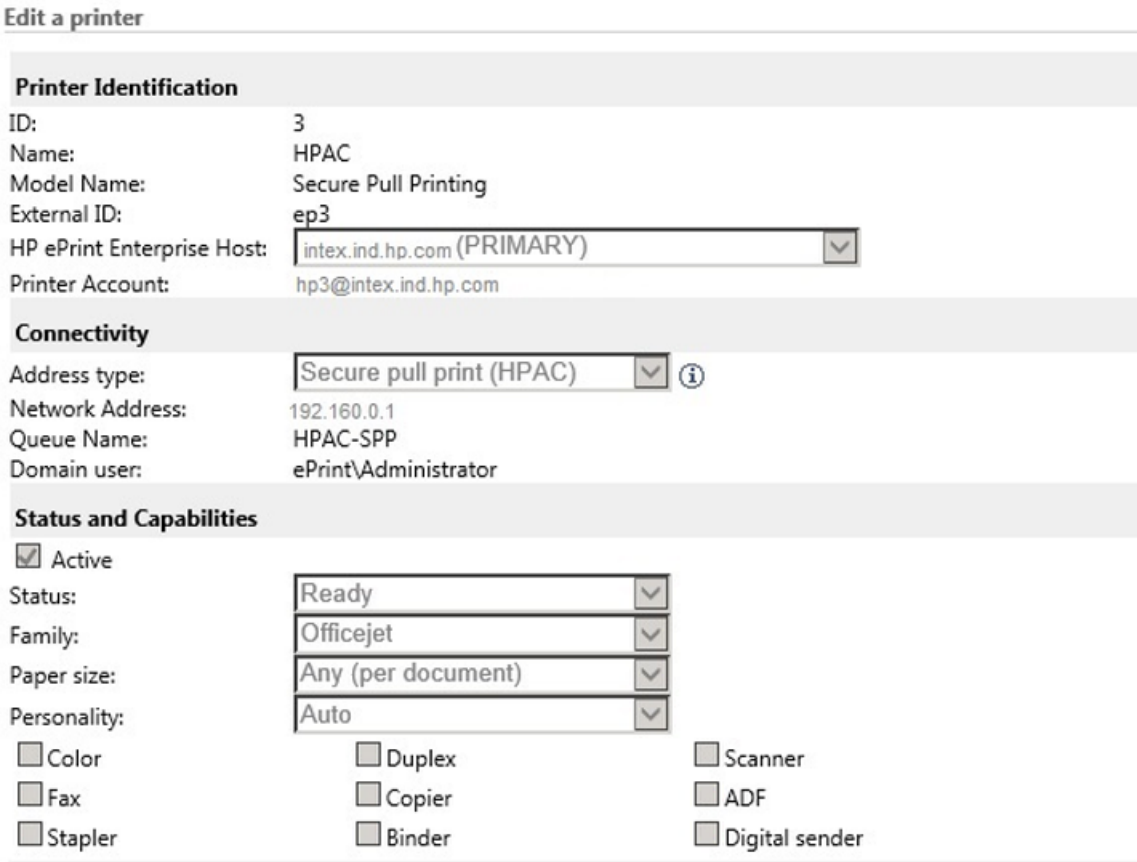
3.5 Adding Secure Pull Printing Solutions

Secure Pull Printing is implemented by separate solutions that accept print jobs through regular Windows queues, and release these jobs at the printer on demand. Addressing a secure pull print queue (instead of a physical printer) is just a matter of choosing the right connectivity and protocol parameters.

To insert a reference to a secure pull print queue, add a regular printer (with free name and description information) and set the connectivity parameters with the following values:

- **Address type**: Choose Secure pull print (PJL), Secure pull print (LPD/LPRng), or Secure pull print (HPAC).
- **Network Address**: Address of the secure pull print server.
- **Queue Name**: Address of the secure pull print server.
- **Use domain credentials**: Check this option if the secure queue requires authentication.
- **Domain user**: Domain name of the user authorized to print on this secure queue.

Figure 3-6 Secure Pull Print settings, example



HP ePrint Enterprise has been tested with the commercial pull print solutions listed below. Each requires a specific Address Type in the connectivity parameters:

Secure Pull Print (HP AC)

- HP AC Secure Pull Print Express v 14.2

NOTE: To successfully integrate HP ePrint Enterprise with Securejet, select the printer account personality as 'Auto.'

Secure pull print (LPD/LPRng)

- Ringdale FollowMe® v6.0.4.6
- VPSX Enterprise Output Management (x64) Release V1R1.0.079

NOTE: Complete the following changes in ePE Server:

- Open the registry.
- Go to the hive HKLM\SOFTWARE\Hewlett-Packard\HP Cloudprint.
- Create a key of REG_DWORD type with the name DeferredLPD and set the value to 1.

VPSX will work with printer account personalities PCL5/PCL6 and PostScript. VPSX will not work with Auto personality.

Secure pull print (PJL)

- Securejet Enterprise Server v7.0
- HP AC Secure Pull Print Enterprise v 14.2
- SafeCom G4.05
- Pharos Blueprint® Enterprise 5.1.7838.0
- Nuance Equitrac Express Server v4.2.3.5370
- Papercut MF v14.2
- Papercut MF v14.3
- Papercut NG v14.2
- Papercut NG v14.3
- Equitrac Office v5.4.23.4935 (with the available component hotfixes)

NOTE: Complete the following changes in Papercut MF/NG Server:

- Open the configuration file: "<Install Folder>\providers\print\win\print-provider.conf"
- Locate the following lines in the file:

  #Extract from spool files coming from our enterprise system.

  #Look for a header that matches @PJL COMMENT SAP_USER="john.wayne"
- Add the content below the following lines:

  UsernameOverridePrefix=@PJL SET ePrintUsername = "

  UsernameOverrideSuffix="

3.5.1 Identifying users in a secure pull print scenario

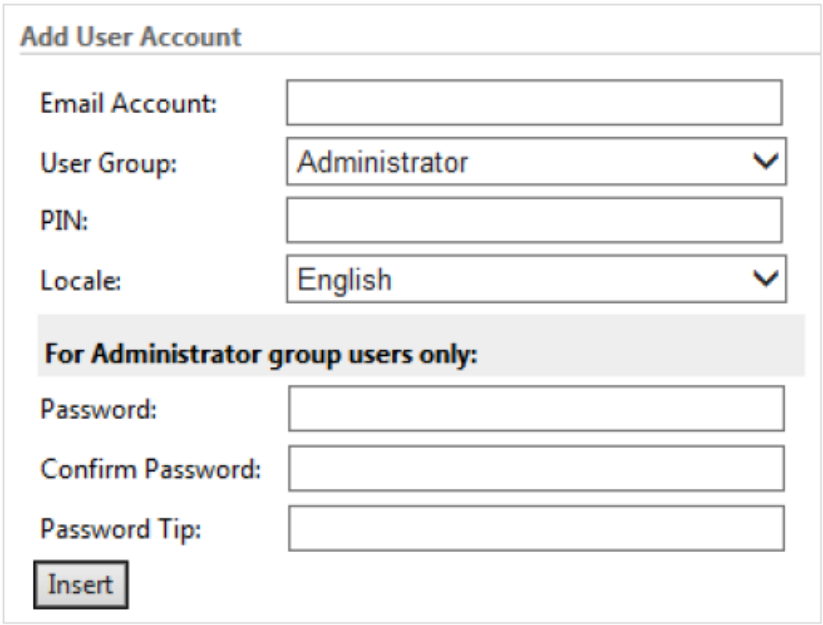
Secure pull printing guarantees only the verifiable owner of a job is capable of retrieving it at the printer. To do so, the secure pull print solution must ask for credentials at the printer (through a PIN, password, badge, etc.). Since the HP ePrint Enterprise server is run by a central service account, the true sender of the job must be identified in the job package so that the secure queue can determine its real owner.

This is managed by HP ePrint Enterprise in two ways:

1. PJL headers containing user identification (DOMAIN\username) and email address.
2. LPRng protocol

Each of these solutions will embed user information (DOMAIN\user) that is automatically retrieved from the company's LDAP Directory – when available. If such mechanism is not available or functional for whatever reason, domain user identification can be manually inserted with the standard user form. See the *Managing Users* section of this guide.

Figure 3-7 Manually providing user NT account



3.5.1.1 Controlling PJL attribute names

Each secure pull print solution may demand that user information be tagged according to its own attribute names in the PJL headers. In order to control how to identify the username and email address for a given user, three system settings are available.

To access these settings, reach to %ALLUSERSPROFILE%\Application Data\Hewlett-Packard\HP CloudPrint \conf\cloudprint.settings.xml and locate RenderService.RenderService group.

System settings attribute names:

- **PullPrintPJLemail** - Identifies the user email. Default: *ePrintEmail*.
- **PullPrintPJLfullaccount** - Identifies the full account (domain\username). Default: ePrintNTAccount.
- **PullPrintPJLusername** - Identifies just the username (no domain). Default: ePrintUsername.

Using default values and sample user previously mentioned, a print job header set to use the PJL attributes would look like this:

%-12345X@PJL SET ePrintEmail = "john.doe@hp.com"

@PJL SET ePrintNTAccount = "AMERICAS\jdoe"

@PJL SET ePrintUsername = "jdoe"

@PJL ENTER LANGUAGE=PCL

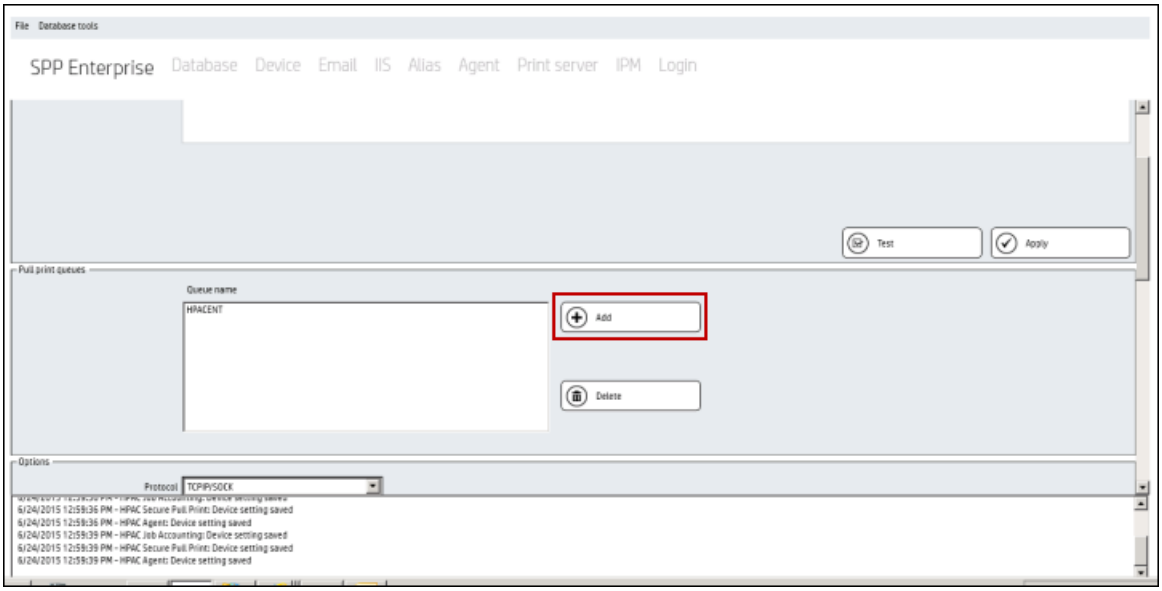
3.5.2 Setting up HP AC Secure Pull Print Enterprise

3.5.2.1 Secure Pull Print using HP Access Control v14.0 and above

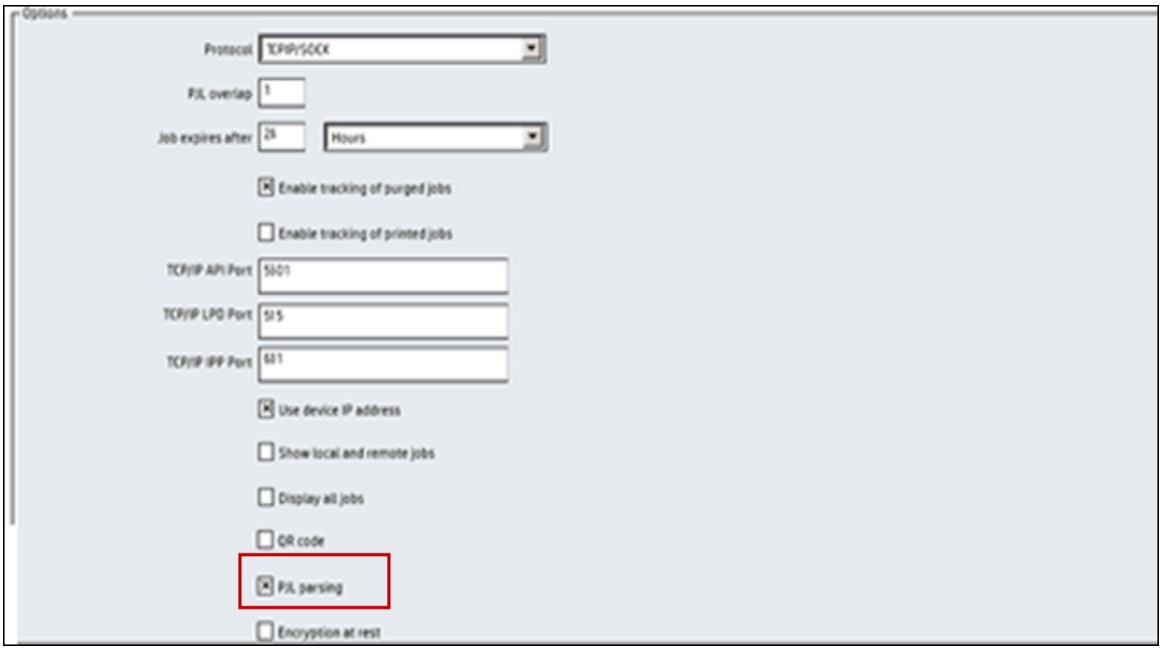
To create an SPP Enterprise pull print queue in the HP AC configuration tool, complete the following steps:

1. Create an SPP Enterprise pull print queue in the HP AC configuration tool, select **Settings** and then select **SPP Enterprise**.

2. In **Pull print queues** click **Add** to list the pull print queue under **Queue name**.



3. Under **Options**, select **PJL**



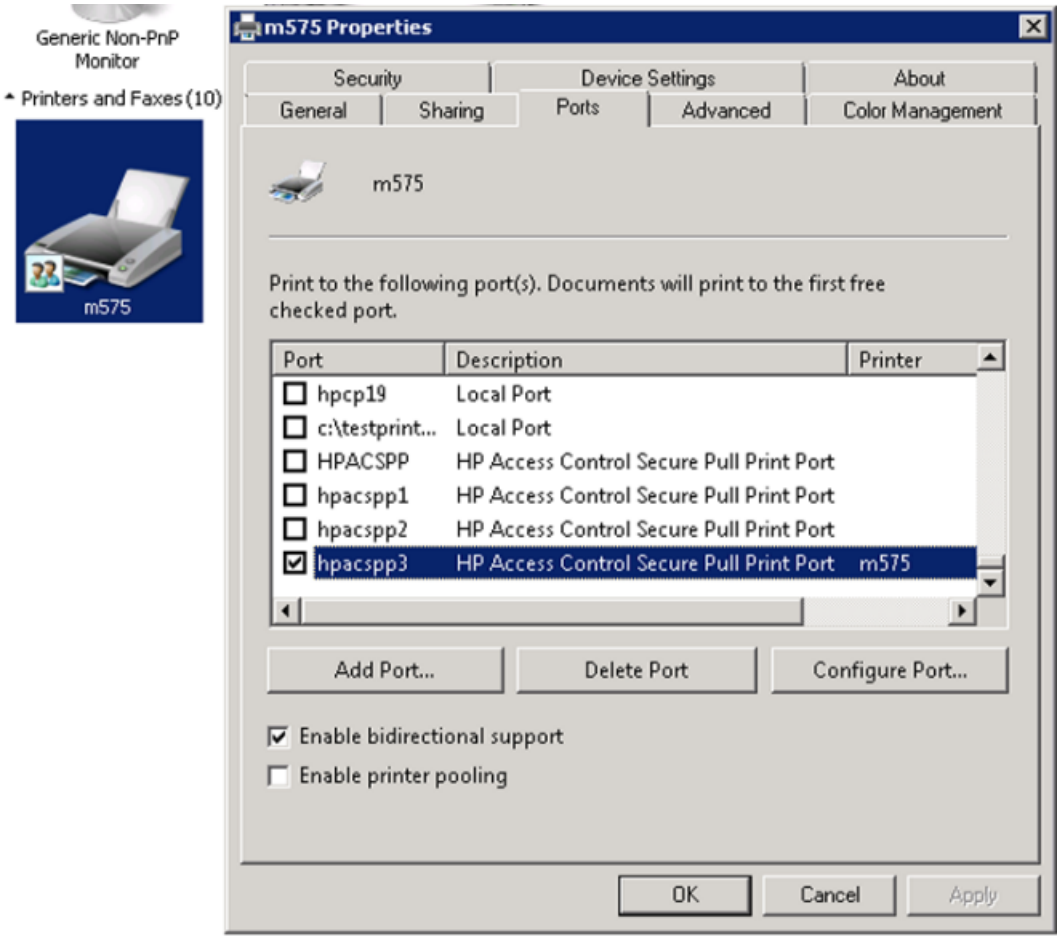
4. Click **Apply**.

3.5.2.2 Secure Pull Print using HP Access Control v12.0

HP AC Secure Pull Print job data properties define the buffer size where HP AC SPP will look for ePrint-specific job header (for example, ePrintUserName). The maximum search length default setting for HP AC SPP is set 255. This needs to be changed to 4000.

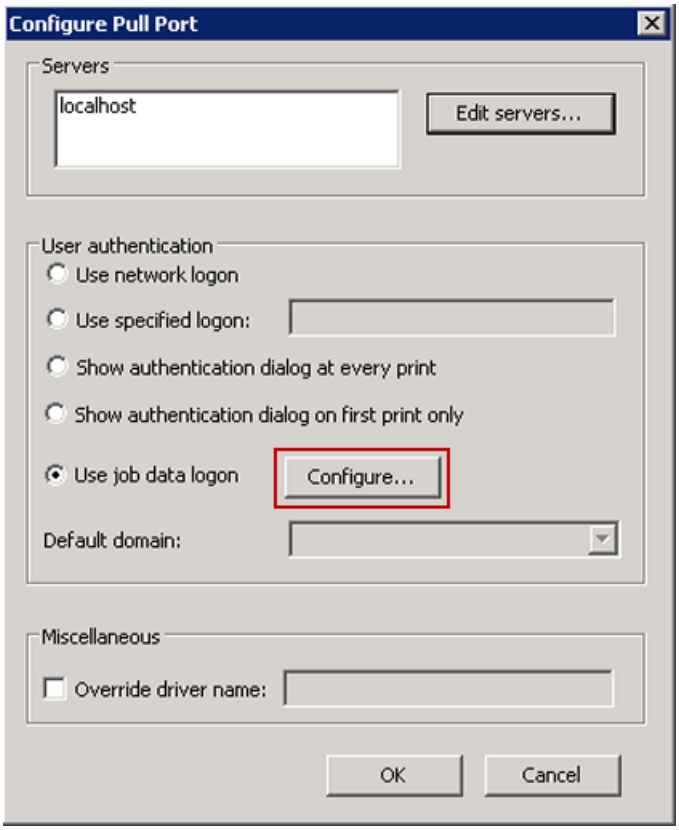
To modify the maximum search length, complete the following steps:

1. Go to **Devices and Printers**. Under **Printers and Faxes**, right-click the HP AC SPP printer icon and select **Printer Properties**.



2. Select the configured HP AC SPP port and click **Configure Port...**

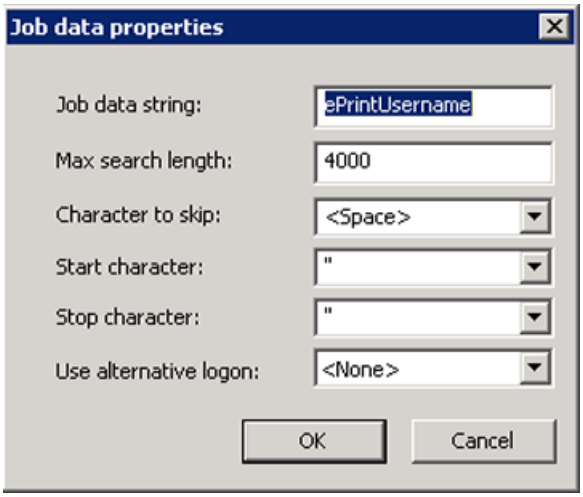
3. Under **User authentication**, select **Use job data logon** and click **Configure**.



4. In **Job data properties** enter the following for:

   Job data string: ePrintUsername

   Max search length: 4000



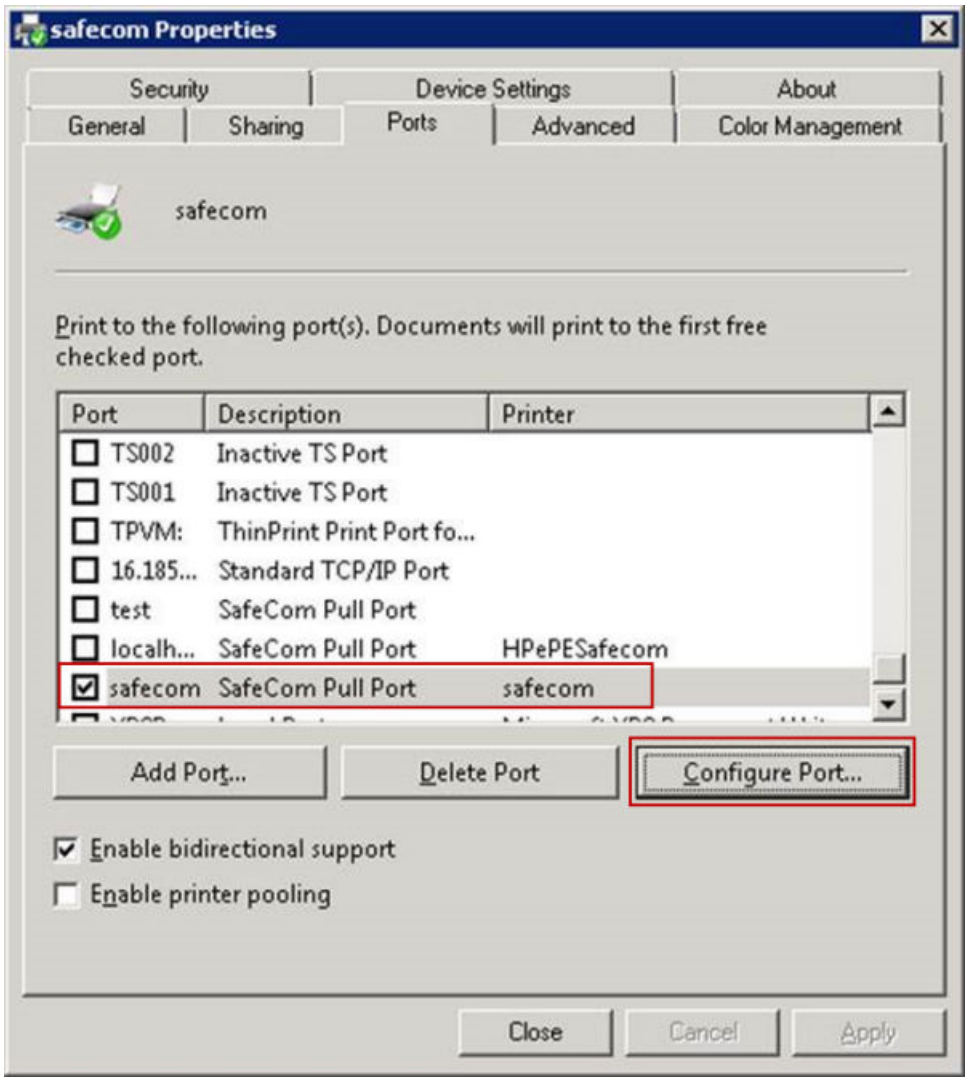
5. For **Max search length**, enter `4000`.
6. Click **OK**.

3.5.3 Secure Pull Print using SafeCom

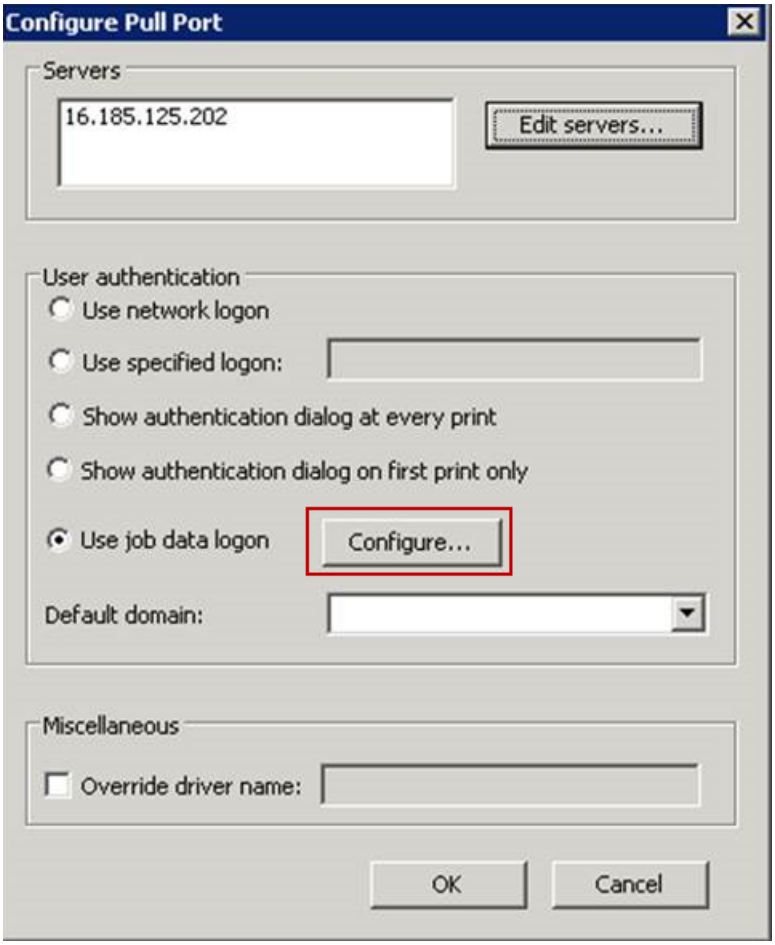
SafeCom SPP job data properties define the buffer size where SafeCom SPP will look for the ePrint-specific job header (for example, ePrintEmail). The maximum search length for SafeCom SPP needs to be modified to 9999.

To modify the maximum search length, complete the following steps:

1. Right-click SafeCom SPP Queue, and select **Printer Properties**.
2. Select the configured SafeCom SPP port, and click **Configure Port...**.



3. Under **User authentication**, select **Use job data logon** and click **Configure...**.



4. In **Job data properties** enter the following for:

   Job data string: ePrintEmail

   Max search length: 9999

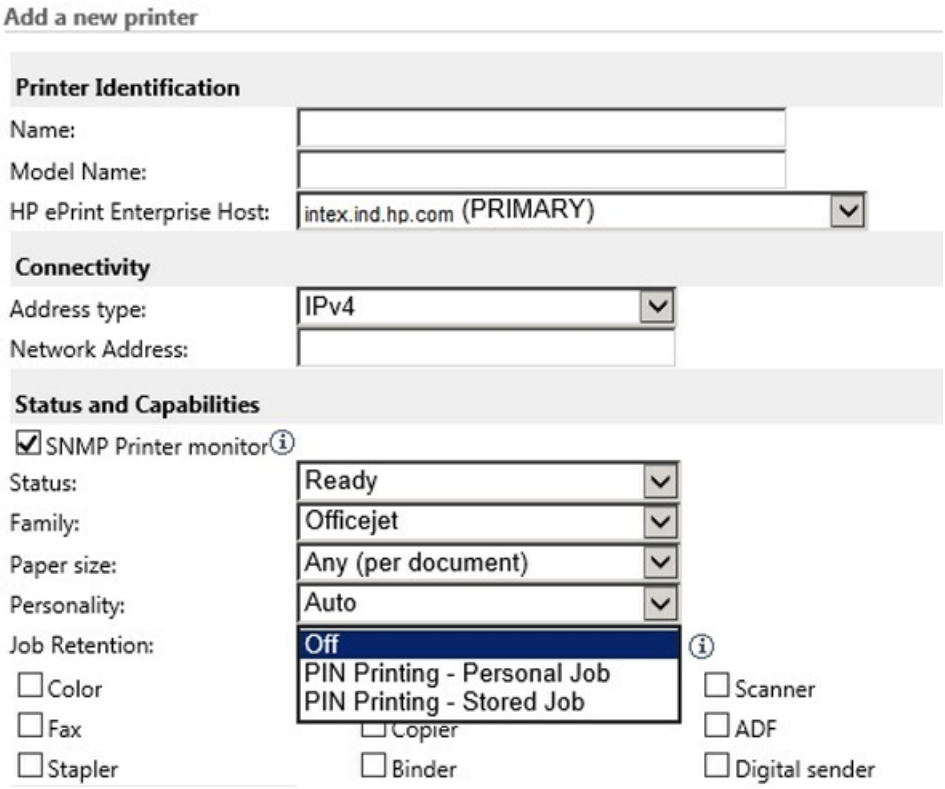
5. Click **OK**.

3.6 Adding Job Retention feature

HP ePrint Enterprise mobile printing solution provides an option to retain print jobs at MFPs (printers with hard drives), and allows releasing the job using a unique PIN.

Print Job Retention is the capability of printer firmware to store print jobs on the device. Printers in the HP ePrint Enterprise Server solution directory can be configured to use Job Retention. Once configured to use Job Retention, all jobs submitted to that printer will be treated as 'personal' and tagged with a personal identification number (PIN). A job-specific PIN is required to release the job from printer console.

Figure 3-8 Job Retention, example



When **Job Retention** is set to **Personal Job** OR **Stored Job**, HP ePrint Enterprise associates a PIN with the user's print job, and the job gets stored on the printer memory or HDD (Hard Disk Drive). The job delivery notification received at the mobile app contains the job release code (PIN).

NOTE: Personal print jobs are stored in MFPs until the device is restarted. These jobs are not printed until released by entering the PIN at MFP control panel. After the job is printed, it is automatically removed from the printer's job storage.

Stored jobs remain in printer storage, even after printing, until printer administrator clears the job from printer.

4 Manage Wi-Fi Printing

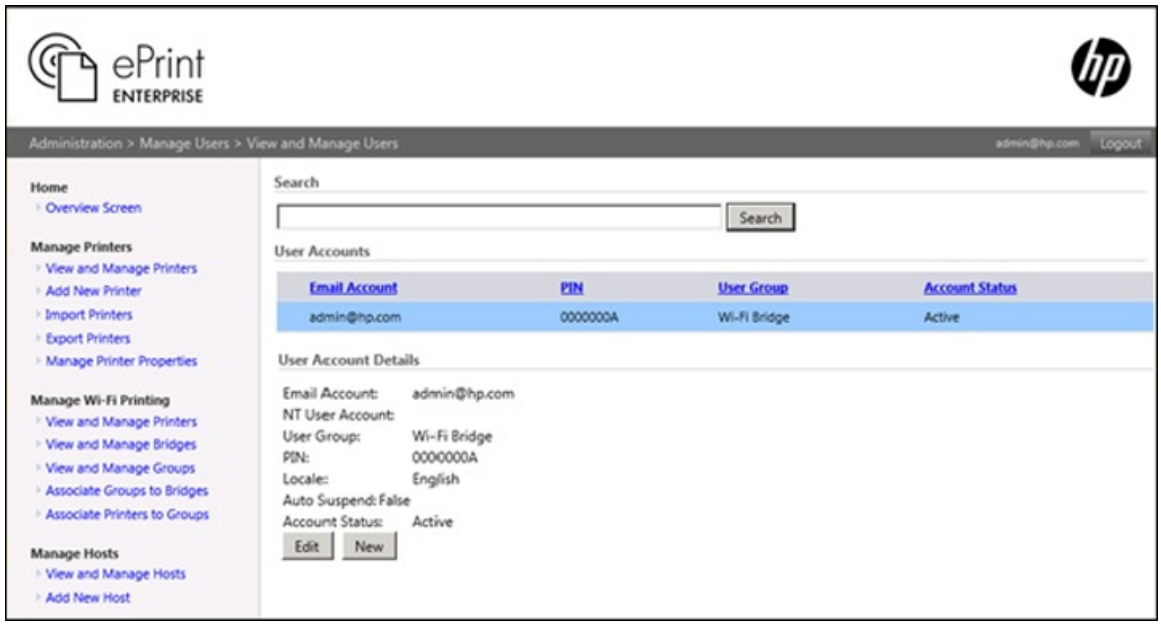
The **Manage Wi-Fi Printing** screen allows you to do the following:

- Manage Wi-Fi Bridge users
- Configure HP ePrint Enterprise Wi-Fi Bridges
- Manage Wi-Fi Bridges and printers
- Establish relation between Bridges to Groups and groups to printer accounts (printer accounts — that are already added to the system)

4.1 Add Wi-Fi Bridge user account

Before adding an HP ePrint Enterprise Wi-Fi Bridge, add a Wi-Fi Bridge user account to be associated with the bridge. To add a Bridge user account, select **Add New User** from left menu.

Figure 4-1 Add new user



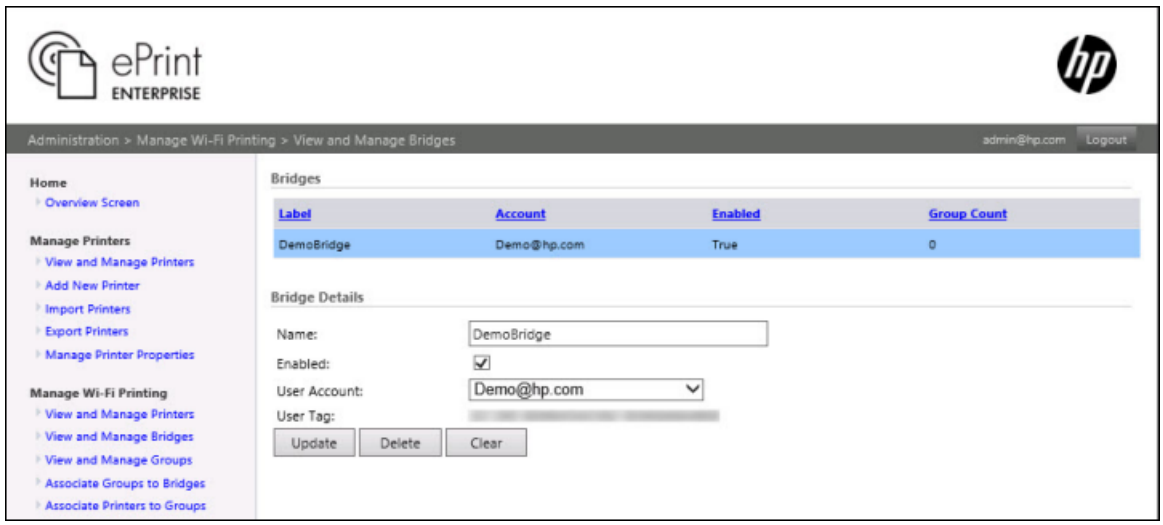
HP ePrint Enterprise for Wi-Fi Printing users will be grouped into Wi-Fi Bridge account. Wi-Fi Bridge users are added in the same way as regular users. For more information, see *View and Manage Users* section of this guide.

NOTE: The user tag information is automatically generated and is an authorized device (Wi-Fi Bridge) identifier.

4.2 View and Manage Bridges

A Bridge is associated with zero or more Groups. The information contained in a Bridge is used to connect to the ePrint Enterprise server and print job(s) to printers associated with the groups.

Figure 4-2 Wi-Fi Bridge configuration



4.2.1 Bridge Details

4.2.1.1 Name

Enter a Bridge name.

4.2.1.2 Enabled

Indicates whether or not the Bridge is enabled. Default is **True**.

4.2.1.3 User Account

This information is automatically provided upon user addition, and represents the account with which the Email account is associated. This field can only be updated by editing the user profile.

4.2.1.4 User Tag

This information is automatically generated in a secured form for each Bridge the user creates.

4.2.1.5 Create

Click **Create** to create a new Bridge.

4.2.1.6 Update

To update a Bridge, select an existing Bridge from the list. Complete the required changes and click **Update**.

4.2.1.7 Delete

Select an existing Bridge from the list and click **Delete**. The Bridge can be deleted if it is no longer required in the network.

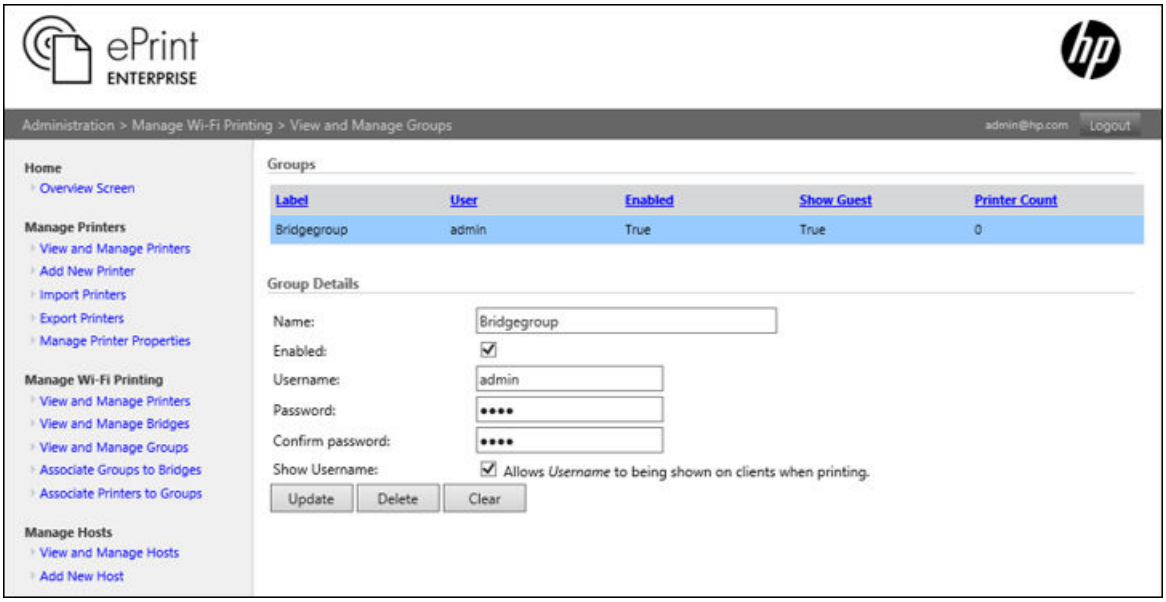
4.2.1.8 Clear

Click **Clear** to remove existing Bridge record data, but keep User Account details.

4.3 View and manage groups

Groups are associated with zero or more printers. The groups also contain information about credentials used to secure the groups.

Figure 4-3 Wi-Fi group configuration



4.3.1 Group Details

4.3.1.1 Name

Enter a Group name.

4.3.1.2 Enabled

Indicates whether the group is active or not. Default is **True**.

4.3.1.3 Guest Username and Password

To make the group secure, type a Guest Username and Password.

4.3.1.4 Show Username

Enable this option to show the Guest Username on clients when printing.

4.3.1.5 Update

To update a group, select an existing Bridge from the list. Complete the required changes, and click **Update**.

4.3.1.6 Clear

Click **Clear** to remove existing group record data.

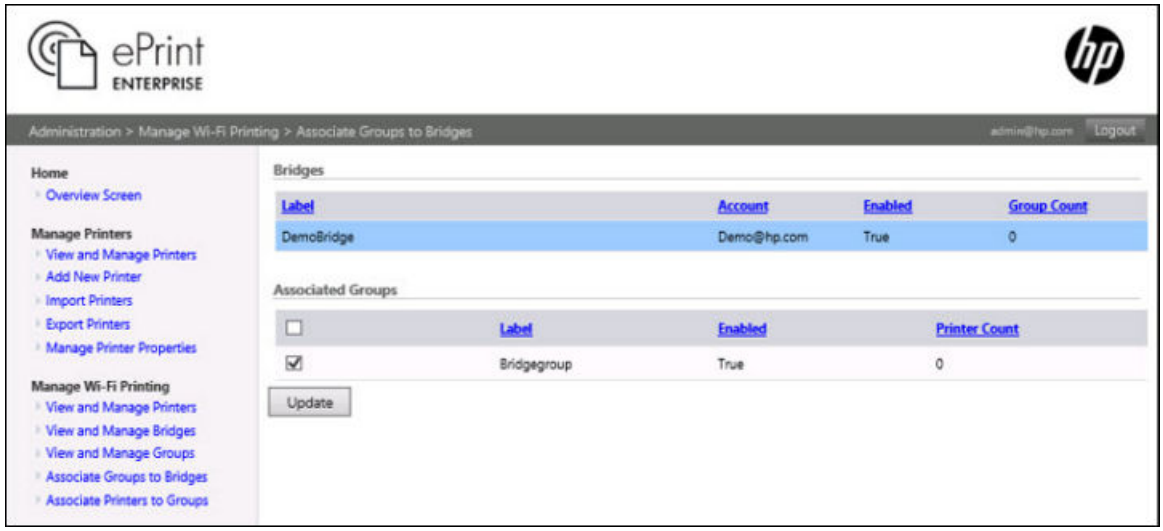
4.3.1.7 Delete

Click an existing group on the list, and then click **Delete**. The group(s) can be deleted if it is no longer required in the network.

4.3.2 Associate Groups to Bridges

The **Associate Groups to Bridges** screen is used to associate Groups to Bridges. It displays the available bridges and groups.

Figure 4-4 Associate groups to bridges

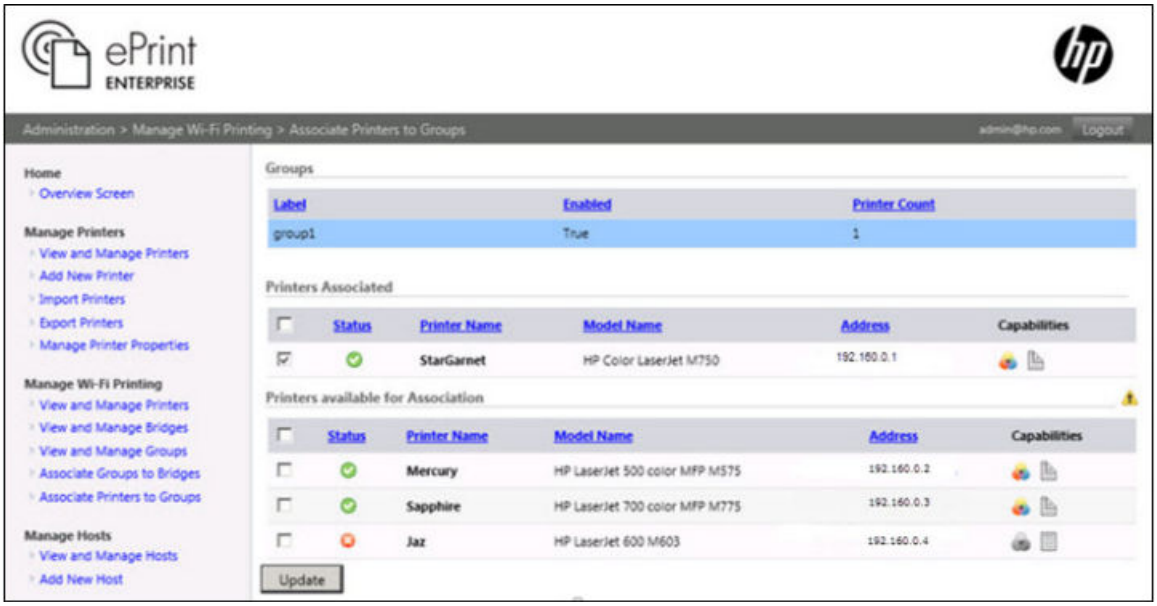


Select an existing bridge on the list, select the group to be associated, and click **Update**. This process will update the Group Count information in the Bridge list.

4.3.3 Associate Printers to Groups

The **Associate Printers to Groups** screen is used to associate printers to groups.

Figure 4-5 Associate printers to groups



Select an existing group, select the printers to be associated, and click **Update**. This process will update the **Printer Count** information in the groups list.

4.3.3.1 Printers Associated

Use the **Printers Associated** column to view printers associated with the groups list. For more information to associate printers to the groups, see the *Adding/editing printers* section of this guide.

4.3.3.2 Printers available for Association

Use the **Printers available for Association** column to view printers available to the groups list. For more information to add printers to the groups, see the *Adding/editing printers* section of this guide.

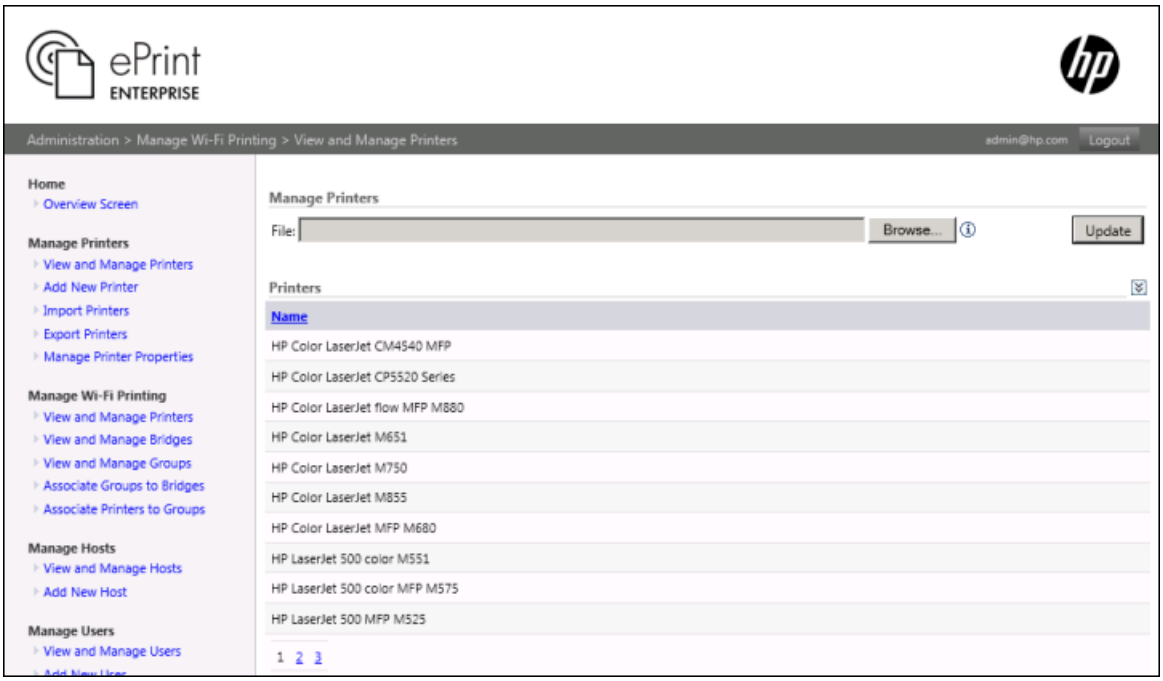
IMPORTANT: When adding or editing printers to associate a group, make sure you set the following fields with the following values:

- **Model Name**: The model name must be the same name used to identify this printer on the system.
- **Address type**: Represents the printer address type, which must be a network node (IPv4). It is important to note that a printer queue also has an IPv4 address, representing the server where the queue is located.
- **Personality**: Dictates the printer language PostScript (PS) to be used by the driver when sending jobs to this printer.
- **Job Retention**: Dictates printer job storage mode (Off) to be used by the driver when sending jobs to this printer.

4.4 View and Manage Printers

The View and Manage Printers section displays printers which are certified for use with Wi-Fi printing.

Figure 4-6 View and manage printers



5 Manage hosts

5.1 View and Manage Hosts

The View and Manage Hosts screen is used to perform updates on Hosts added to the system. You can use the **Search** text box to filter the list.

Figure 5-1 Host search and editing screen

Table 5-1 Host status descriptions

Status	Description
Ready	Host is ready to accept jobs.

Table 5-1 Host status descriptions (continued)

Stopped	Host is not ready to accept jobs.
No Service	HP ePrint Enterprise is not installed on the host.

You can edit a host by clicking the table row. The Host editing form will show host data that can be updated.

For installing the Secondary Instances, the above mentioned deployment Security Token is vital.

5.1.1 Host details

5.1.1.1 Hostname

Enter the Hostname in Fully Qualified Domain Name (FQDN) format.

NOTE: The hostname must be unique.

5.1.1.2 Port number

The Port number must be an integer number between 1 and 65,535. This is the port number in which HTTP/ HTTPS requests will be done against this server.

5.1.1.3 SMTP account

The SMTP account must be a valid email address in user@domain format. It is the Blackberry print path which will submit job request as email to this SMTP account.

5.1.1.4 Version

This field is informative only.

5.1.1.5 Notes

A text field containing information about the host. Although you can manually add and edit hosts, it is recommended that you let the system perform this automatically.

5.1.2 Host cleanup

Use this option to clean all hosts on the system. HP ePrint Enterprise hosts should be restarted for proper system reconfiguration. HP CloudPrint services must be stopped before cleaning the hosts. Host cleanup is typically performed either when a host server needs to be loaded with fresh values, or when host data is transferred from another host which could be down / nonfunctional.

5.1.3 Deleting hosts

Select a host from the list and choose **Delete**.

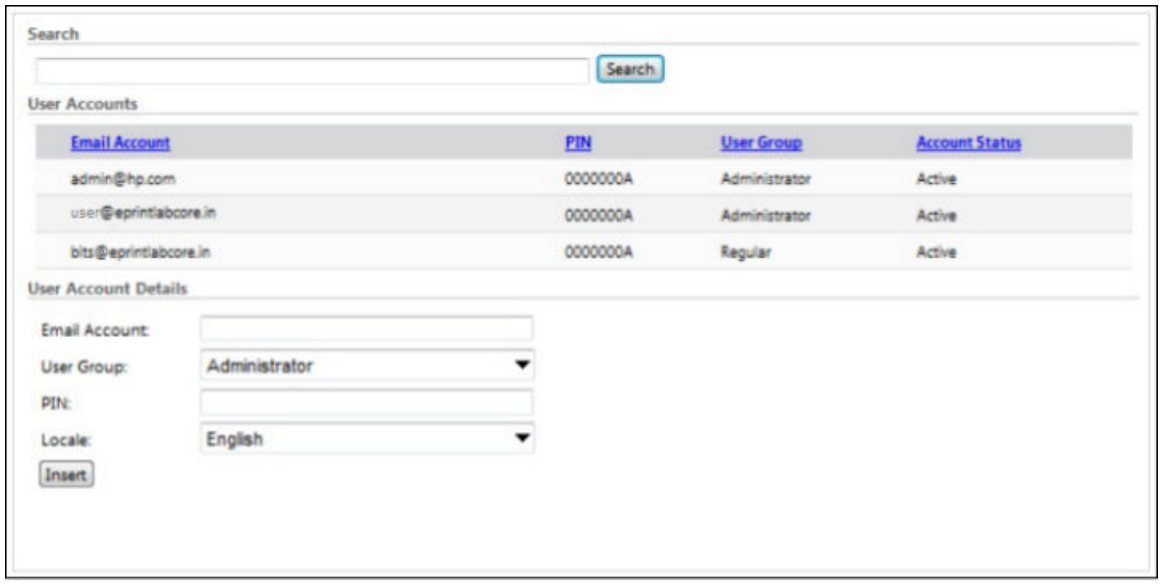
NOTE: This action cannot be reversed.

6 Managing users

6.1 View and Manage Users

The **View and Manage Users** screen is used to perform updates on users added to the system. The user list can be filtered using the search box.

Figure 6-1 User search and editing screen



To edit a user, click the table row and the form will show user information. To update it, choose the **Edit** button.

6.1.1 User Account details

6.1.1.1 Email Account

Enter a valid email address in user@domain format.

6.1.1.2 NT User Account (edit mode only)

This information is automatically provided upon user addition, and represents an LDAP Directory domain user account with which the Email Account is associated.

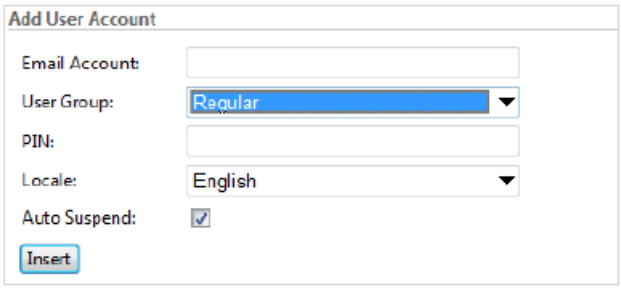
This field can only be updated by editing the user profile. This data is used to validate the user to pull and retrieve the print job submitted to a secure print solution.

6.1.1.3 User Group

HP ePrint Enterprise users are grouped into three accounts: Administrator, Regular, and Guest. Administrator users can access the Administration tool. From a system usage perspective, Administrators have full control

over printer permissions. Default permissions for Regular/Guest users can be overridden by Administrator users.

Figure 6-2 Add User Account for Regular user



Guest designated users become active at **Active On** date. Guest will be automatically disabled on **Suspend On** date. Guest user default active period is three months.

6.1.1.4 PIN

The PIN associated with the user's device. This information is required to trace the metrics of the print job submission from a particular mobile user.

6.1.1.5 Locale

The language used to send notifications (push and email messages) to the user.

6.1.1.6 Password

The password used to access the Administration tool. Used by Administrator group only.

6.1.1.7 Password Tip

The Password Tip field provides a password reminder for the user.

6.1.1.8 Active

Only active users can search for printers and submitted jobs to the system and perform email printing. Uncheck this field to "suspend" a user.

While an auto-suspended user account is set as Active, user has to submit a print job on the same day to avoid getting auto-suspended again.

6.1.1.9 Auto-suspend

The HP ePrint Enterprise application allows for the tagging of Regular users with an Auto-suspend property. The default value for the Auto Suspend checkbox is controlled through the 'AllowAutoSuspend' setting key.

HP CloudPrint Account Management Service will run a daily schedule to suspend those Regular group users who are not actively using HP ePrint Enterprise print feature for a specified long duration. The duration of inactivity is controlled through 'RegularUserInActiveDuration' service setting.

6.1.1.10 Active On

As they are provisioned into HP ePrint Enterprise, users become active if the **Active On** date is same as today's date. User will be in 'suspended' state if **Active On** date is on future date. HP CloudPrint Account Management Service will run a daily schedule to activate user accounts which are future scoped.

6.1.1.11 Suspend On

Applies only to Guest users. A Guest user is active until the **Suspend On** date is reached. The default date of 'Suspend On' is 30 days from today. The maximum value for 'Suspend On' is 90 days from today.

6.1.2 Deleting users

Users cannot be deleted from the HP ePrint Enterprise database due to possible associations with job history. To disable from printing, designate the user as **Suspended**.

6.1.3 Import Users

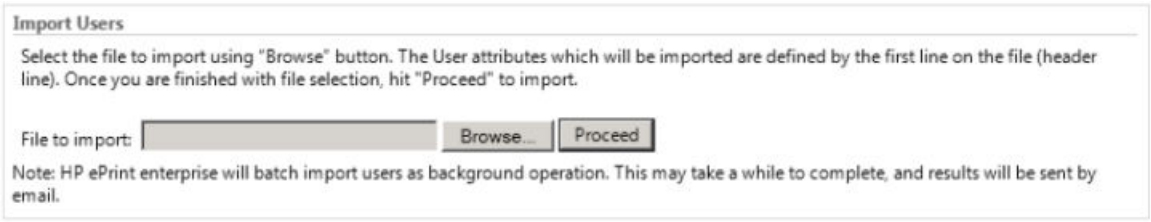
The Import Users feature allows you to add users in batch mode and update their information in the HP ePrint Enterprise database. LDAP Directory administrators must export users in a CSV (Comma Separated Values) file format using their application of choice or a script file. The CSV file can also be manually generated for import of users.

HP ePrint Enterprise administrators use the admin console to batch import users from the CSV file programmatically, as shown in Figure 15.

Users imported into the system are categorized as Regular/Guest, based on domain credentials retrieved from their email account. Users imported into the system from a CSV file cannot be categorized under administrator user group.

A user whose email address domain value does not belong to the allowed list of domains is added as a Guest user in case ProvisionRestrictedToDomains service setting is set to true. When ProvisionRestrictedToDomains is set to false, HP ePrint Enterprise imports all users' as Regular users.

Figure 6-3 Import Users



To import users with a .csv file, select the file to import and click **Proceed**. The import process performs a validation on the record values (availability if license count), and respective success and error messages are sent in the form of an email to the logged-in user.

The following is a .csv file header example. This line is mandatory. Its format should reflect the LDAP Directory attributes.

Table 6-1 Mandatory attributes

Attribute Name	Example	Description
userPrincipalName	John.smith@hp.com	email address

Table 6-2 Optional attributes

Attribute Name	Example	Description
accountDisabled	True or False	Indicates whether Account is active or not
NetBIOSDomain	ASIAPACIFIC	Domain name
sAMAccountName	sjohn	NT account name

Table 6-2 Optional attributes (continued)

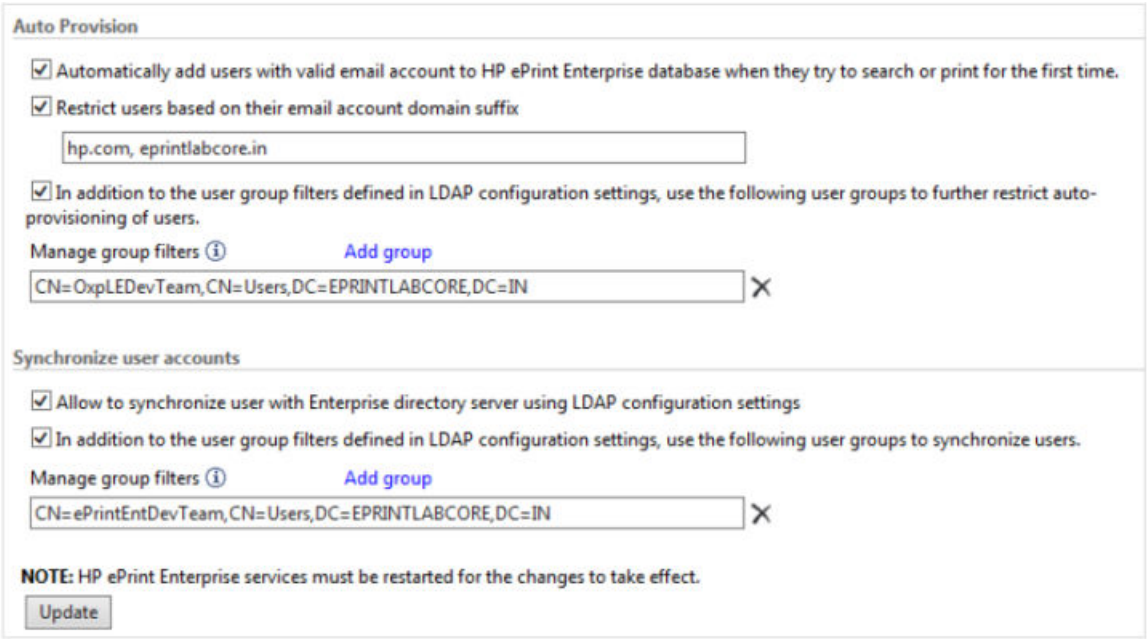
localeID	English (en-US)	The language used to send notifications (push and email) to user.
whenToActive	Date format as per the culture. ex. 2/25/2012	Indicates when the created user becomes active. Used to define the value for Guest User.
whenToSuspend	Date format as per the culture. ex. 2/28/2012	Indicates when the created user becomes inactive or suspended. Used to define the value for Guest User.

The user import procedure reads through the .csv file and updates ePrint Enterprise database.

6.1.4 Provision settings

The following settings allow selection of preferences for enrolling users in ePrint Enterprise.

Figure 6-4 Provision settings



IMPORTANT: Changing any of these variables will only take effect after all services (HP ePrint Enterprise, IIS Admin, SMTP, and World Wide Web Publishing) are restarted.

6.1.4.1 Auto provision

Allow users on the specified list of comma-separated domains to be added to HP ePrint Enterprise as they perform search and print. This can further be controlled through a list of LDAP groups.

6.1.4.2 Synchronize user accounts

In scenarios where enterprise user accounts are synchronized with ePrint Enterprise, configuring this option will perform synchronization at scheduled intervals (refer to UserLDAPSynchronization.WatchDogTime in CloudPrint.Settings.xml).

NOTE: It is mandatory to identify LDAP groups in enterprise directory server, users from which will be synchronized with ePrint Enterprise. If left empty, synchronization will be skipped.

For effective synchronization, it is important to be aware of the user account status in enterprise directory server. As LDAP schema definition could be specific to every enterprise, ePrint Enterprise defines a plug-in to manage defining the LDAP attributes and their definitions. The default implementation in ePrint Enterprise has the plug-in for Active Directory.

7 Manage services and data

7.1 Service Settings

The Service Settings screen is used to edit the HP ePrint Enterprise system configuration. It is a visual representation of the cloudprint.settings.xml file located in the %ALLUSERSPROFILE%/Application Data/Hewlett-Packard/HP CloudPrint/conf folder.

For detailed descriptions of each variable, hover mouse over the text box, or check the "description" tag inside the source XML file.

IMPORTANT: Changing any of these variables will only take effect after all services (HP ePrint Enterprise, IIS Admin, SMTP, and World Wide Web Publishing) are restarted.

To restart all services, either restart the computer, or manually restart each of the following system services:

System Services

- HP Account Management Service
- HP CloudPrint Control Service
- HP CloudPrint Content Service
- HP CloudPrint License Service
- HP CloudPrint Printer Monitor
- HP CloudPrint Service Host
- HP CloudPrint Storage Maintenance
- IIS Admin
- Simple Mail Transfer Protocol
- World Wide Web Publishing

7.1.1 Load configuration file

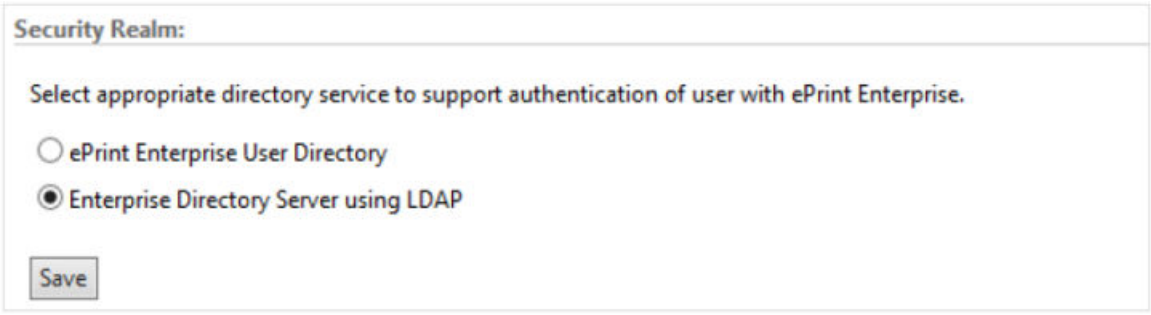
Configuration files can be selected from **Load configuration file**. To make this the current settings file, click **Update**. An automatic backup is always generated, so you can restore previous configurations.

IMPORTANT: Settings loaded from a file will only take effect after all services (HP ePrint Enterprise, IIS Admin, SMTP, and World Wide Web Publishing) are restarted.

7.2 Security Realm

The **Security Realm** screen defines the authentication model for logging in to ePrint Enterprise administration console. The system is configured to use either ePrint Enterprise User Directory or Enterprise Directory Server using LDAP.

Figure 7-1 Security Realm

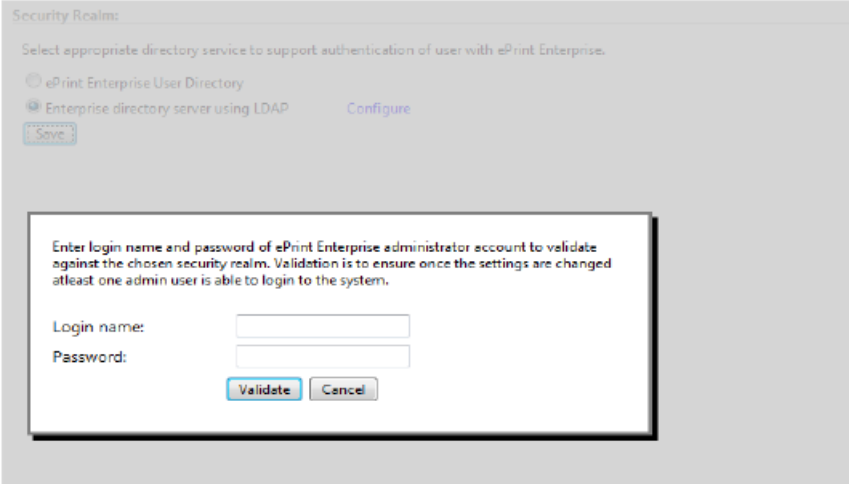


For **ePrint Enterprise User Directory**, user authentication is performed against credentials stored in ePrint Enterprise DB.

For **Enterprise Directory Server using LDAP**, user is authenticated by connecting to enterprise directory server.

As the security realm is requested for change the HP ePrint Enterprise administration console displays a login dialog to validate an admin user who can log in to the new realm.

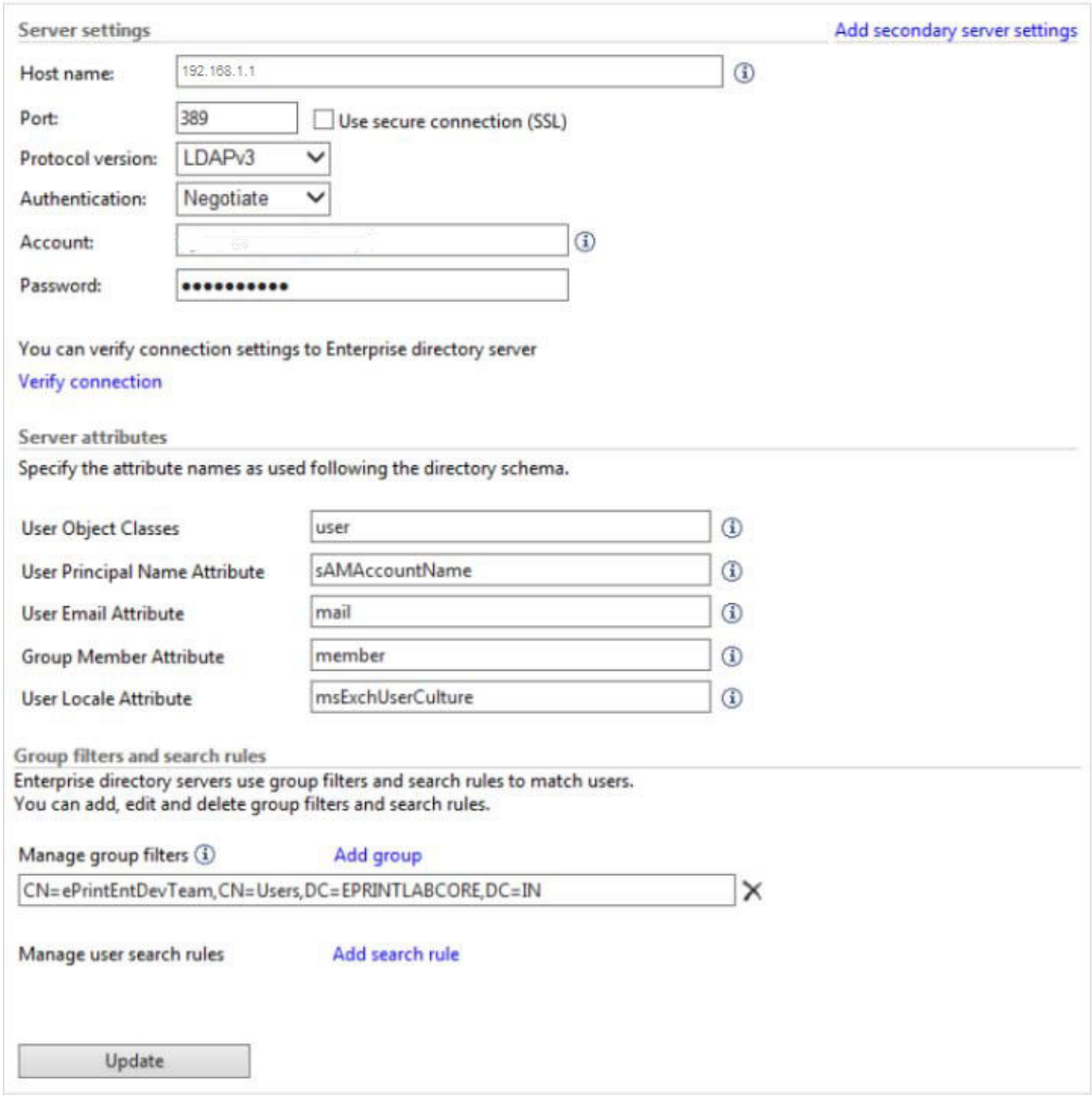
Figure 7-2 Validation of Administrator user account



7.3 LDAP Configuration setting

From this page the administrator can configure the enterprise directory server, the required attributes, search rules, and group filters used to authenticate, synchronize, and auto-provision users from a particular group. The configuration is saved successfully upon verification of LDAP connection being configured.

Figure 7-3 LDAP Configuration setting



7.3.1 Server settings

7.3.1.1 Host name

Fully Qualified Domain Name (FQDN) or IP address of the LDAP server.

7.3.1.2 Port

Port number for connecting through LDAP; default is 389.

7.3.1.3 Using Secure Connection (SSL)

Check to use Secure Socket Layer on connection to LDAP server.

7.3.1.4 Protocol Version

LDAP protocol version to use - values being LDAPv2 and LDAPv3.

7.3.1.5 Authentication

Specify the Authentication method to use on an LDAP connection – values being 'Anonymous', 'Basic', , 'Negotiate' and 'Digest'.

Appropriate user credential details are required in the associated format depending on the authentication method described for the enterprise directory server. e.g.

ldapserviceuser@mycompany.com or

domain\username or

cn=username, cn=Users, dc=mycompany, dc=com

7.3.1.6 Verify connection

Use this link to verify the LDAP server connection settings.

7.3.2 Server attributes

Identifies the LDAP attributes relating to the directory schema of an enterprise directory server.

7.3.2.1 User Object Classes

Comma separated attributes that help identify Object Classes in LDAP schema.

7.3.2.2 User Principal Name attribute

Attribute uniquely identifying a user in LDAP schema. This is used in secure pull print workflow to tag print jobs against the user.

7.3.2.3 User Email attribute

Attribute that maps to the email address in LDAP directory schema. The value of this attribute is taken as the email address of user in ePrint Enterprise.

7.3.2.4 Group Member attribute

Attribute distinctively representing user(s) in LDAP group. Used while synchronizing LDAP user group with HP ePrint Enterprise.

7.3.2.5 User Locale attribute

This attribute identifies the location of the user.

7.3.3 Search rules

Search rules will enable enhanced search capabilities on the enterprise directory server.

7.3.3.1 User root Distinguished Name

Identifies the "root" distinguished name of the LDAP entry in context. Based on need, the LDAP lookup can be limited to the listed distinguished name. If left empty, the LDAP Base Distinguished Name is considered in place.

7.3.3.2 Additional filter

Helps to refine search of root Distinguished Name; with general syntax followed being (Boolean-Operator (filter) (filter)).

Boolean operators are AND (&), OR (|), and NOT (!)

e.g. (& (ou=Marketing) (objectClass=*))

7.3.3.3 Search scope

Determines the depth of the LDAP lookup on the Distinguished Name – values can be **Base**, **OneLevel**, and **Subtree**.

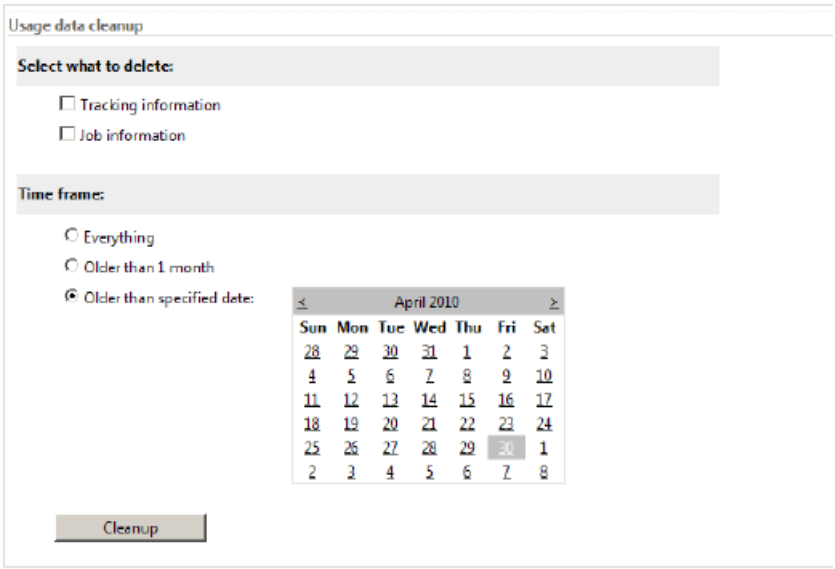
- **Base** - Searches selected root Distinguished Name.
- **OneLevel** - Searches one level under the selected root Distinguished Name.
- **Subtree** - Searches selected root Distinguished Name and all levels under it.

7.4 Usage Data Cleanup

Use this option to clean usage data from the system. Select the data to delete, select desired time frame, and then click **Cleanup**.

NOTE: This action cannot be reversed.

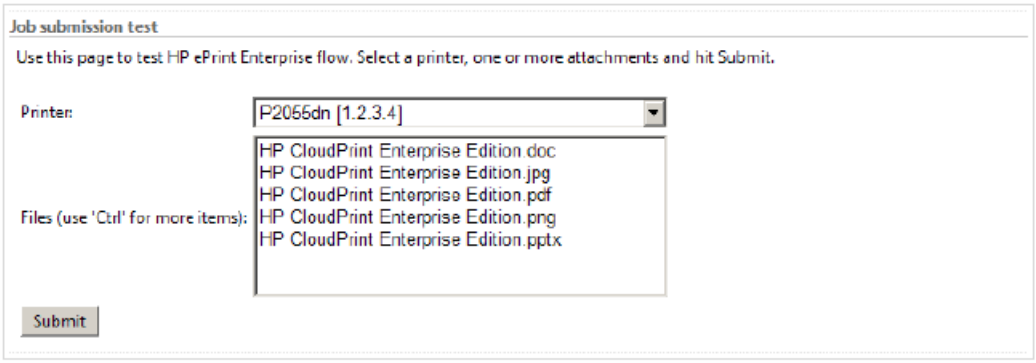
Figure 7-4 Usage data cleanup



7.5 Job submission test

The **Job submission test** tool can be used to perform basic system tests. It generates a sample job on the system.

Figure 7-5 Job submission test



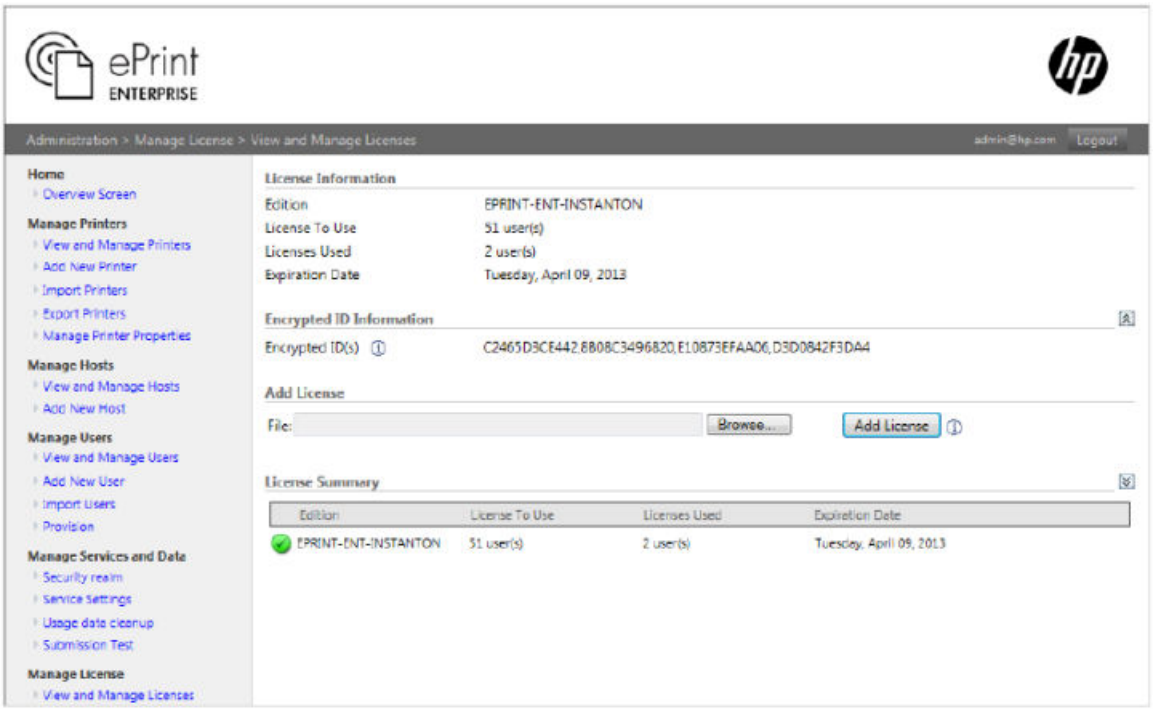
Select the printer you want to test. Select one or more files and click **Submit**. Jobs can be tracked from the **Overview** screen using the **Track jobs** tool. Job rendering is always made to master even if the printer account is configured to use slave.

7.6 Manage License

The Instant-On feature is provided for product evaluation. This feature allows customers to use the product for a limited period of 60 days and 51 users.

(1 user is installed for administrative purposes).

Figure 7-6 License Information



License information provides the availability and consumption of the licenses. It also shows the expiration Date for the license. If License consumption is less or expired, the user can add/renew another license through **Add License** option.

7.6.1 Encrypted ID

The license form displays one or more Encrypted ID(s) used to node-lock licenses alternate to using MAC ID. The Encrypted ID is a combination of server attributes including MAC ID and hard drive serial number, but is a one-way hash and irreversible.

For systems with multiple network cards, equal numbers of Encrypted IDs are formed. Click **Show All** link to view all Encrypted IDs. It is recommended, although not mandatory, to use the first Encrypted ID to node-lock licenses.

Stacking of user licenses is not valid while different MAC and Encrypted IDs are used to node-lock licenses.

NOTE: SKUs are different for channel and subscription. SKUs are based on licensing and SKU Id will differ for different editions of the product. Use appropriate SKU to claim Encrypted ID based licenses. Encrypted ID based node locking does not apply for channel license.

7.6.2 Add License

Once a license is generated, users can node lock the license to a host by selecting the appropriate license file and clicking **Add License**.

7.6.3 License Summary

The Summary section displays a list of licenses applied, Active edition, how many licenses are used, how many are left, and the expiration date of the license.

Icon	Status	Description
	Active	Current edition which is active.
	Expired	Licenses bound by dates which have expired.
	Inactive	License which became inactive when an active license was applied over it.

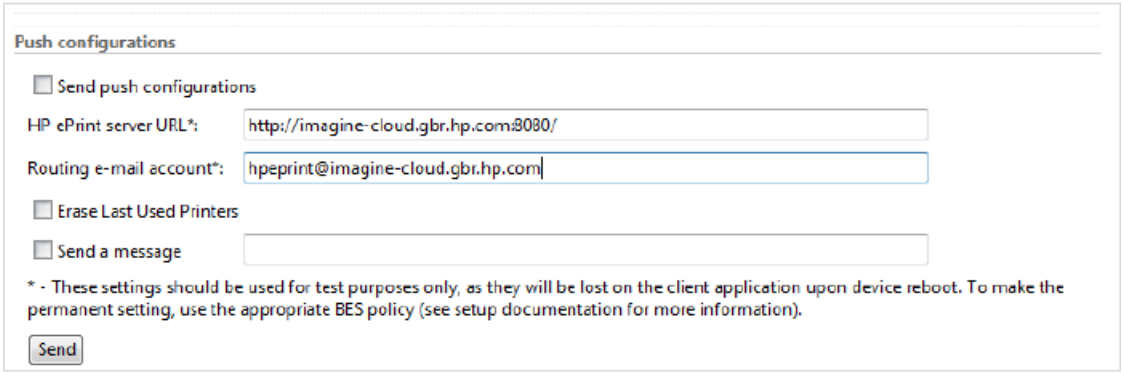
8 Manage mobile clients

8.1 Push Configurations (Blackberry specific)

Use this tool to send configurations to the HP ePrint Enterprise Blackberry clients (server URL and printing/routing email account).

This method should only be used for testing purposes. The recommended method is to send these settings as BES policies. For more information, see the *HP ePrint Enterprise Server Installation Guide*.

Figure 8-1 Push configurations tool with port



8.1.1 Search recipients

Use the **Search recipients** text box to filter the users list. The behavior is similar to the **View and Manage Users** tool.

8.1.2 Select recipients (users)

Before clicking **Send**, select the checkbox for each desired recipient.

8.1.3 Type recipients (groups)

Enter the BES groups to which you want to send configurations. These groups should be valid BES groups.

8.1.4 Push configurations

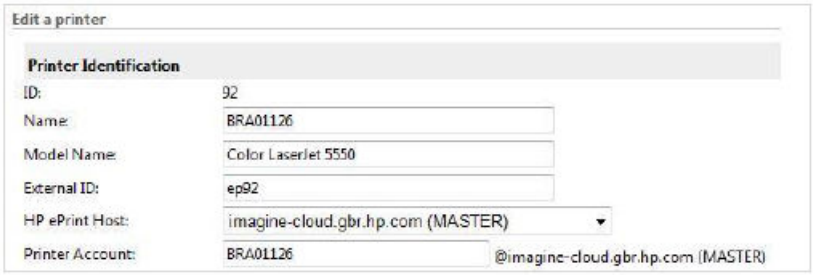
Select what you want to send to HP ePrint Enterprise clients. You can send a new HP ePrint Enterprise host URL, erase last used printers, and/or send a message by clicking the **Send** button.

9 Email printing

Email printing is a capability that allows submission of print jobs by simply forwarding emails to known printer addresses. This can be done from any email client capable of reaching the user's corporate email account, so the originating email address ("From") has to be compatible with the authorized email account settings in HP ePrint Enterprise.

To do this, an email account should be assigned to the printer in the HP ePrint Enterprise database, either from the Import tool or the regular printer editing screen. If no email is assigned during insertion, an address auto-generates which can later be changed. To change a printer address, go to **View and Manage printers**, select a printer and click the **Edit** button. The following screen should display:

Figure 9-1 Edit a printer screen



The printer email account consists of an account name and domain. The domain is always the same as HP ePrint Enterprise Host field, and therefore not editable. To change the email domain you have to change the associated host name. Emails sent to this address should be able to reach the associated HP ePrint Enterprise host. The originating user can send this from any platform capable of using the corporate account. As this is essentially a non-BlackBerry experience, no MDS push messages can be sent back to the user about job status. Instead, an email is sent to the user notifying of job submission and final status (success or failure). No searching services are available for email printing. Administrator must provide users with address.

To enable email printing, the following settings should be set in cloudprint.settings.xml (section EmailPrinting):

- **EmailPrinting** — Set to "True" if email printing is enabled (default is True).
- **EmailPrintingPIN** — Default PIN number used to identify email print jobs (to help track)

Since email printing uses email to send notifications about print jobs, the following properties should also be configured:

- **SMTPServerAddress** — Defines SMTP server IP Address or hostname for sending email notifications.
- **SenderEmailAddress** — Defines email account to use for sending notifications.
- **SMTPServerPort** — Defines port on which SMTP server listens for connections. Default port is 25.
- **SMTPServerUsesSSL** — Defines whether or not SMTP Server connection uses SSL.

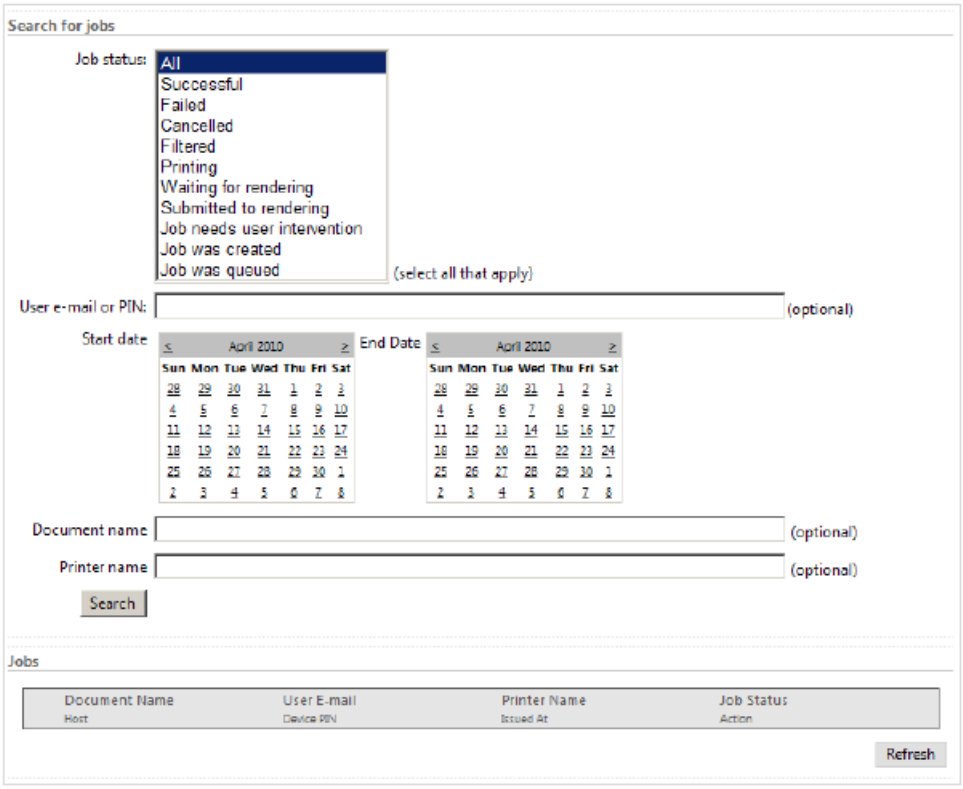
Since email printing is a solution integrated into the customer's network, understanding how to route emails from the corporate email server (MS Exchange, Lotus Domino, etc.) to the HP ePrint Enterprise SMTP servers is required.

10 Events and Tracking

10.1 Track jobs

Use **Track jobs** to view jobs submitted to the HP ePrint Enterprise server. Jobs can be filtered by status, user (that submitted the job), document name, or printer name.

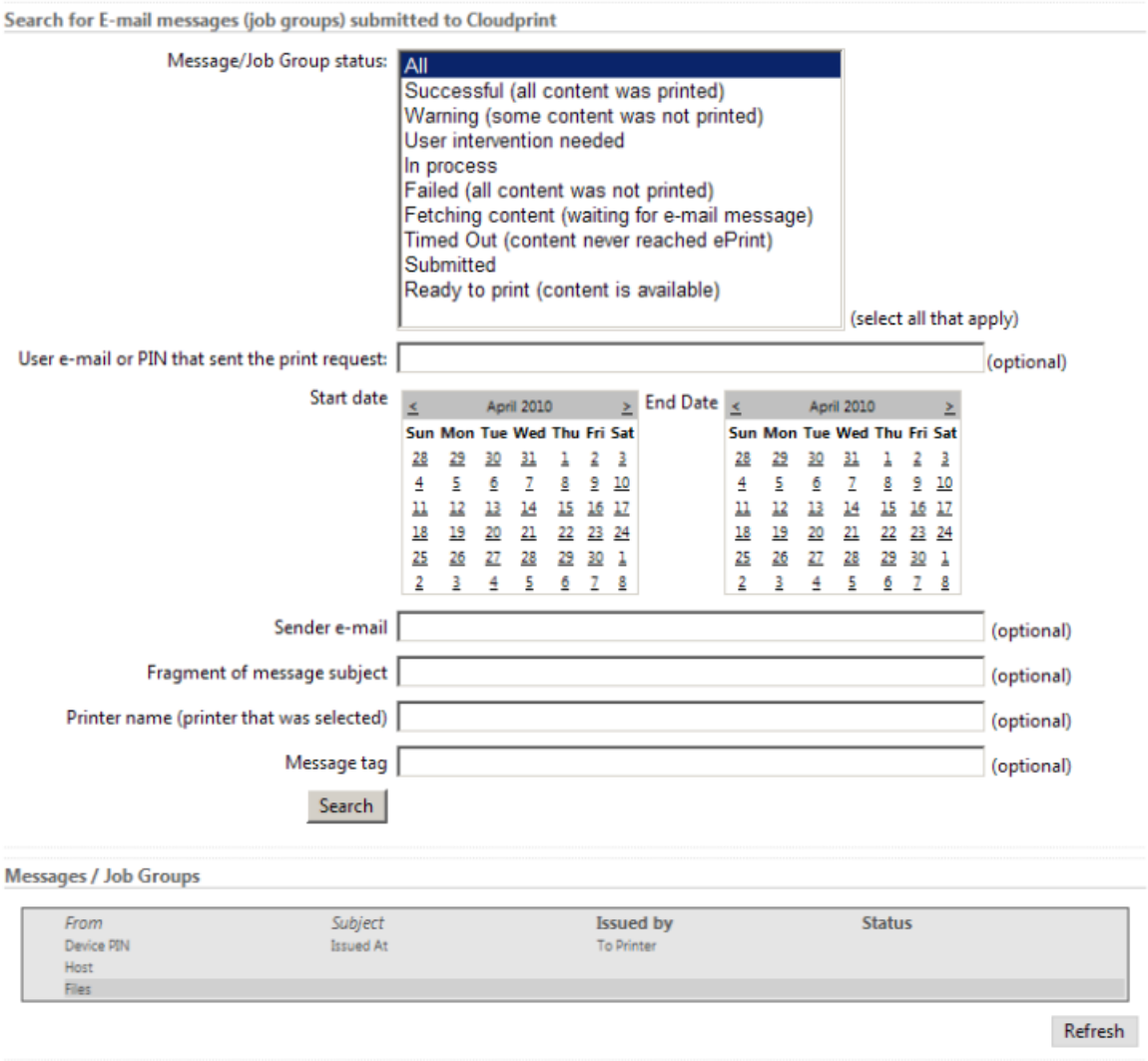
Figure 10-1 Track jobs screen



10.2 Track messages

Use **Track messages** to view jobs processing through the system. Jobs can be filtered by status, user (that submitted the job), message subject, printer name, or message tag.

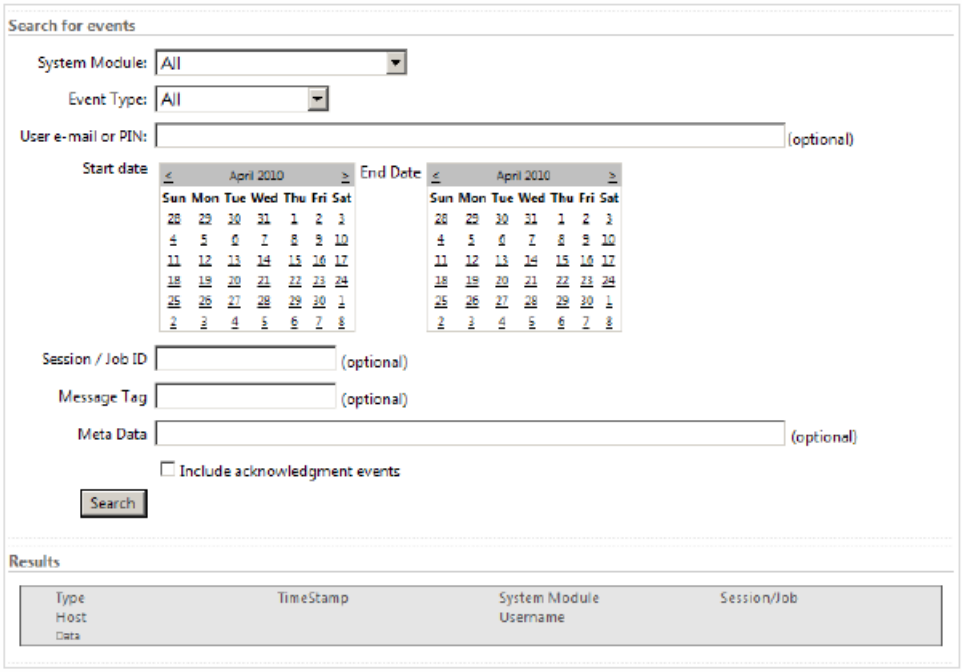
Figure 10-2 Track messages screen



10.3 Track events

Use **Track events** to check the HP ePrint Enterprise job flow. You can filter on the module that generated the event, the event type, the user associated with the event, job ID, and message tag, and event data.

Figure 10-3 Track events screen



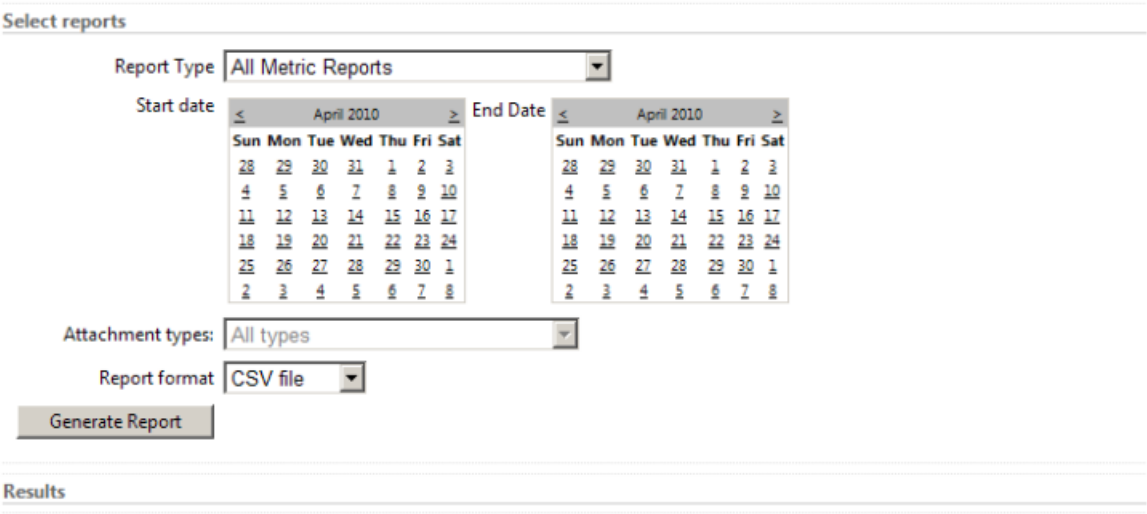
11 Reports

11.1 Metrics Report

Use **Metrics Report** to gather statistical system usage. Three report formats are available: CSV, Text, or Screen (web).

Click **Generate Report** to create the report. For CSV or Text formats, a screen asking to save a file will display.

Figure 11-1 Metrics Report



12 New API configuration

12.1 Introduction

HP ePrint Enterprise versions 1.5 and later are able to accept jobs from any client (not only from BlackBerry smartphones) through the use of a new API.

This API is installed by default in a web application named *gd* inside the *IIS root* (e.g. C:\Inetpub\wwwroot) folder. To test if installed and working, point a web browser to

http://<installation host>/gd/version/

Or

http://<installation host>:<port>/gd/version/ (This URL returns a number containing the version of the API that is currently installed.)

12.2 API configuration

Since the new API is configured as a separate web application, it has its own settings. The API is configured by editing the following files:

- **cloudprint.setttings.xml** – through the section entitled DirectoryInformation.
- **web.config** – inside the IIS root\gd folder

12.2.1 DirectoryInformation (cloudprint.settings.xml)

This section contains information about the HP ePrint Enterprise server that will be used by clients. Many of these fields are for information purposes only, and can be updated through the Manage Services and Data option in the Administration UI.

12.2.1.1 DirectoryId

The directory identification for API calls – usually eprint.

12.2.1.2 DirectoryName

Name of directory used by API calls.

12.2.1.3 SelectableAttachments

Indicates if selectable attachments are supported.

12.2.1.4 PrintEmailBody

Indicates if HP ePrint Enterprise should support printing of email bodies.

12.2.1.5 BrandName

Brand name for the directory.

12.2.1.6 DisclaimerDisplay

Indicates if disclaimers should be displayed.

12.2.1.7 SecureConnections

Indicates if client connections should use secure communication through https (see the *Secure Communications* section of this guide for more information).

IMPORTANT: Changing any of these variables will only take effect after IIS Admin (World Wide Web Publishing) services are restarted.

12.2.2 Web application Configuration (web.config)

Changes to any of these settings is not recommended unless users experience issues when submitting large jobs, or to configure secure communications.

12.2.2.1 httpRuntime

- **executionTimeout** – time in seconds that clients have to submit requests to the server. The default is 10 minutes.
- **maxRequestLength** – maximum request size in bytes to submit to the server. The default value is 10MB.

12.2.2.2 system.serviceModel

- **sendTimeout** – time in seconds that clients have to submit requests to the server. The default is 10 minutes.
- **maxReceivedMessageSize** – maximum request size in bytes to submit to the server. The default value is 10MB.

12.3 Secure communications

You can activate Secure communications on the web server running HP ePrint Enterprise. To activate Secure communications (HTTPS), you must do the following configurations:

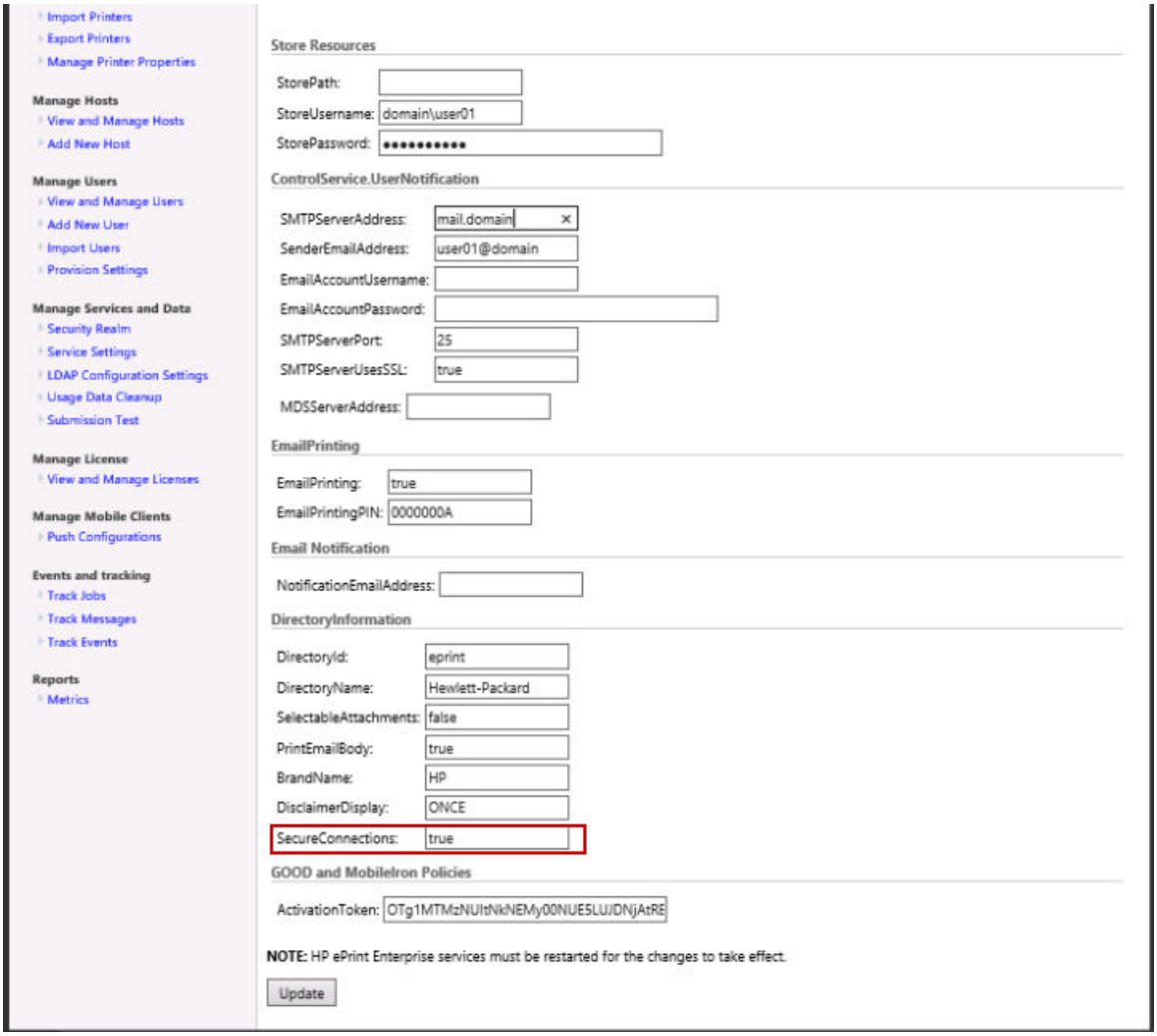
12.3.1 HP ePrint Enterprise — Service Settings

To enable client connections to use HTTPS, complete the following steps:

1. Log on to the HP ePrint Enterprise Administration tool.
2. In the main menu under **Manage Services and Data**, click **Service Settings**.

3. In Directory Information set the **SecureConnections** to **True**.

Figure 12-1 Service Settings



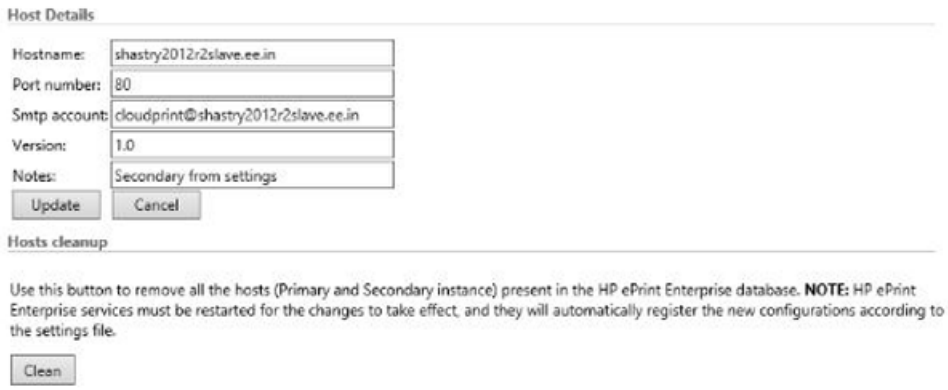
4. Click **Update**.

12.3.2 HP ePrint Enterprise — Host Details

1. In the Main menu, under **Manage Hosts**, click **View and Manage Hosts**.
2. Click the Host name. In the **Host Details** section, click **Edit**.

3. In the **Host Details** section, set the port specific to HTTPS binding for the respective Master and Slave hosts.

Figure 12-2 Host details



4. Click **Update**.

12.3.3 HP ePrint Enterprise — web.config

To enable secure communications the **bindingConfiguration** must be changed from http to https in web.config. The default installation uses http as the current configuration:

Figure 12-3 Binding configuration

```
<!-- WCF REST configuration -->
<system.serviceModel>
  <services>
    <service name="Com.Hp.CloudPrint.RequestController.ePrintRestService" behaviorConfiguration="eP
      <endpoint binding="webHttpBinding" bindingConfiguration="http" contract="Com.Hp.CloudPrint.Re
    </service>
  </services>
  <bindings>
    <webHttpBinding>
      <binding name="https" maxReceivedMessageSize="104857600" sendTimeout="10" closeTimeout="10">
        <security mode="Transport"/>
      </binding>
      <binding name="http" maxReceivedMessageSize="104857600" sendTimeout="10" closeTimeout="10"/>
    </webHttpBinding>
  </bindings>
```

NOTE: File web.config is located at c:\inetpub\wwwroot\gd\

IMPORTANT: Changing any of these variables will only take effect after IIS Admin (World Wide Web Publishing) services are restarted.

12.3.4 HP ePrint Enterprise client configuration

Individual clients should use the HTTPS URL to connect to the HP ePrint Enterprise server.

12.4 Disclaimers

Disclaimers are legal messages that clients may display before submitting jobs to HP ePrint Enterprise server. The configuration of disclaimers is done by editing the IIS root\gd\disclaimers\en-US.xml file.

Figure 12-4 Default disclaimers

```
<?xml version="1.0" encoding="utf-8"?>
<disclaimers display="ONCE">
  <disclaimer>
    <title>Terms of Use</title>
    <text>
      By clicking "I agree", I accept the HP Terms of Use.
      Click on the button below to read the terms and conditions on your Internet browser.
    </text>
    <link to="http://welcome.hp.com/country/us/en/termsofuse.html">HP Terms of Use</link>
  </disclaimer>
</disclaimers>
```

Disclaimer details are:

- display — a required attribute that indicates if disclaimers should be displayed:
  - ALWAYS — meaning the user will see the disclaimer every time a job is submitted.
  - ONCE — meaning the user can dismiss the disclaimer on future submissions.
- title and text — contains the disclaimer's title and text to be presented to the user.
- link — used to open the web browser to present the informed URL.

IMPORTANT: At least one disclaimer should be present.

12.5 Messages

Messages are optional informational text about the HP ePrint Enterprise server that clients may display (typically after searches). A default HP ePrint Enterprise installation does not contain any messages.

Message configuration is done by editing the *IIS root\gd\messages\en-US.xml* file.

Figure 12-5 Adding messages

```
<?xml version="1.0" encoding="utf-8"?>
<messages>
  <message>Type your 1st message here.</message>
  <message>Type your 2nd message here.</message>
</messages>
```

Enter any arbitrary text between <message></message> tags to add a message. To delete a message, remove the associated <message> element.