

HP Access Control (HP AC)

Administrator Guide

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1 Introduction

With HP Access Control (HP AC), an HP JetAdvantage Security Solution, you can protect confidential information, enhance device security and management, while improving company-wide printing policies. Providing a cost-effective way to create a more secure and efficient imaging and printing environment, HP Access Control Solutions transforms imaging and printing practices while reducing costs and keeping data and devices secure.

1.1 Solution benefits

It is now easier than ever to protect print jobs and devices, improve workflows, and monitor printing practices—all while reducing costs and supporting organization-wide security, compliance, and environmental initiatives. Designed to integrate easily with HP and other printing devices, you can select specific HP Access Control Printing Solutions to address your needs.

Some of the benefits you can experience with the HP Access Control Solution include:

Secure Authentication: Access Control Secure Authentication offers a variety of authentication options—
including Windows authentication, HP proximity card readers, PIC/PIN codes—to protect your devices and
prevent unauthorized use.

Learn more about Secure Authentication

Secure Pull Printing: HP Access Control Secure Pull Printing reduces unclaimed prints and increases
efficiency. Users can print to a secure network, authenticate with ease, and retrieve jobs when necessary—
even on the go.

Learn more about Secure Pull Printing

 Job Accounting: HP Access Control Job Accounting makes it easy to accurately track and gather data, analyze the results, and then create and send reports. Apply mined data to allocate print costs, motivate employees to print smarter, and provide IT with the necessary information to improve fleet-wide forecasts.

Learn more about Job Accounting

• **Intelligent Management**: HP Access Control Intelligent Management solutions help you control device usage, modify behavior, reduce costs, and enforce security goals.

Learn more about Intelligent Management

1.2 Solution components

HP Access Control (HP AC) software is comprised of the components and corresponding tasks listed in the following table.

Component	Туре	Task
Enrollment Service (IRM Authentication Web Service)	IIS Web Service	Match user's credentials to a PIN or Badge number and store details in Active Directory or SQL.
Authentication Service (IRM Authentication Web Service)	IIS Web Service	Match user's previously stored PIN or Badge number to user authenticating at the device allowing secure access to the function requested (i.e. secure print, email, copy).
User Rights (IRM/DRA Authorization Web Service)	IIS Web Service	Validates user rights to access MFP walk-up functions (i.e. copy in color).

Licensing Service	IIS Web Service	Validates device licensing for pull printing & authentication (24 hours for FutureSmart devices, every hour for non-FutureSmart devices). Validates user licensing for job accounting (checks every 24 hours).
OXPd Professional Service (OPS)	IIS Web Service	Hosts printer configurations for OfficeJet Pro devices.
Intelligent Print Management (IPM) Enterprise Bundle only	IIS Web Service	Manages and controls printing processes by setting conditions, actions and notifications (i.e. force to monochrome).
Print job list retrieval (SPPE/SPP Web Service)	IIS Web Service	Build a print job list for the authenticated user for job selection or deletion.
Print job retrieval (SPPE/SPP Web Service)	IIS Web Service	Retrieve requested print job and send to the device the user is authenticated at.
Print job submission (Enterprise Spooler)	HP AC Enterprise Service	Submit print job to be stored in the spool directory for future retrieval.
Print job submission (Express or Enterprise with shared queues)	HP AC Port	Submit print job to be stored in the spool directory (for future retrieval).
Job Accounting Statistics Service	IIS Web Service	Collects XML files from HP FutureSmart devices.
Job Accounting Data Collector	IIS Web Service	Collects XML printer data from devices (push) via FTP, HTTP, or HTTPS.
Job Accounting Web Server	IIS Web Service	Queries the Job Accounting Database server to access the data and enables navigation through the application via web browser.
Enterprise License	Windows Service	Allows for a centralized license server without having to duplicate licenses on additional servers. The license service will communicate to the license database.

1.3 HP AC installation bundles

HP Access Control is a suite of modules that provide authentication, authorization, tracking, rules based printing, and secure pull printing capabilities. HP Access Control has two different bundles designed to provide the capabilities for your organization's requirements:

- HP Access Control (HP AC) Express
- HP Access Control (HP AC) Enterprise

1.3.1 HP Access Control (HP AC) Express

The HP AC Express bundle includes Job Accounting and Secure Pull Print Express. Secure Pull Print Express is a printing solution that allows users to securely print stored jobs from a server to any printer or MFP using a wireless mobile device, Web page, or at the print device. HP Access Control (HP AC) Secure Pull Print Express helps any organization decrease costs by reducing the amount of unclaimed documents on the printer's output tray and increase security by requiring authentication to release jobs.

The Secure Pull Print Express solution includes the following components:

- **Authorization (Intelligent Rights Management)**: Provides individual or group-level access to use device functions (i.e. copy, email, etc.)
- Authentication:
 - PIN/PIC (numeric or alphanumeric user ID code)*
 - Proximity Cards

- Touch-to-Sign-In from mobile devices with NFC support
- Windows authentication (alternative authentication for proximity cards)*
- **Secure Pull Print Express**: Installs the Secure Pull Print Express component to securely release print jobs from a mobile device or from the front panel of the device.
 - Authorization for access to device functions (Intelligent Rights Management)
 - Alias Printing
 - Encryption
 - Multivendor device support
 - Touch-to-Release (from mobile devices)
- Job Accounting: Track print device usage and generate detailed reports.
 - Job Accounting Server: Install the Job Accounting component to generate detailed reports of print device usage information.
 - In-Device tracking: Through an agent component or as part of the device's firmware for in-printer tracking of printer usage.
 - Quota (copy and digital sending) and Allocation

*not supported on non-FutureSmart single function printers

1.3.2 HP Access Control (HP AC) Enterprise

The HP Access Control Enterprise bundle includes all of the features of HP Access Control Express and provides these additional features:

- Intelligent Print Management (IPM): Create conditions, actions, and notifications for rules-based printing.
- Device Analysis: Gathers information about networked printers and creates detailed analysis reports.
- **Secure Pull Print Enterprise**: Install the Secure Pull Print Enterprise component to securely release print jobs and for remote printing.
 - Enterprise Spooler
 - Pull printing including Roaming
 - Delegate Printing
 - Assured Job Delivery
 - Client-based pull printing (with local job storage)
- Job Accounting: Track print device usage and generate detailed reports.
 - Print Server: Installs the Printer Configuration component to configure printers for tracking, quota, or rules-based printing (IPM) for devices that do not support in printer agents.
 - Direct Tracking Module (DTM) This allows HP print devices to send job accounting tracking information to the server through confirmation traps (on supported devices) that contains basic job information and print job status.

1.3.3 Server installation

Server installation allows you to choose which options are to be installed on the target server. This allows IT administrators to install only the functions needed in a multi-server environment to support pull printing,

authentication, and job accounting requirements. This is most useful when the customer environment requires separate, dedicated servers. For example, some customer environments require one dedicated authentication server, a separate dedicated pull printing server, and yet another dedicated job accounting server.

1.3.4 Stand-alone print server installation

Stand-alone server installation allows you to install either Job Accounting or rules based printing (IPM) on separate servers. This allows IT administrators to install print server functions needed in a multi-server environment to support print server tracking, or rules-based printing from a print server.

2 Solution requirements

The HP Access Control (HP AC) installation detects what components are required to run HP AC on your system, and then automatically installs the required components. The following sections list the required components for HP AC, according to the installation bundles.

2.1 Minimum server hardware requirements

CPU:

- Dual-core 1.6GHz recommended
- Medium size production servers (500,000 to 1 million pages/month): 4 x CPU
- Large size production servers (+ 1 million pages/month): 8 x CPU

Memory:

- Medium size production servers: 8-12 GB RAM is recommended (500,000 to 3 million pages per month)
- Large size production servers: 12-16 GB RAM is recommended (beyond 3 million pages per month)
- Additional 2 GB RAM if SQL is running on the same server as HP AC.

Disk Space:

- Job Storage: 100 MB plus the expected average storage space by user multiplied by number of users (50 MB x 10 users = 500 MB).
- NOTE: If print storage is unknown then a good reference number for planning is 50 MB/user.

Network Connectivity:

1NIC with TCP/IP and UDP supported, minimum 1 Gbps recommended

2.2 Server requirements

NOTE: Ensure you consult with HP before installing HP Access Control on a server hosting any other software applications.

Operating system (64-bit):

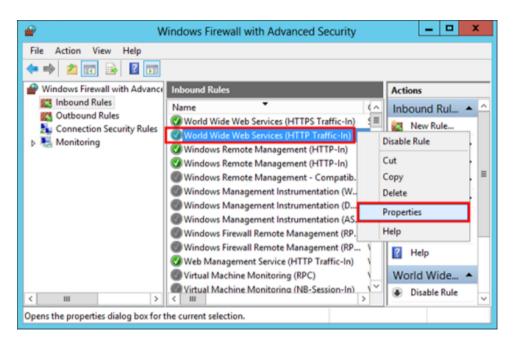
- Windows Server 2008 (32 and 64-bit)
- Windows Server 2008 R2
- Windows Server 2012
- Windows Server 2012 R2
- Windows Server 2016

Job Accounting:

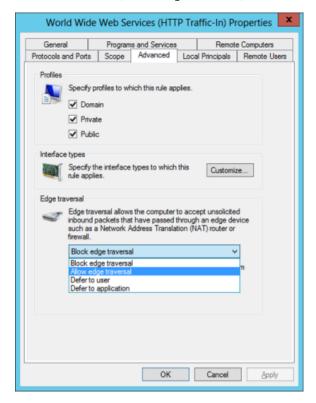
- For non-FutureSmart HP devices, Microsoft Internet Information Service requires that either HTTP upload (port 80 with basic authentication) or FTP upload (with basic authentication) be allowed.
- For Job Accounting tables and charts to display, Microsoft Excel 2007 or newer is required.

Other:

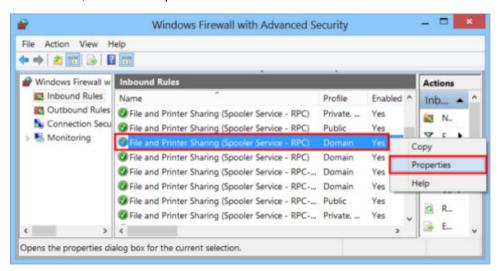
- Server joined to the same domain as the end-users, or to a domain with a trust relationship with the end users.
- Static IP address
- All security patches up to date (as per Windows Update)
- HP AC Enterprise: LPD Service or Unix Printing service disabled, or you will be required to change the
 default ports HP AC Enterprise Spooler uses.
- v3 supported printer drivers
- Microsoft UrlScan (or any similar port/protocol blocking tool) must not be installed on the same server as HP AC.
- Antivirus: If configured on the server, it should not disable network communication through the required ports. Best practice is to set an exclusion for the pull print files directory.
- Microsoft .Net Framework and IIS must be installed manually on a Windows Server 2012 or 2016, if the server does not have internet access.
- HP AC cannot be installed on a server with Windows Server Update Services (WSUS) installed.
- Windows Firewall: To ensure reliable connections between the server and printing devices, it is highly recommended to turn off the firewall on the HP AC server. If the firewall cannot be disabled:
- NOTE: The Windows Firewall recommendations apply when connecting to HP FutureSmart devices with firmware older than version 3.2.1, and when connecting to HP non-FutureSmart devices with firmware older than version 13.3.5.
 - Configure the server to accept inbound packets from devices that have passed through the
 firewall by changing the World Wide Web Services properties. On the HP AC server, go to Control
 Panel > Windows Firewall > Advanced Settings > Inbound Rules. Right-click the World Wide Web
 Services (HTTP traffic-in) and select **Properties**.



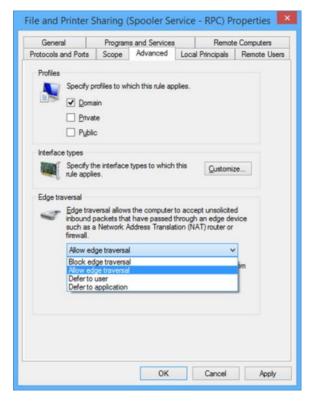
2. In the Advanced tab, under Edge Traversal, select Allow Edge Traversal and click OK.



3. Allow the server to accept inbound packets from devices that have passed through the firewall by changing the Spooler Service properties. On the HP AC server, go to Control Panel > Windows Firewall > Advanced Settings > Inbound Rules. Right-click File and Printer Sharing (Spooler Service – RPC) and select Properties.



4. On the Advanced tab, under Edge Traversal, select **Allow edge traversal** and click **OK**.



2.2.1 Virtualization

HP AC will function in any virtualized environment (e.g. VMWare or Microsoft Hyper-V) capable of running any of the supported operating systems. Virtualization is transparent to HP AC.

2.3 Database server requirements

Database server requirements are as follows:

- Microsoft SQL:
 - 2008, 2012, 2014, 2016
- Sysadmin or dbcreator role for the Windows account used to run the installer or for the SQL account.
 - After installation, the account can be changed to be a member of the db_owner database role or a
 member of the db_datareader and db_datawriter database roles. The db_owner database role can
 perform all configuration and maintenance activities on the database. The db_datareader database
 role can run a SELECT statement against any table or view in the database. The db_datawriter
 database role can add, delete, or change data in all user tables.
- IMPORTANT: If the Login is a member of the db_datareader and db_datawriter database roles, Execute permissions (in database Properties) must be granted to the user.
- NOTE: If Job Accounting is installed, a SQL account named HPACJA is created. After installation, the HPACJA account has Public rights, so it cannot be used to create new databases, such as for enrollment or license databases. If you want to use the HPACJA account to create other databases, you must assign dbcreator rights to the account via SQL Management Studio.

2.3.1 Job Accounting database server requirements (remote)

For a remote SQL Server running SQL 2005 or later, the database must be created using a SQL login. The setup does not create a SQL login for HP AC Job Accounting, and a trusted connection will be used with named pipes. The Job Accounting Agent must be started with a domain account, to connect to the remote database.

2.4 Infrastructure requirements

Infrastructure requirements are as follows:

- Information to connect (for user authentication) to Active Directory or LDAP server that contains user details:
 - Multiple Domains
 - User codes/Badge IDs: If storing in AD, an AD attribute (indexed) with a service account that has write/ edit privileges to that attribute.
 - User Rights: If storing in AD, an AD attribute (indexed) with a service account that has write/edit privileges to that attribute.
- DNS server to resolve hostnames of the HP AC servers and hostnames of the printers and MFPs.
- Domain account to run solution services:
 - Has local admin rights on the HP AC server.
 - Has logon as a service rights.
 - Has a process to renew password prior to expiration time or set not to expire.
- SMTP gateway to send notifications and Job Accounting reports.
- Required ports open (see Appendix A: Network Ports Required)
- To create a queue for Job accounting, IPM, or Pull Printing, a Windows v3 driver must be used. Windows v4 print drivers are not supported.

2.5 Supported operating systems for Pull Printing

2.5.1 Pull Printing using a Shared Server Queue

Prerequisites

Shared pull print queue on the HP AC server (Enterprise or Express).

Operating System

- Microsoft Windows 7 (32 or 64 bit)
- Microsoft Windows 8 (32 or 64 bit)
- Microsoft Windows 8.1 (32 or 64 bit)
- Microsoft Windows 10 (32 or 64 bit)
- Macintosh 10.6.5 or newer
- Citrix
 - Print job must include the user's identification in order to associate the job to the Windows user
 - Auto-created shared pull print queues using the SPP Enterprise Port
- Non-Windows clients
 - Must be able to print to a Windows queue that contains a unique username that is not defaulting to a standard service account.

2.5.2 Pull Printing using a Local Queue (Enterprise only)

Operating System

- Microsoft Windows 7 (32 or 64 bit)
- Microsoft Windows 8 (32 or 64 bit)
- Microsoft Windows 8.1 (32 or 64 bit)
- Microsoft Windows 10 (32 or 64 bit)
- Mac OS 10.6.5 or newer
- Citrix
 - Auto-created Pull Print gueue with the Citrix UPD and LPR gueue
 - XenApp Server with local HP AC LPR queue

2.6 Client requirements for HP Access Control Print client

Operating System

- Microsoft Windows 7 (32- or 64-bit)
- Microsoft Windows 8 (32- or 64-bit)
- Microsoft Windows 8.1 (32- or 64-bit)
- Microsoft Windows 10 (32- or 64-bit)

Other

- To create a queue for Job accounting, IPM, or Pull Printing, a Windows v3 driver must be used. Windows v4
 print drivers are not supported.
- The HP AC Express Print client installs Microsoft .NET framework 2.0 on the client workstation.
- The HP AC Enterprise Print Client requires .NET Framework 4.6 on the client workstation.
- Client PC connected to the domain, and logged in as an authenticated user.

Permissions

- HP AC Enterprise: To create a local port and queue.
- HP AC Enterprise/Express: To connect to shared printer gueue on HP AC server.

2.7 Client requirements for card enrollment application

Operating system

- Windows 7, 8, 8.1, 10
- Microsoft .NET Framework 2.0

Other

- Users in Active Directory.
- Card reader connected to a client PC connected to the domain, having access to the HP AC server.

2.8 Card Masking utility requirements

Prerequisites

- Microsoft .NET Framework 4.0
- Windows 7, 8, 8.1, and 10
- Card reader connected to a PC connected to the domain, having access to the AD Authenticator server

2.9 Mobile device requirements

- Smart phone connected to the same network as the HP AC server.
- HP ePrint Enterprise app installed. App can be downloaded from:
 - iOS: http://itunes.apple.com
 - Windows Phone: http://social.zune.net
 - Android: https://market.android.com
 - Blackberry: http://www.blackberry.com/appworld

2.10 HP Printer and MFP requirements

- Device supported by HP AC with recommended, supported firmware versions.
 - DNS server configured
 - FutureSmart firmware version 3.7 or newer is highly recommended

- Static or dynamic IP configured (DHCP reservation preferred)
- SNMP v1/v2 enabled (default "public" is sufficient), or SNMP v3 enabled
- Security settings:
 - EWS password required for installation and configuration
 - Remote firmware updates enabled
 - File Access and PJL Disk Access enabled
 - o PJL password not set
 - o Information tab requires administration access needs to be disabled.
 - PJL Device Access Commands enabled.
 - o 9100 Printing, WS-Discovery, OXPd Services, and Web Services print must be enabled.
 - o Installation of legacy packages signed with SHA-1 hashing algorithm allowed
 - File System Password not set
 - Command Load and Execute enabled (non-FutureSmart devices)
 - IPPS enabled if requiring encryption between the HP AC server and the device
 - o FTP (for non-FutureSmart HP devices) must be enabled to push tracking files from the devices
 - Required if disabling device ping in the HP AC configuration utility which forces telnet communications only

2.11 Server components required

The HP AC installation detects what components are required on your system and then automatically installs the required components. The following table lists the required components for HP AC, for each bundle.

	HP AC Express	HP AC Enterprise
Crystal Reports for .Net Framework 2.0	✓	✓
Internet Information Services (IIS)	✓	✓
Microsoft Visual C++ 2005 Redistributable	✓	✓
Microsoft SQL Server Express 2014	✓	✓
Microsoft SQL Server Compact Edition 3.5 SP2	✓	/
Windows Installer 4.5	✓	✓
Microsoft .Net Framework 4.0	✓	✓
Microsoft ADO.Net Entity Framework 4.1	✓	✓
Microsoft Visual C++2008 Redistributable	✓	✓
Microsoft Visual C++ 2010 x86 Redistributable	✓	✓
Apache CouchDB 1.2.0	✓	✓
GneWin32: OpenSSL-0.9.8h-1	✓	✓
Microsoft SQL Server Compact 4.0 SP1	✓	✓

	HP AC Express	HP AC Enterprise
HP OPS	✓	✓
Microsoft .Net Framework 2.0	✓	✓
Microsoft .Net Framework 3.5	✓	✓
Microsoft .Net Framework 4.6	✓	✓



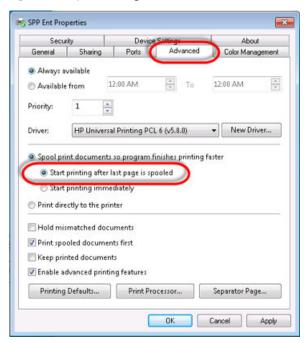
NOTE: If you download the Microsoft .Net Framework 4.6 offline installer, you must have the latest Windows updates installed on the server. Specifically, Windows updates KB3045562 and KB3045563 are required for Microsoft .Net Framework 4.6.

2.11.1 IPM requirements

The installation prerequisites for HP Access Control (HP AC) Intelligent Print Management are:

- If IPM is installed on a 64-bit OS, make sure the 64-bit version of Microsoft Office is installed. This is required because Microsoft Access Database Engine x64, which is installed with IPM, works only with the 64-bit version of Microsoft Office.
- .NET Framework 2.0
- Internet Information Services (IIS) with ASP.NET
- A logon with administrative rights
- The print driver set to **Start printing after last page is spooled**

Figure 2-1 Spool settings



- Internet Information Services (IIS) with ASP.NET
 - Verify that IIS is installed correctly by performing the following procedure:

- Open your Internet browser and type http://localhost in the Address field.
- The IIS home screen will display.



NOTE: If you are using a proxy server, you may be unable to see this page even if IIS is installed properly. To bypass the proxy server in the web browser select Tools > Internet Options and select the **Connections** tab. Select LAN Settings and check the box to Use a proxy server for your LAN. Check Bypass proxy server for local Addresses and click OK.

If you are still unable to see the page, it may be necessary to restore the browser or default settings in Internet Options. Open a web browser and select Tools > Internet options. Select the Security tab and click Default Level. Select the **Advanced** tab and click **Restore Defaults**. Click **OK**.

2.12 Supported HP devices

NOTE: For a list of supported multi-vendor devices, please refer to the LRS MFPsecure document.

Table 2-1 Supported HP FutureSmart devices

HP Color LaserJet Enterprise CM4540 MFP series	HP LaserJet Enterprise Flow MFP M525 series
HP Color LaserJet Enterprise CP5520 Printer series	HP LaserJet Enterprise Color Flow MFP M575
HP LaserJet Enterprise 500 Color Printer M551 series	HP LaserJet Enterprise M4555 MFP series
HP LaserJet Enterprise 500 Color MFP M575	HP LaserJet Enterprise MFP M725 series
HP LaserJet Enterprise 500 MFP M525 series	HP LaserJet Enterprise MFP M830 series
HP LaserJet Enterprise 600 Printer M601 / M602 / M603 series	HP LaserJet Enterprise M806 Printer series
HP LaserJet Enterprise 700 Color MFP M775 series	HP Color LaserJet Enterprise Flow MFP M880 series
HP LaserJet Enterprise 700 Printer M712 series	HP Color LaserJet Enterpriser M855 Printer series
HP Color LaserJet Enterprise M750 Printer series	HP Color LaserJet Enterprise MFP M680 series
HP Color LaserJet Enterprise M651 series	HP Officejet Enterprise Color MFP X585 series
HP Officejet Enterprise Color X555 series	HP LaserJet Enterprise MFP M630 series
HP Color LaserJet Enterprise M552/M553 series	HP LaserJet Enterprise M604, M605, M606 series
HP Digital Sender Flow 8500 *	HP LaserJet Enterprise M506 series**
HP LaserJet Enterprise MFP M527 series**	HP Color LaserJet Enterprise MFP M577 series
HP PageWide Enterprise Color 556	HP PageWide Enterprise Color MFP 586

^{*} The HP Digital Sender Flow 8500 requires the HPAC-SPPE-Agent-FutureSmart-10.bdl file

Table 2-2 Supported HP non-FutureSmart devices

HP Color LaserJet CM3530 MFP series	HP LaserJet 5200 series*
HP Color LaserJet CM4730 MFP series	HP LaserJet 9050 series
HP Color LaserJet CM6030/CM6040 MFP series	HP LaserJet M3035 MFP series
HP Color LaserJet CP3525 Printer	HP LaserJet M4345 MFP series

^{**} The M506 and M527 devices require an HP internal USB port (F2A87A)

Table 2-2 Supported HP non-FutureSmart devices (continued)

HP Color LaserJet Enterprise CP4525 Printer series	HP LaserJet M5035 MFP series
HP Color LaserJet CP6015 Printer series	HP LaserJet M9040/M9050 MFP series
HP LaserJet Enterprise P3015 Printer	HP LaserJet P4015 Printer series

^{*} The LaserJet 5200 must have 128MB memory to load the HPAC-SPPE-Agent

Table 2-3 Supported HP S900 series devices

HP Color MFP S951dn	HP Color MFP S962dn
HP Color MFP S956dn	HP Color MFP S970dn
HP MFP S965dn	HP MFP S975dn

Table 2-4 Supported HP Officejet Pro devices

HP Officejet Pro 251 Printer	HP Officejet Pro 276 MFP
HP Officejet Pro X476/X576 color MFP series	HP Officejet Pro X551 Printer

Table 2-5 Supported HP PageWide Pro devices*

HP PageWide Pro 477	HP PageWide Pro 577z
HP PageWide Pro 577	HP PageWide Pro 522
HP PageWide Managed P57750	HP PageWide Managed P52250

^{*} With a minimum firmware version of 1629F



NOTE: Please refer to the product release notes for the most up to date list of supported devices.

3 Installation

This chapter provides steps for the following:

- Installing HP AC Express
- Installing HP AC Enterprise
- Upgrading HP AC
- Installing HP OPS (required for HP OfficeJet Pro Printers)

3.1 Installing HP AC Express

Complete the following steps to install HP Access Control (HP AC) Express. During the installation, you may be prompted to restart. The installation will automatically resume after reboot.

- 1. Launch the installer as an administrator by right-clicking the HPAC.exe file to start the HP AC installer. Select the language for the InstallShield Wizard, and then click **OK**.
- NOTE: The regional settings of the server will determine the language displayed in the HP AC configuration utility.



2. Click Install to begin the installation of the required components. This may take several minutes.

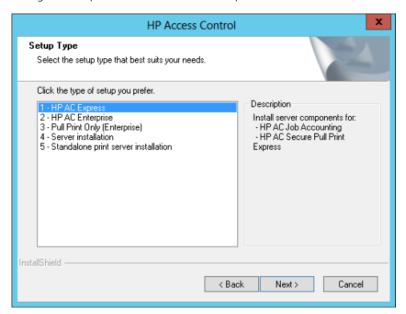
3. Read the End User License Agreement, and click **Yes** to accept the terms.



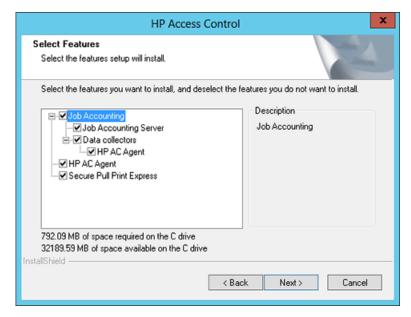
4. Click **Browse** to select a folder for the installation, and then click **Next**.



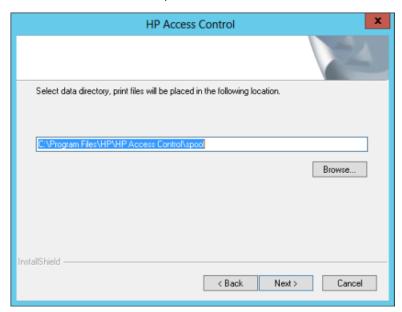
5. On the Setup Type page, select **HP AC Express**. A description of the setup type displays on the right side, listing the components associated with Express. Click **Next**.



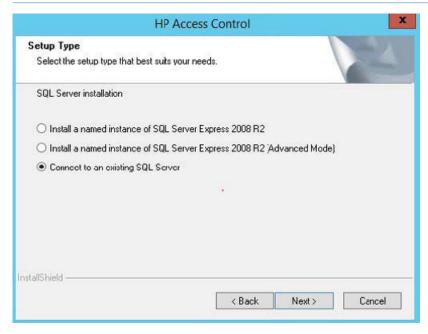
6. Leave the default options checked and select **Next**.



7. On the data directory screen, select the folder location to store pull print jobs. The default folder is **Program** Files\HP\HP Access Control\spool. Click Next.



- 8. Choose the SQL setup required for your environment, and click **Next**.
- NOTE: This prompts only if Job Accounting was selected to be installed, which is bundled with HP AC Express.

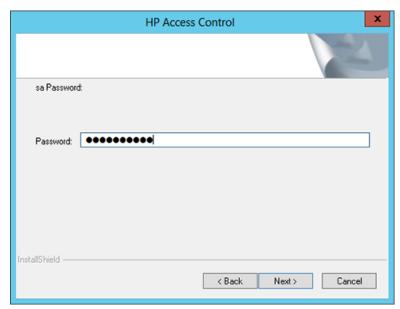


SQL Server installation — Database options:

• Install a named Instance of SQL Server Express 2008 R2:

Automatically installs SQL Express 2008 R2 SP1 on the local server and will name it HPACEXPRESS. A user HPACJA with password HPACJA will also be created. On the sa password screen, enter a password for the SA account in SQL. The password must meet the Microsoft SQL Server Strong Password requirements:

- Does not contain all or part of the user's account name.
- Is more than eight characters in length.
- Contains characters from at least three of the following categories:
 - English uppercase characters (A through Z)
 - English lowercase characters (a through z)
 - o Base 10 digits (0 through 9)
 - Nonalphabetic characters (for example: !, \$, #, %)



For more information, please see Microsoft SQL Server Strong Password Guidelines (http://msdn2.microsoft.com/en-us/library/ms144284.aspx).

• Install a named instance of SQL Server Express 2008 R2 (Advanced Mode):

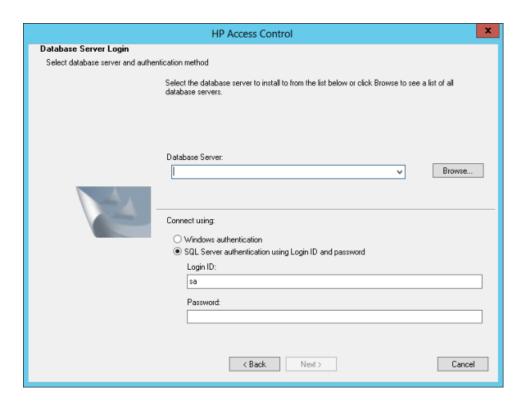
Installs SQL Express 2008 R2 SP1 and stores the SQL server data in a different location. When prompted, enter the location to store the data. SQL credentials with **sysadmin** rights are required. The user running the installer should be added to the SQL instance permissions as **sysadmin** during the installation.

• Connect to an existing SQL Server:

Allows you to browse to an existing SQL server. SQL credentials with **sysadmin** rights are required. The current user launching the installer should be added to the SQL instance permissions as **sysadmin** during the installation.

If connecting to an existing SQL server,

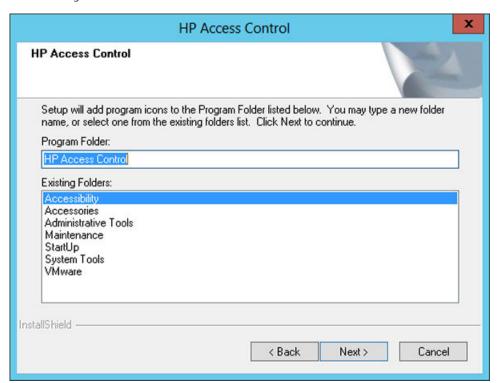
a. Click **Browse** to select the Database server on the network.



b. Select a database server from the list and click **OK**. Choose the connection method. — Windows authentication or SQL Server authentication.



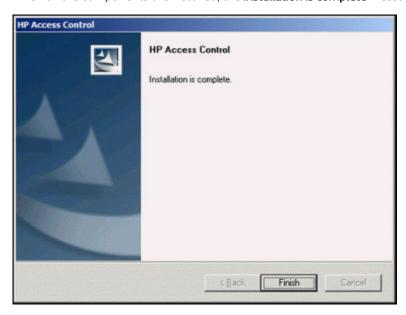
9. Select a Program Folder and click **Next**.



10. Click Next to begin the installation of HP AC. This may take several minutes.



11. When all the components are installed, the **Installation is complete** message will display. Click **Finish**.



- 12. To start HP AC after setup is complete, go to Start > All Programs > HP Access Control, and right-click **Configuration Utility**, then select **Run as administrator**.
- NOTE: It is recommended to set the HP AC configuration utility shortcut to always run as administrator.

3.2 Installing HP AC Enterprise

Complete the following steps to install HP Access Control (HP AC) Secure Pull Print Enterprise. During the installation you may be prompted to restart. The installation will automatically resume after reboot.

- Launch the installer as an administrator by right-clicking the HPAC.exe file. Select the language for InstallShield Wizard, and then click OK.
- NOTE: The regional settings of the server will determine the language displayed in the HP AC configuration utility.



2. Click Install to begin the installation of the required components. This may take several minutes.

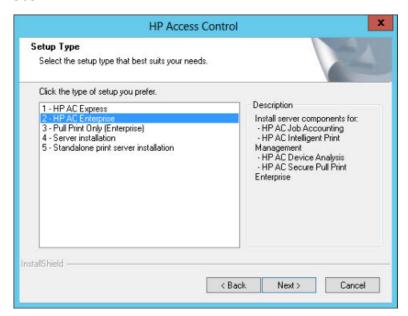
3. Read the End User License Agreement and click **Yes** to accept the terms.



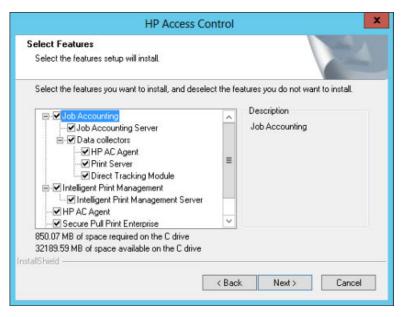
Click Browse to select a folder for the installation, and then click Next.



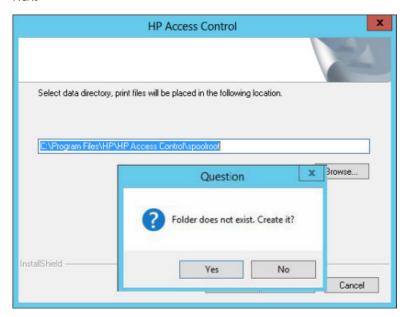
On the Setup Type, select HP AC Enterprise. A description of the components installed displays on the right side.



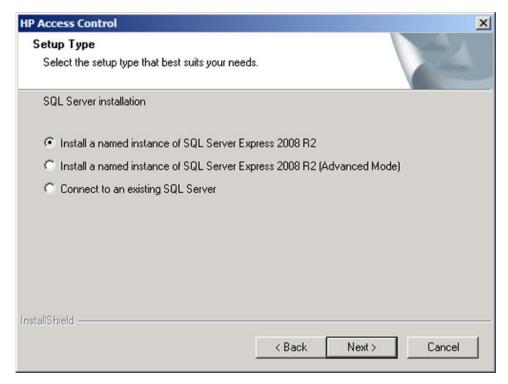
6. Leave the default options checked. The installation features are pre-selected with check marks.



7. On the data directory screen, select the folder location to store pull print jobs. The default folder is \Program Files\HP\HP Access Control\spoolroot. The installer will prompt you to create the directory. Click **Next**.



8. A SQL server is required for Job Accounting. For SQL Server installation, choose the SQL setup required for your environment and click **Next**.



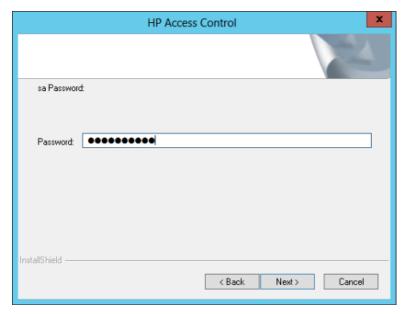
SQL Server installation — Database options

• Install a Named Instance of SQL Server Express 2008 R2: This will automatically install SQL Express 2008 R2 SP1 on the local server and name it HPACEXPRESS. A user HPACJA with password HPACJA is also created.

On the sa password screen, enter a password for the SA account in SQL. The password must meet the Microsoft SQL Server Strong Password requirements:

- Does not contain all or part of the user's account name
- Is more than eight characters in length
- Contains characters from at least three of the following categories:
 - English uppercase characters (A through Z)
 - English lowercase characters (a through z)
 - o Base 10 digits (0 through 9)
 - Nonalphabetic characters (for example: !, \$, #, %)

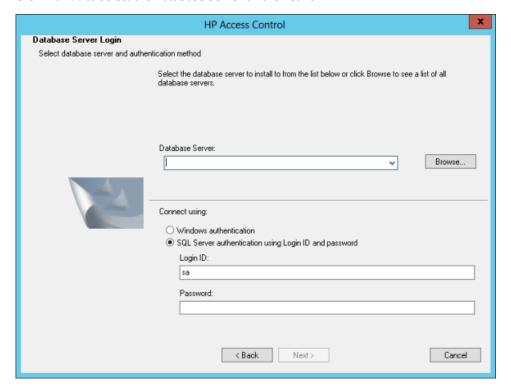
For more information, please see Microsoft SQL Server Strong Password Guidelines (http://msdn2.microsoft.com/en-us/library/ms144284.aspx).



• Install a Named instance of SQL Server Express (Advanced Mode): This will install SQL Express 2008 R2 SP1 and store the SQL server data in a different location. When prompted, enter the location to store the data. SQL credentials with sysadmin rights are required. The user running the installer should be added to the SQL instance permissions as sysadmin during the installation.



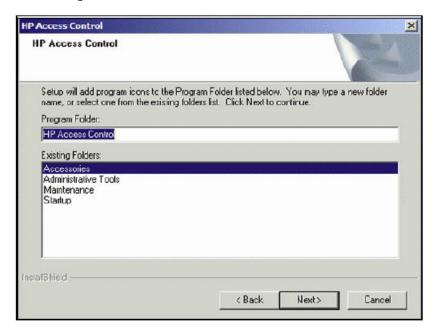
- Connect to an existing SQL Server: This will allow you to browse to an existing SQL server. SQL credentials with sysadmin rights are required, and the current user launching the installer should be added to the SQL instance permissions as sysadmin during the installation.
- Click Browse to select the Database Server on the network.



10. Select a database server from the list and click **OK**. Choose the connection method — Windows authentication or SQL Server.



11. Select a Program Folder and click **Next**.



12. Click **Next** to begin the installation of HP Access Control.



13. When all the components are installed, the Installation is complete message will display. Click Finish.



14. To start HP Access Control after setup is complete, go to Start > All Programs > HP Access Control, and right-click **Configuration Utility** and select **Run as Administrator**.

NOTE: It is recommended to set the HP AC Configuration utility shortcut to always run as administrator.

3.3 Multi-server installation

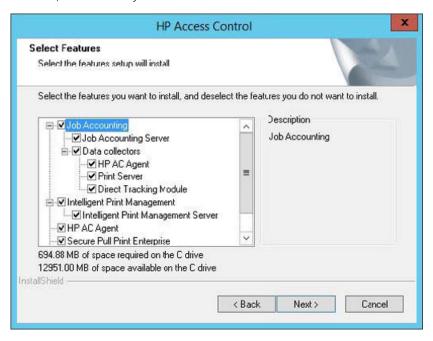
For environments that require the use of multiple servers, individual HP AC components can be installed on different servers. For example, one server can be dedicated for authentication and pull printing, while another server can be dedicated for IPM rules-based printing. On the server, select **Server Installation** during the HP AC installation process, and then select the individual components you want to install on that particular server.

3.4 Modify or Remove HP Access Control

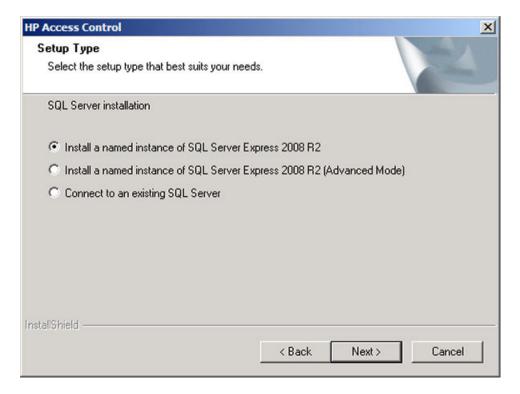
3.4.1 Modify an HP AC installation

Complete the following steps to modify features of an existing HP AC installation:

- 1. Launch the installer by right-clicking **HPAC.exe** and run as administrator. From the Modify/Remove page, click **Modify** and then click **Next**. The **Select Features** page displays.
- 2. Check marks are displayed next to features that are already installed. Unselect the features you wish to uninstall, and select any additional to add. Click **Next**.



If you select to install Job Accounting, the following page displays to allow you to install SQL Server Express 2008 R2 or to connect to an existing SQL Server. For more information, follow the instructions in <u>Section 3.1, Installing HP AC Express</u> or <u>Section 3.2, Installing HP AC Express</u>.



3.4.2 Removing HP Access Control (HP AC)

Selecting **Remove** from the Modify/Remove page allows you to uninstall HP AC and all installed features. To do this, complete the following steps.

Prerequisites

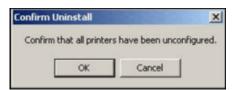
• Ensure the correct uninstallation PRN file is displayed on the Settings tile > Agent tab.

Complete the following steps:

- 1. Launch the installer by right-clicking **HPAC.exe** and run as administrator. From the Modify/Remove page, click **Remove** and then click **Next**.
- 2. The following confirmation displays. Click **Yes** to confirm uninstalling of HP AC.

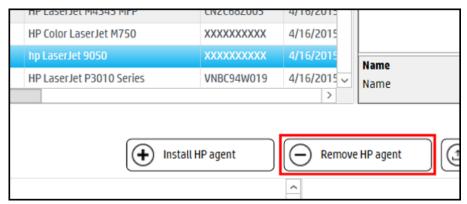


3. If all printers have been unconfigured, click **OK** to confirm.

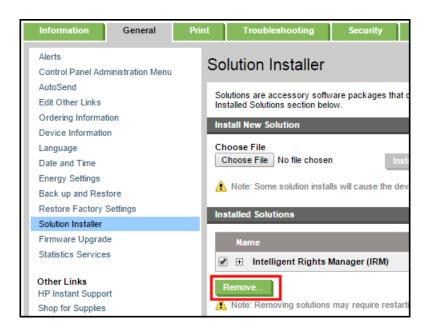


4. If all printers have NOT been unconfigured, click **Cancel**, go to the HP AC Configuration Utility and unconfigure all configured printers.

For non-FutureSmart devices: Go to the HP AC Configuration utility > Devices, then select the device and click **Remove HP Agent**.



For FutureSmart devices: Either perform a partial clean to remove all non-firmware data stored on the device (refer to the device documentation for instructions on performing a partial clean) or remove the agent via the EWS > General > Solution Installer page.



5. When the database question page displays, click **Yes** to keep the database or **No** to delete the database.

6. When the uninstall completes, you may be asked to restart the server. Select **Yes** if you want to restart the server. Click **Finish**.



3.5 Upgrading HP Access Control

MOTE:

- Before upgrading your HP Access Control server please contact HP to ensure your version can be upgraded.
 It is highly recommended to receive technical consultation prior to upgrade.
- For servers with Card ID Masking enabled, it is highly recommended to back up the DataDecodeDefaults.xml files prior to upgrading. The AD-Authenticator DataDecodeDefaults.xml file is located in the \HP Access Control\AD-Authenticator\ folder. The XT device DataDecodeDefaults.xml file is located in the \HP Access Control\DPR\ folder.

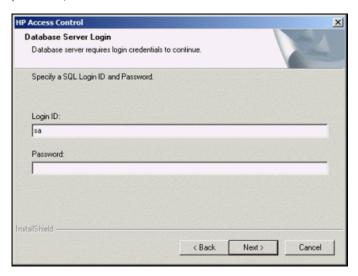
An upgrade of HP AC upgrades all HP Access Control (HP AC) components currently installed on the server. During an upgrade, all HP AC processes are stopped. Move the latest HP AC installation file to the server where the older version of HP AC is installed. Complete the following steps:

1. Right-click the HP AC installation file and select **Run as administrator**.

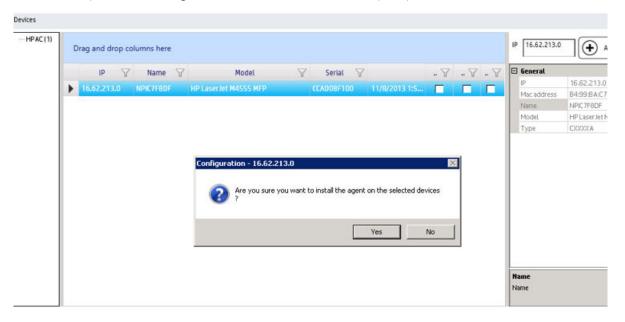


2. Click **Next** to begin the upgrade.

 If the HP AC server is connected to a SQL database on a different server using SQL credentials, you may be prompted to enter your SQL credentials to restore the connection. Enter the correct SQL login and password, then click Next.

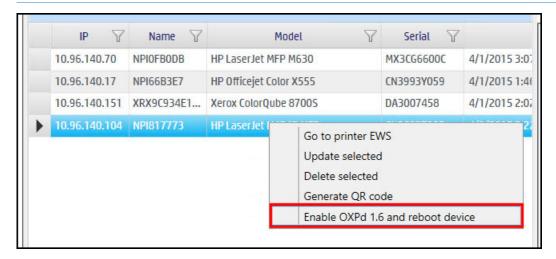


- 4. Click **Finish**. After upgrading the HP AC configuration tool, make sure to upgrade the agent files on devices. Upgrading of a new agent version can be installed over an older agent version.
- 5. In the HP AC configuration utility click **Devices**.
- 6. Select the devices you want to update.
- 7. Click **Install** to push the HP AC agent to the device. Choose **Yes** when prompted.

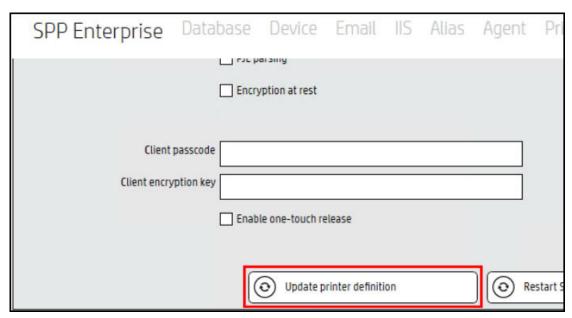


NOTE:

- FutureSmart devices will display Receiving Upgrade. Non—FutureSmart devices will display Disk
 Operation Failed. This is expected behavior.
- Installation will fail if device EWS password is not set.
- After upgrading a FutureSmart device, make sure to reapply the Sign-In Method in the device EWS > Access Control page.
- After upgrading a non-FutureSmart device, right-click the device and click **Update selected** to reapply authentication.
- For non-FutureSmart devices, in order to use pull printing, OXPd 1.6 must be enabled so that the HP AC button will display on the front panel. Right-click the device and choose **Enable OXPd 1.6**.



- 8. Wait for the device to reboot.
- 9. For HP AC Enterprise, go to the HP AC admin console > Settings > SPP Enterprise and click **Update printer definition**.

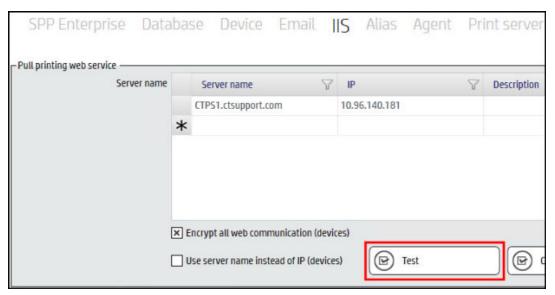


10. For both HP AC Secure Pull Print Enterprise and HP AC Secure Pull Print Express, it is highly recommended that the following settings be re-applied in the HP AC admin console:

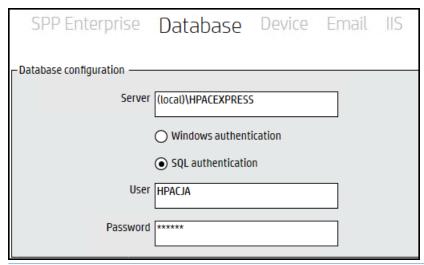
In the HP AC configuration utility, go to the Settings tile. Click the Device tab, and enter the Administrator password (in the Device section). Click Apply.



b. On the Settings tile, go to the IIS tab. Under each section, click Test to test the connection and click Apply.



If Job Accounting and IPM were previously installed, go to Settings tab > Database tab. In the Database configuration section, click **Test** to test the connection to the Job Accounting database and click **Apply**.

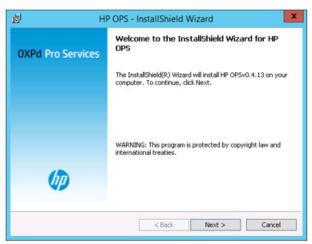


- NOTE: When using Windows authentication to connect to the Job Accounting database, ensure that for the Agent Configuration section the LocalSystem account is unchecked, and the correct Windows Domain\User and Password credentials are entered. This is required for access to the database. Select to Restart services after update and click Test and Apply.
 - If Job Accounting was installed, go to the Settings tile. Go to IIS tab. In the Push mode section, click Test and

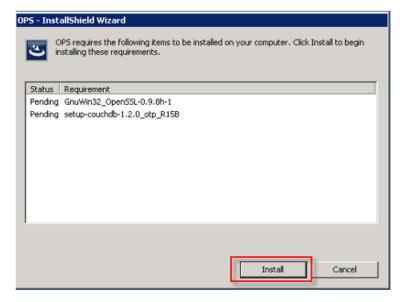


3.6 Installing OXPd Professional Services (OPS) for OfficeJet Pro devices

OXPd Professional Services (OPS) is required for OfficeJet Pro devices to communicate with the HP AC server. Click Install.



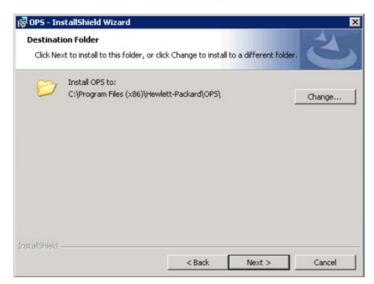
- NOTE: OPS (OXPd Professional Services) is a web-based service required for OfficeJet Pro devices. OPS hosts all printer configurations for OfficeJet Pro devices.
- 2. If required, you will be prompted for OPS pre-requisites. Click Install.



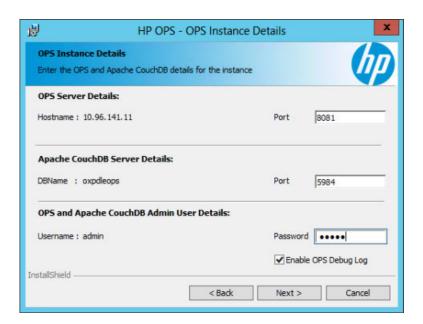
Read and accept the **End User License Agreement**. Click **Next**.



Choose the default installation location, and click Next.



- On the OPS Instance Details screen,
 - For **OPS Details**. The Port field will automatically be populated with the default port. This can, however, be changed by entering a new port.
 - For OPS and Apache CouchDB Admin User Details, the default DBName and Port information will automatically be populated. Enter a **Password** to protect the OPS database.
 - Click Next.



6. Once the OPS server is installed, ensure Launch OPS is checked. This will start the OPS service.



Click **Finish**. A pop-up will confirm the OPS Server is listening at https://<HPACServer>:8081.



NOTE:

- On a 32-bit server, OPS does not start automatically when Launch HP OPS is selected. You must configure the OPS service manually to start with a domain account through Administrative Tools > Services.
- If OPS installation fails, you can launch it later from \Program Files\HP\HP Access Control\Misc \OPSsetup.
- Make sure the port displayed in the Port field is open on the firewall. The default port that the OPS server uses to communicate with HP OfficeJet devices is port 8081. This port can be changed.
- If the password is changed after installation, OPS will need to be reinstalled.
- If the OPS Server is listening pop-up does not launch, the OPS service can be started manually. On the server, go to Administrative Tools > Services, and Start the HP OPS service.

4 HP Access Control Configuration utility

4.1 Overview

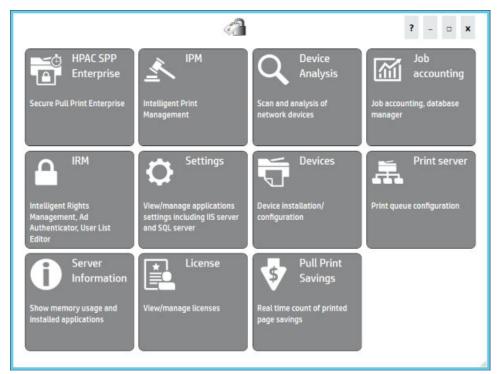
The following chapters explain how to use the HP Access Control (HP AC) configuration tool and introduce you to the process of configuring HP Access Control (HP AC) solutions on print devices.

To open the HP AC Configuration tool, go to **Start** > **All Programs** > **HP Access Control**, then right-click **HP AC Configuration utility** and choose to Run as Administrator.

The HP AC Configuration tool consists of components organized as tiles on the home screen.

NOTE: If an administrator is managing access to the HP AC Configuration utility then not all tiles may be shown, and access to some features and functionality may be view only. Please refer to Managing access to the Configuration Utility (see Section 9.1, Managing access to the Admin console). Tiles showing may vary depending on what components/bundle has been installed on the server.

Figure 4-1 Home screen



- IMPORTANT: Tiles and tabs highlighted orange indicate items that are recommended to be completed. It is highly recommended to complete all the orange items before using HP AC. See Section 4.2, Configuring general settings.
- NOTE: The IRM tile does not have fields highlighted orange.

4.1.1 Navigation and Help

Click a tile from the HP Access Control (HP AC) home screen to use the component. Return to the home screen at any time by clicking the back button in the top left corner, or by clicking on the HP Access Control icon.







4.1.1.1 Menus and Tabs

Within **Tiles**, the application has Menu items and Tabs for easier navigation.

Menus

Menus will appear at the top of the screen, in the gray bar.



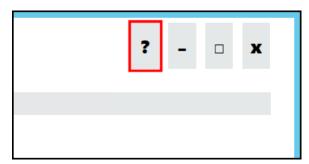
Tabs

Tabs appear at the top, beneath the menu bar. You can click on the word to navigate to that tab.



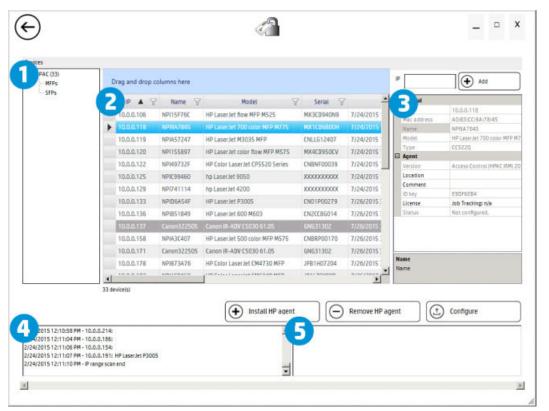
4.1.1.2 Help menu

To view the HP AC Administrator manuals, click on the ? to open the Help document. HP AC documentation can be accessed from two locations: the HP AC documentation web site or the documentation folder on the server.



4.1.1.3 Device tile

The Devices tile allows you to manage devices in your printing environment. Organize devices into groups and see what is installed on each printer. From the Devices tile, you can easily install and configure printers for tracking, quota, pull printing, authentication, or rights managements.



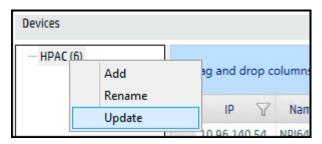
- Device groups: In the device groups section you can create groups to better organize your printer environment. Right-click a group name to Add, Delete, or Rename a group.
- 2. **Device list**: The device list section displays device information, such as the device model, IP address and configuration status. When a component is configured on a device, an X displays under the Pull Printing, Tracking, Authentication, Authorization, Quota or Trap column, depending on the component that is enabled.
- 3. Device details: The device details section allows you to view more information about a device and the solution installed. Click the License field to view a drop-down list of components that are enabled and licensed. The Location field displays location information from a FutureSmart EWS. For a non-FutureSmart device or XT device, type information in the Location and Comment fields, hit Enter, then reconfigure the device. The device details may vary, depending on what is installed on the device.
- 4. **Status bar**: The status bar allows you to view error messages and the status of scans or configurations. Right-click in the status bar and click Clear to delete the log information.
- 5. **Tracking bar**: The tracking bar displays data from devices configured for Confirmation Trap or from FutureSmart devices configured for Tracking.

Device rows in the device list may be highlighted, indicating the following:

- Yellow The Agent file is installed but not configured for tracking.
- Grey The device is an XT device. See Section 5.7.6, XT devices and Section 6.5.5, XT devices.
- Red The solution is installed, but not licensed. On HP non-FutureSmart devices, red also indicates the solution is installed, but not configured correctly to push tracking data to the Job Accounting server.

NOTE: When importing HP FutureSmart devices from a CSV file or manually adding HP FutureSmart devices, device information is retrieved using OXPd. This allows for SNMP V1 or V2 to be disabled on devices, if needed.

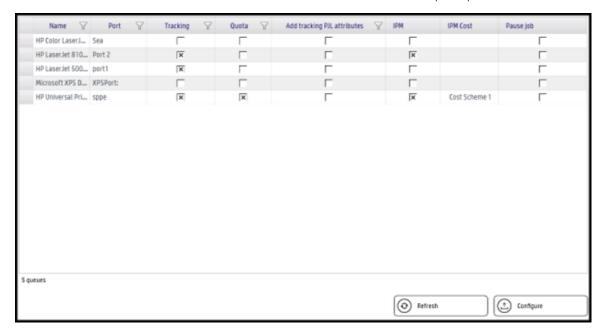
NOTE: To update the device list, right-click the device group and click **Update**. This is recommended in case another user using the web console modified the device list.



4.1.1.4 Print server tile

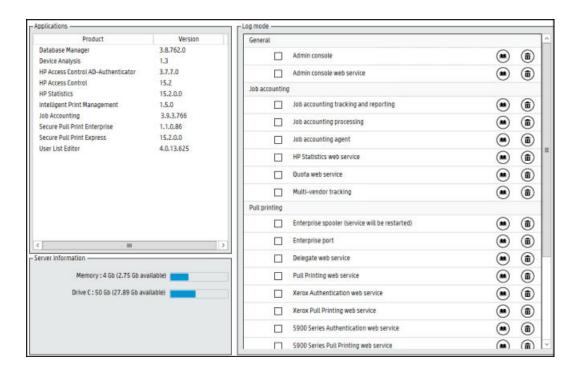
The **Print server** tile displays all print queues installed on the server, allowing you to configure print queues for tracking, quota or IPM. The columns may vary, depending on if Job Accounting, IPM or both are installed.

The check boxes under the columns indicate what features are enabled for the print queue.



4.1.1.5 Server Information tile

The **Server Information** tile displays valuable information to help you manage HP AC on your server. This tile displays information about the server and the ability to enable and view the HP AC logs. This makes it easy to check if your HP AC components are up to date, and view valuable information about your server, such as hard drive space available. Click **Help** > **About** to view copyright information about HP Access Control (HP AC). See Section 15.3, Server information.



4.2 Configuring general settings

Prerequisites

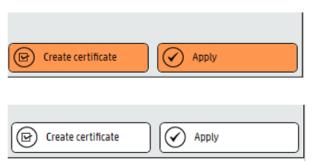
- HP AC Agent and HP AC Secure Pull Print Express/Enterprise must be installed on the server.
- HP AC Job Accounting server installed on a local or remote server on your network.

MOTE:

- For security reasons, Windows authentication passwords (such as those in the License tile and Database tile) do not display after the HP AC configuration utility is closed and reopened. The password is saved but does not display.
- This must be performed prior to configuring devices.

Complete the following steps:

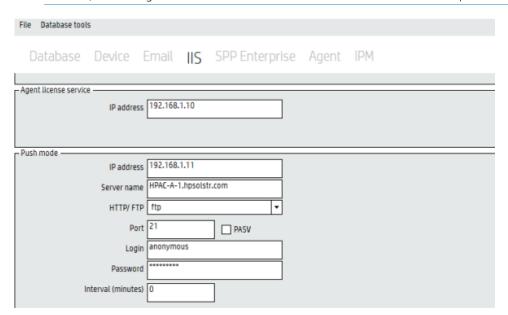
After installation the HP Access Control configuration utility will highlight in orange the general
configuration options that must be configured prior to configuring a device for use with HP Access Control.
The Devices tile and Settings tile (including the SPP Enterprise, Database, Device, IIS, and License settings)
are highlighted orange. After the configuration changes have been made the highlighted areas will return
to normal color indicating the change has been made once you navigate to a new tab or tile.



2. To send tracking data from devices to the Job Accounting server (if Job Accounting has been installed), the transfer protocol must be configured. This is used by non-FutureSmart devices to upload job Accounting tracking files. It is also used in a multi-server environment to point the Job Accounting data collectors to the main Job Accounting server.

To configure the server for tracking data, complete the following steps:

- **a.** Go to the Setting tile > IIS tab.
- **b.** Under Push mode, select the protocol to transfer the data.
 - Hypertext Transfer Protocol (HTTP) connections are usually terminated after a particular request has been completed. If HTTP is selected, Windows credentials are required in the Login and Password fields. Also, if IIS 7 or newer is installed on the server, Basic Authentication needs to be enabled. Devices require Basic Authentication to pass data via HTTP when IPA sends tracking data to the Job Accounting Print Server. The default Port is 80.
 - File Transfer Protocol (FTP) is best for uploading data to an internal database server. If FTP is selected, any credentials can be used in the Login and Password fields. By default, both Login and Password are "Anonymous." The default Port is 21. Select the PASV checkbox to enable passive mode FTP if you want to allow data to transfer more easily through firewalls.
- **c.** Set the Interval (minutes) to specify how often tracking data is pushed from the devices to the Job Accounting server.
- **d.** Click **Test** and **Apply**.
 - NOTE: When accessing the Push Mode settings from a Job Accounting server, the Push Mode settings apply to HP non-FutureSmart devices and is used to push IPA tracking files from the device to the server. HP non-FutureSmart devices support FTP and HTTP protocols only, so if HTTPS is selected, the settings will revert to HTTP when the HP AC admin console is reopened.

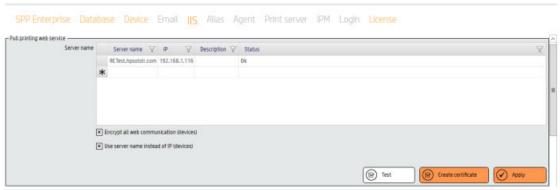


- 3. The Web service configuration is used for the following:
 - For devices to communicate with the Job Accounting website to determine quotas for copies and digital send jobs.
 - To send IPM notifications to client desktops.
 - For users to access pull print jobs from a device, mobile device, or web page.

- For communication between the server and the IRM license Web service.
- For central management of print devices. When multiple servers are entered in the **Web service** settings, and when devices are configured in the Devices tile, a drop-down list displays in the Configure window allowing you to select the server you want to configure the device to. From one central server you can configure print devices to be managed by a different server.

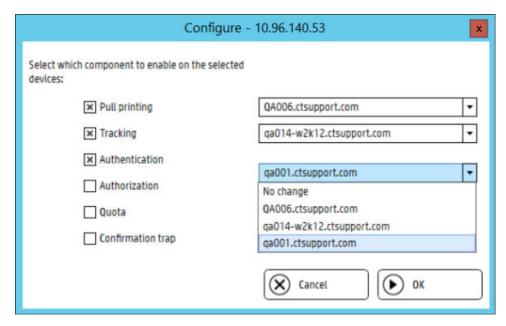
To do this, complete the following steps:

- **a.** In the HP AC configuration utility, go to the **Settings** tile.
- **b.** Click the **IIS** tab. Under the **Web service** section you will see the **Server name** and **IP** address of the server containing the Quota, IPM, and Pull Printing web services.
- **c.** To add additional servers, double-click in the fields and enter the Fully Qualified Domain Name (FQDN) of the additional server(s) and the IP addresses. Hit the **Enter** key and click **Test**. The **Status** column should display **OK**.



NOTE:

- When configuring HP AC there may be a requirement to set the device to look at multiple IIS servers. When multiple IIS servers are in the Settings > IIS area, then the option to configure for a different IIS server will appear for the Pull Printing, Tracking, and Authentication/Authorization options in the Devices > Configuration window. The Authentication and Authorization options must be configured to the same server.
- When using multiple IIS servers, ensure that the server certificates are configured properly. Refer to Section 4.2.4.3, Creating certificates in a multi-server installation.



- **d.** By default, **Encrypt all web communication (devices)** is enabled. This will enable HTTPS protocol for communication between the devices and the servers. For some web communications HTTPs is already enforced and not configurable.
- If using a certificate that was issued to a server name then you must check Use server name instead
 of IP (devices).
- NOTE: If using server name, ensure the device's DNS entry is properly configured.

The status should return as **OK**.

```
7/31/2015 3:29:30 PM - HPAC-A-1.hpsolstr.com: IIS service ok
7/31/2015 3:29:31 PM - HPAC-A-1.hpsolstr.com: Pull printing web service ok
7/31/2015 3:29:31 PM - HPAC-A-1.hpsolstr.com: Statistics web service 0k
7/31/2015 3:29:35 PM - Pull printing web service: Settings saved
7/31/2015 3:29:35 PM - HP AC Agent: Settings saved
```

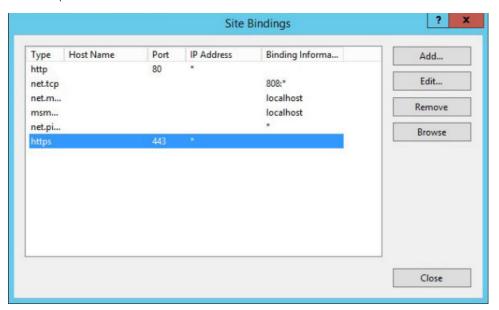
- 4. Certificates are required for security to confirm the identity of a web server before sensitive data is transferred. See <u>Section 4.2.4, Configuring server certificates</u>. To generate self-signed v3 certificates, complete the following steps:
 - a. Click on the Settings tile > IIS tab.
 - b. Click Create Certificate. Two certificates are created for the server: one based on the server name and one based on the IP address. The certificates are created in the \Program Files\HP\HP Access Control folder. The certificates are also created in \Program Files\HP\HP Access Control\Open SSL and are used for communication between multiple HP AC servers. A message will appear in the messages pane showing successful creation:

```
7/31/2015 3:33:24 PM - Certificate created for : HPAC-A-1.hpsolstr.com
7/31/2015 3:33:34 PM - Certificate installed
7/31/2015 3:33:34 PM - Pull printing web service: Settings saved
7/31/2015 3:33:34 PM - HP AC Agent: Settings saved
```

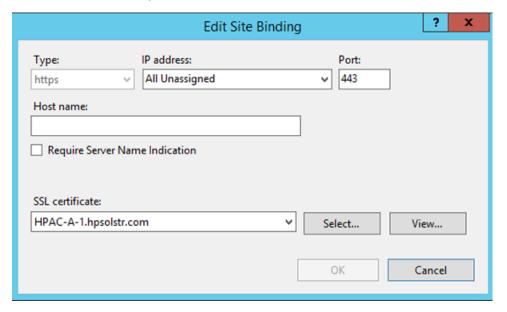
c. Click Apply. This will automatically bind the certificate to the default web site.

To view assigned certificates in IIS:

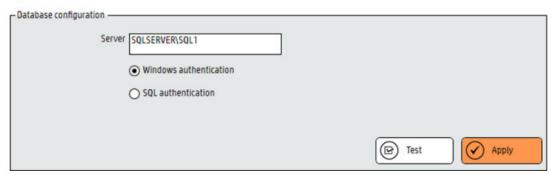
- **a.** Go to IIS Manager.
- **b.** Select https and click **Edit**



c. In the SSL certificate field you will see the certificate.



Under Database configuration click Test and Apply to verify and test the connection to the Job Accounting database.



A message will appear in the messages pane showing successful creation.

```
9/10/2015 2:58:16 PM - Database connection updated successfully
9/10/2015 2:58:16 PM - Agent configuration updated successfully
9/10/2015 2:58:16 PM - Quota web service configuration updated successfully
9/10/2015 2:58:16 PM - Report server configuration updated successfully
9/10/2015 2:58:16 PM - Report manager configuration updated successfully
9/10/2015 2:58:16 PM - Database settings saved
```

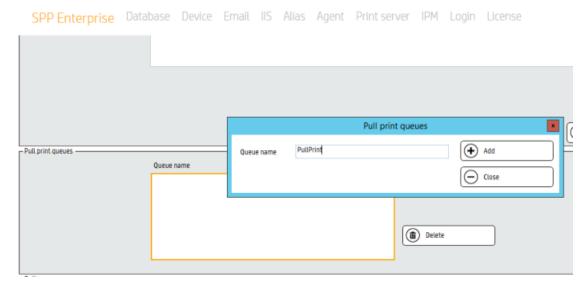
6. In the Device menu enter the admin password for the device.



- NOTE: All devices must be configured with this password before configuration. Please refer to product documentation on how to set the Embedded Web Server password on the device.
- 7. Go to the License tab and choose the mode of licensing. Refer to Section 4.2.7, Configuring the server for licensing for more information. To use the default licensing mode click **Apply**.



8. Go to the SPP Enterprise tab and under Pull Print queues click **Add** to add a pull print queue. Refer to <u>Pull Printing</u> for further configuration options for pull printing.



9. Go to the Devices tile to add a device by entering in the IP address of the device and click **Add**. For more details and options see Section 4.2.1, Adding devices.



NOTE: Default configuration for IRM (authentication) is set to code with LDAP as the storage option. Please refer to Section 5.4.2, Authentication method and data storage options.

4.2.1 Adding devices

Adding devices to the HP AC configuration utility can be done either individually, by scanning for devices over the network, or by importing.

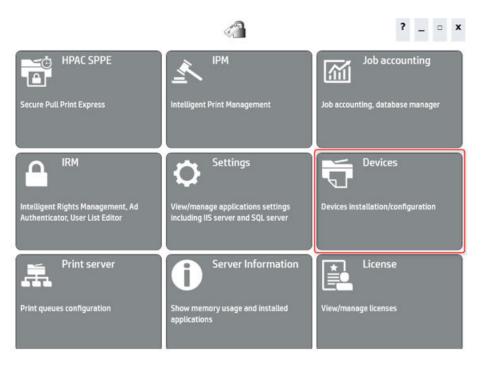
Prerequisites

- Printers and devices must be turned on and connected to the network.
- Device's EWS password has been set.
- Device's EWS username and password is entered in the Settings tile > Device tab.

4.2.1.1 Adding devices individually

Complete the following steps to add devices individually:

1. In the HP AC Configuration utility, click on **Devices**.



2. Enter the device IP address and click Add.

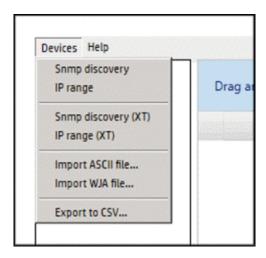


4.2.1.2 Adding multiple devices

You can add multiple devices either through an SNMP discovery or by entering an IP range.

To scan devices over SNMP:

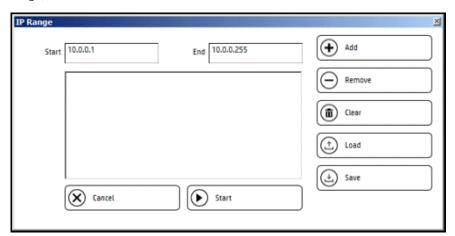
1. Choose **Snmp discovery** from the **Devices** drop-down menu. This will send a broadcast over the network to discover available devices.



2. The progress of the scan displays in the status section at the bottom and the device data appears in the device list.

To enter an IP range:

 In the Devices menu, enter the IP addresses in the Start and End fields. To add multiple IP ranges, enter the IP range in the Start and End fields and click Add to add additional ranges. To load a previously saved IP range, click Load.



- 2. Click **Start** to scan the network.
- 3. The progress of the scan displays in the status section at the bottom, and device data appears in the device list.
- 4. Click **Save** to save the IP range list.

4.2.1.3 Discovering devices using SNMP v3

Prerequisites:

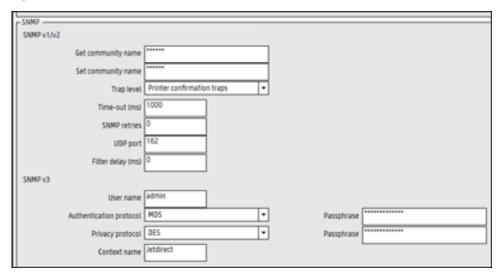
 To use SNMP v3 to discover devices, make sure SNMP v3 is enabled in the device EWS > Networking > Network Settings page.

NOTE: If SNMP v3 settings are set in the HPAC > Settings > Device > SNMP section, then SNMP v3 will be used to discover devices. If SNMP v3 settings are not set, then SNMP v1/v2 is used. If the server attempts to but cannot connect to a device using SNMP v3, then SNMP v1/v2 is used.

The SNMP v3 information entered on the device must match what is entered in HPAC. Complete the following steps:

1. In the **User name** field, enter the user name on the device for authentication.

Figure 4-2 SNMP information



- 2. Select the **Authentication protocol** based on the Message Digest Algorithm 5 (MD5) or Secure Hash Algorithm (SHA). Enter the **Passphrase** to match what is entered on the device.
- 3. Select the **Privacy protocol** based on the Data Encryption Standard (DES) or AES-128. Enter the **Passphrase** to match what is entered on the device.
- 4. For HP devices, keep the **Context name** as "Jetdirect".
- 5. Click Apply.

4.2.1.4 Adding XT devices

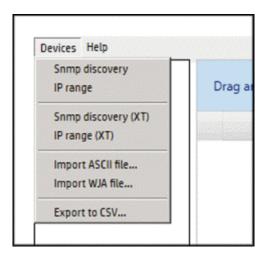
The XT device is an external device with an attached card reader that allows for pull printing at any printer or multi-function device. A user simply presents his or her card at the XT card reader and all of his or her stored jobs are printed at the connected printer.

Prerequisites

- XT devices must be connected to a power source, connected to the network, and connected to a printer.
- If your server has a firewall and you want to scan the network using SNMP discovery, make sure UDP 11000 is open.
- Card reader connected to the XT device.

To Scan over SNMP:

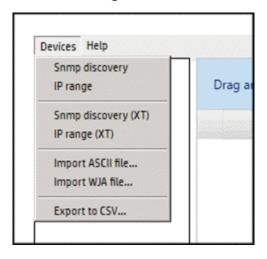
 In the Devices tile, go to the Devices menu and select SNMP discovery (XT). A broadcast will be sent over the network.



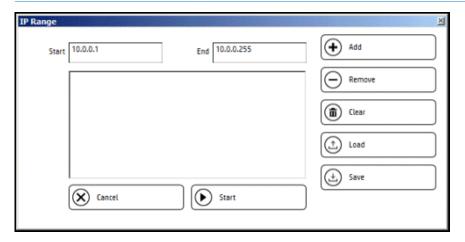
The progress of the scan displays in the status section at the bottom and the device data appears in the device list.

To Scan over IP:

In the Devices tile, go to the Devices menu and select IP range (XT).



- 2. In the Devices menu enter the IP addresses in the **Start** and **End** fields. To add multiple IP ranges, enter the IP range in the **Start** and **End** fields and click **Add** to add additional ranges.
 - NOTE: To Load a previously saved IP range, click Load.



- 3. Click **Start** to scan the network.
- 4. The progress of the scan displays in the status section at the bottom, and device data appears in the device list.
- 5. Click **Save** to save the IP range list.

4.2.1.5 Importing device data

Device data can be imported in an ASCII or CSV format.

To import a list of IP addresses/host names in ASCII or CSV format, complete the following steps:

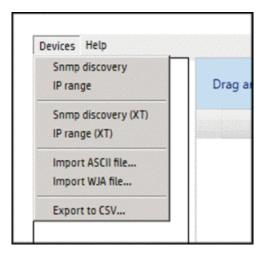
Prerequisites

- The CSV file must be exported from Web Jetadmin first.
- In the TXT or CSV file, each device must be listed on a separate line.

Refer to the HP Web JetAdmin documentation for instructions on how to export a CSV file.

To import device data from a CSV file:

1. Go to the **Devices** menu and select **Import WJA file...**.

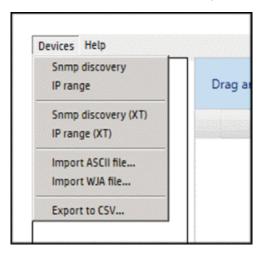


2. Browse to the location of the file, and click **Open**.

The progress will display in the status section at the bottom, and device data appears in the device list.

To Import device data from an ASCII file:

1. Go to the **Devices** menu and select **Import ASCII file...**.



- 2. Browse to the location of the file, and click **Open**.
- 3. The progress will display in the status section at the bottom, and device data appears in the device list.

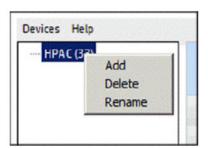
4.2.1.6 Block device with no licenses

If the limit of the number of IRM licenses has been reached, then the administrator will not be allowed to add more devices in the Devices tile. When attempting to input a new device in the Devices tile, a check will be made against the number of IRM licenses. If the licenses are completely used, then a new device will not be added. If standard licenses are used (Section 4.2.7.1, Standard Licensing), then the check for the agent will be made to where the agent license is defined (e.g. a central server or local licenses). If Enterprise licenses are in use (Section 4.2.7.2, Enterprise Licensing), then the check will be made from each server to the central SQL database when a device is added to the list. In the case of an SNMP broadcast or IP range, then once the number of devices has been reached, no more will be added.

4.2.1.7 Organize and manage devices

If you want to organize devices by groups, complete the following steps:

1. Right-click the HP AC device group and click **Add**. Give the new group a unique name.

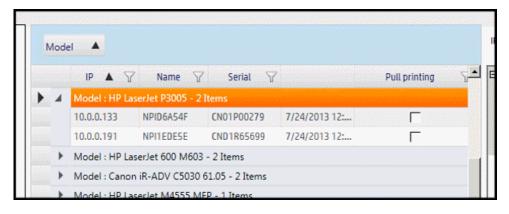


2. Click and drag devices from the device list to the new group name. This moves the device data from the HP AC group to the new group.

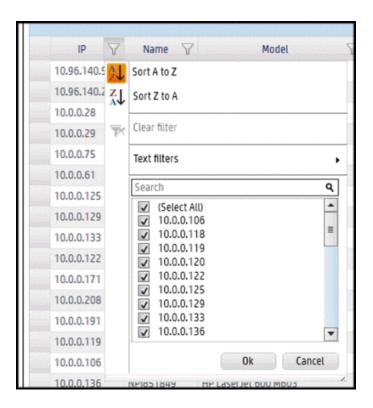
Ÿ TIP:

- Create multiple groups to better organize your printer environment. For example, create a group for single-function printers named SFPs to manage the installation and configuration of only singlefunction printers.
- Drag multiple columns to the drag and drop area for better organization. Rearrange the order of the columns from left to right to change the order of information displayed.

If you want to better organize the information displayed in the device list, click and drag column headings to the Drag and drop columns area.



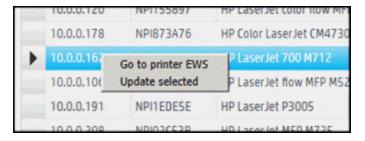
Click the filter icon in any column to sort or filter device data.



4.2.1.8 Devices drop-down menu

When in the Devices tile, you can right-click on a device to display a drop-down menu of possible actions:

- Click **Go to printer EWS** to go to the device's Embedded Web Server page.
- Click Update selected to refresh the device data.



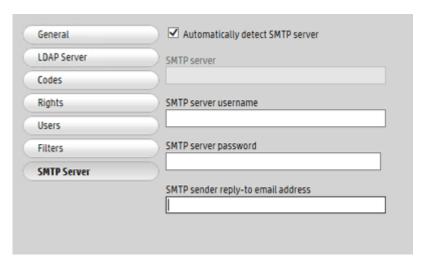
4.2.2 Email

For information about configuring the server to allow users to email jobs for pull printing, please see <u>Section 6.2</u>, <u>Set up the HP Access Control (HP AC) Secure Pull Print server for email printing</u>

4.2.2.1 Set SMTP Server parameters

This section describes how to set the AD-Authenticator SMTP Server parameters. The AD-Authenticator uses the SMTP server to email users their assigned codes and access rights.

1. Click **SMTP Server** in the IRM tile > AD Configurator tab to select the SMTP server parameter page.



- 2. Set the SMTP Server address. The AD-Authenticator can usually detect your SMTP server automatically. Select Automatically detect SMTP server to enable this feature. To disable the feature, uncheck the box and enter the network name or IP address of your SMTP server.
- Specify the username and password to be used to access the SMTP server if the server requires authentication.
- 4. Codes sent by email to users are automatically sent from the address "no-reply@domain.com", where the domain is automatically populated using the user's email address. When using multiple domains, it is required to enter the email address to be used in the "SMTP sender reply-to email address" field. This is the "FROM" email address that users will see when they receive a code through email.

4.2.2.2 Configuring for email notification

Perform the following steps to configure the HP Access Control server to send email notifications to end users, all of which contain information that can be sent via email:

- Job Accounting reports
- Device analysis scheduled scans.
- IPM notifications (when using email notification).
- Notification from the Secure Pull Print Express or the Secure Pull Print Enterprise if a user's job cannot be processed.
- AD User Editor information, AD Group Manager information, and User List Editor PINs.
- HP Access Control Enterprise license notification.

Prerequisites

• Email attribute configured in the IRM tile > AD Configurator > Users tab.

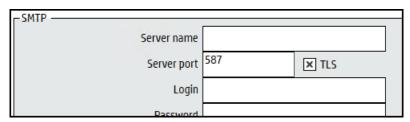
Complete the following steps:

1. In the Settings tile select the **Email** tab.

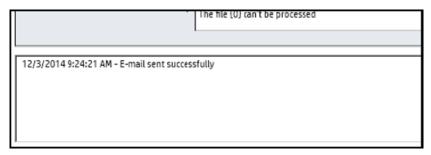
2. Under the SMTP section, enter the **Server name** (name or address of your company's email server).

SMTP —			
Server name			
Server port	25	TLS	'
Login			
Password			
Sender email address			
Recipient email addresses			
	HP AC Secure Pull Pr		
Email body for license expiration:	The file {0} can't be	processed	

3. If required, change the email Server port (default is 25). Click the TLS checkbox to enable Transport Layer Security protocol to encrypt and deliver mail securely.



- 4. Enter the domain user / password having access to the email server in the **Login** and **Password** fields.
- 5. In the **Sender email address** field, enter the email address you want to appear in the "From" field of emails. If you are submitting jobs for email printing to the HP AC server it is recommended to use the same email address that the users submit their jobs to, so that users receive notification emails from that address. See Section 6.2, Set up the HP Access Control (HP AC) Secure Pull Print server for email printing
- 6. In the **Recipient email address** field, enter an email address to test the connection between the email server and the recipient. Click **Test**.



- In the Email subject field, enter the subject of the notification email. The default is HP AC Secure Pull Printing.
- 8. In the **Email body** field, enter the message you want to appear in the body of the notification email. The default is **The file {0} can't be processed where {0} represents the name of the job**.

NOTE: For device-based user lists you will be prompted before sending user the PINs to enter the SMTP server information again.

4.2.3 Configuring the server for device communication

Before configuring devices you must enter the device administrator password in the HP AC configuration utility. The device password must be the same password for all print devices.

Prerequisites

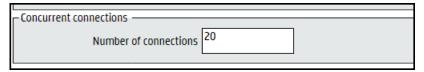
- HP Access Control (HP AC) Agent and HP Access Control (HP AC) Secure Pull Print Express/Enterprise must be installed on the server.
- Before installing any solution on HP devices, make sure the correct PRN installation file displays in the
 installation file field in the Settings tile > Agent tab.

Complete the following steps:

- 1. In the HP AC configuration utility, go to the **Settings** tile.
- Click Device tab and enter the Administrator password (in the Device section).
- NOTE: All device's must be configured with this password before configuration. Please refer to product documentation on how to set the Embedded Web Server password on the device.



- a. Disable device ping Select this check box if pinging between devices and server is NOT allowed. Disabling this will force it to perform telnet communications only if ping is disabled on your network. By default, the box is not selected meaning that ping is used to detect the presence of a device IP, and then telnet is used to verify that the device is a printer.
- b. Click Apply.
- Go to the Settings tile and select the Device tab. Under the Concurrent connection, set the maximum number of network devices you want to install and configure at one time. The maximum number of concurrent connections allowed is 50.



4.2.4 Configuring server certificates

The servers need to be configured to use certificates. Server certificates are used for security purposes, to confirm the identity of a Web server before sensitive data is transmitted, and to establish a secure HTTPs communication to exchange data. With HP AC, certificates are required to exchange authentication/authorization data through HTTPs, and to establish (for OfficeJet Pro devices) to use OPS for the initial configuration of the

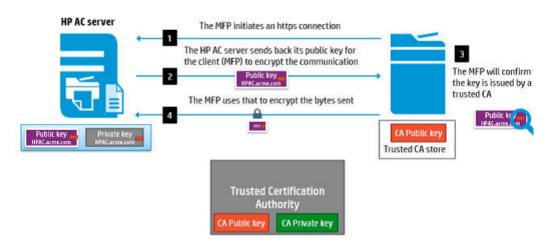
print devices. These are also useful in order to optionally encrypt other communications between servers and between servers and devices.

IMPORTANT: It is not recommended to use a self-signed certificate in production environments. It is recommended that you use a certificate that is issued and signed by a trusted certification authority or create a v3 certificate from within the HP AC configuration utility. It is not recommended to use the certificate created by the OPS installer in production environments.

The following diagram illustrates how certificates are used when a communication from a device to a server is established for an HTTPs communication, related for example to an authentication event.

Using SSL for HP AC communications

SSL between printers/MFPs and the HP AC server



4.2.4.1 Configuring Web services

The Web service configuration is used for the following:

- For devices to communicate with the Job Accounting website to determine quotas for copies and digital send jobs.
- To send IPM notifications to client desktops.
- For users to access pull print jobs from a device, mobile device, or web page.
- For communication between the server and the IRM license Web service.
- For central management of print devices. When multiple servers are entered in the Web service settings, and when devices are configured in the Devices tile, a drop-down list displays in the Configure window allowing you to select the server you want to configure the device to. From one central server you can configure print devices to be managed by a different server.

Prerequisites

• HP Access Control (HP AC) Agent and HP Access Control (HP AC) Secure Pull Print Express or HP Access Control (HP AC) Secure Pull Print Enterprise must be installed on the server.

To do this, complete the following steps:

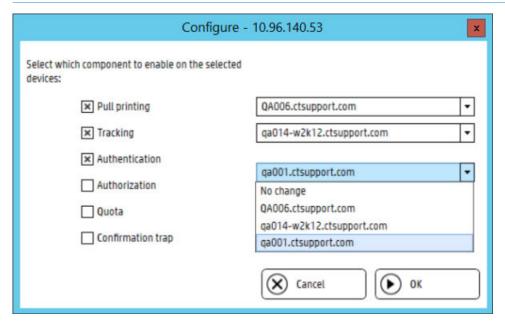
- 1. In the HP AC configuration utility, go to the Settings tile.
- Click the IIS tab. Under the Web service section you will see the Server name and IP address of the server containing the Quota, IPM, and Pull Printing web services.

 To add additional servers, double-click in the fields and enter the Fully Qualified Domain Name (FQDN) of the additional server(s) and the IP addresses. Hit the <enter> key and click Test. The Status column should display OK.



NOTE:

- When configuring HP AC there may be a requirement to set the device to look at multiple IIS servers.
 When multiple IIS servers are in the Settings > IIS area, then the option to configure for a different IIS
 server will appear for the Pull Printing, Tracking, and Authentication/Authorization options in the
 Devices > Configuration window. The Authentication and Authorization options must be configured to
 the same server.
- When using multiple IIS servers ensure that the server certificates are configured properly. Refer to Section 4.2.4.3, Creating certificates in a multi-server installation.



- 4. By default, **Encrypt all web communication (devices)** is enabled. This will enable HTTPS protocol for communication between the devices and the servers. For some web communications HTTPs is already enforced and not configurable.
- 5. If using a certificate that was issued to a server name then you must check **Use server name instead of IP** (devices).
- NOTE: If using server name, ensure the device's DNS entry is properly configured.

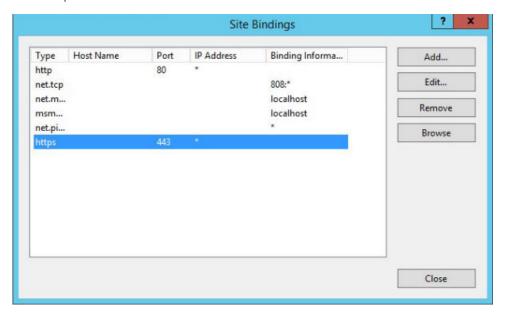
4.2.4.2 Generating self-signed v3 Certificates

To generate self-signed v3 certificates, complete the following steps:

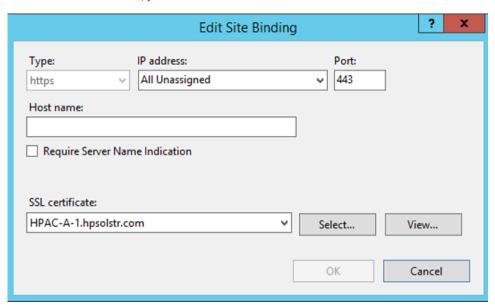
- 1. Click the Settings tile > IIS tab.
- 2. Click **Create Certificate**. Two certificates are created for the server: one based on the server name and one based on the IP address. The certificates are created in the \Program Files\HP\HP Access Control folder. The certificates are also created in \Program Files\HP\HP Access Control\Open SSL and are used for communication between multiple HP AC servers.
- 3. Click **Apply**. This will automatically bind the certificate to the default web site.

To view the assigned certificates in IIS:

- 1. Go to IIS Manager.
- 2. Go to the Sites > default Web Site and select **Bindings** in the Actions pane.
- 3. Select https and click **Edit**.



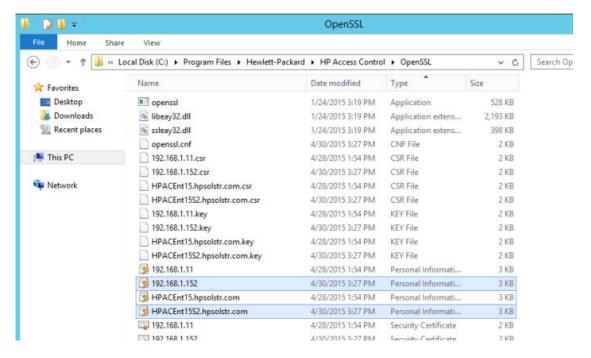
4. In the SSL certificate field, you will see the certificate.



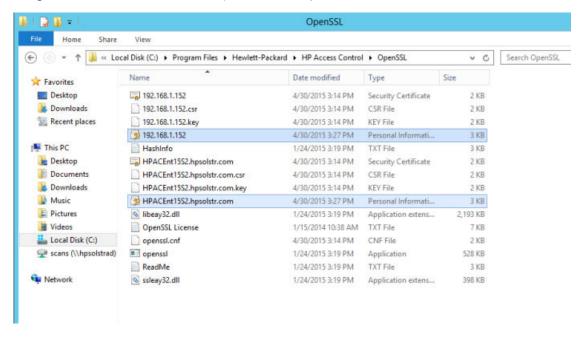
4.2.4.3 Creating certificates in a multi-server installation

In a multi-server installation, all servers must contain certificates for all servers. Certificates must be created from one server and copied to the other remote servers. Do not create certificates on each remote server.

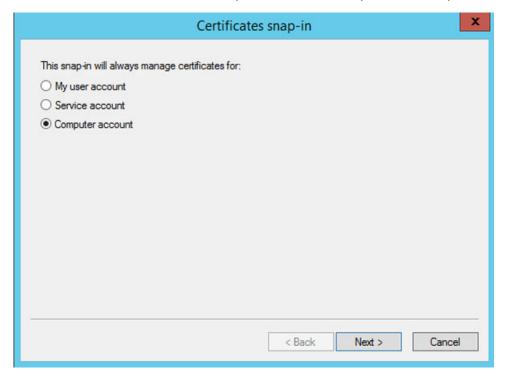
- 1. On the central server go to Settings>IIS and add the hostname and IP address of the other servers to the list. Press the <Enter> key.
- Click Create Certificate.
- 3. Go to \Program Files\HP\HP Access Control\Open SSL and copy the two personal information exchange files created for each server.



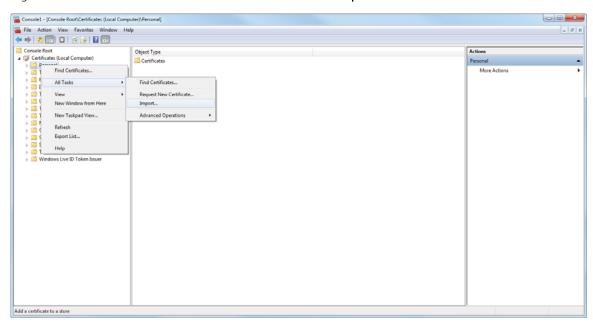
4. On each remote server copy the corresponding certificates for each server and paste them into the \Program Files\HP\HP Access Control\Open SSL directory.



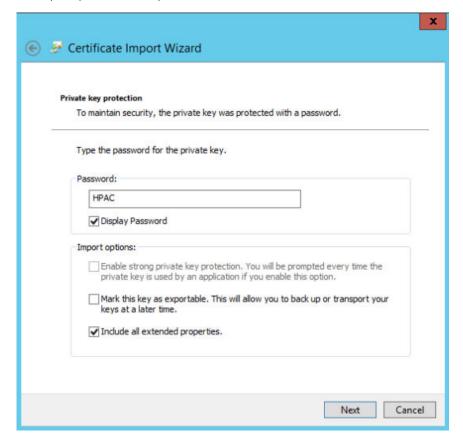
5. On each remote server launch mmc and open the Certificates snap-in for the Computer Account.



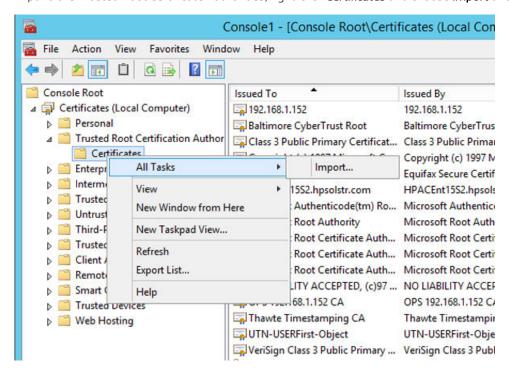
6. Right-click on the Personal folder and under All Tasks choose Import.



- 7. Browse and import both the hostname and the IP certificate from the OpenSSL folder.
- 8. When prompted enter the password: HPAC.



9. Expand the Trusted Root Certificate Authorities, right-click **Certificates** and choose **Import** under All Tasks.



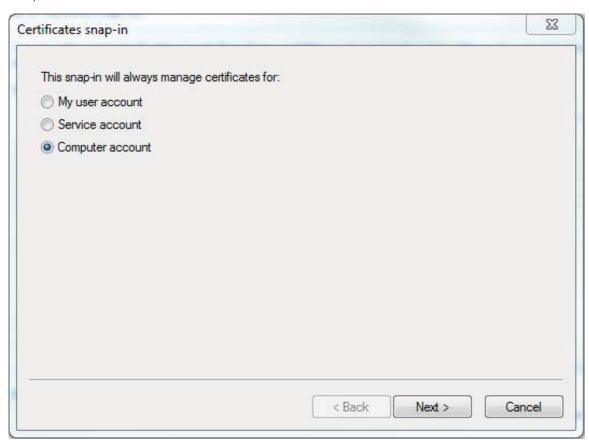
10. Import both the hostname and IP address certificate from the OpenSSL folder. When prompted enter HPAC for the password. Now when devices are configured from one server to use another server for authentication, secure communication between the devices and all the servers can be established.

4.2.5 Using the customer's signed certificate

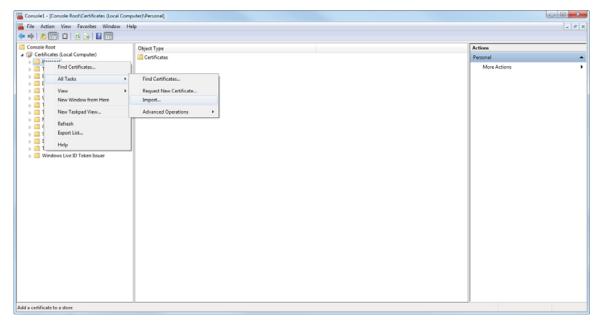
If the customer has their own certificate that was issued and signed by a trusted certification authority, then use these certificates instead of the v3 certificate created by the HP AC configuration utility. HP Access control requires both the *.PFX and the *.CER certificate.

- Copy the certificate (personal information exchange file) to the \Program Files\HP\HP Access
 Control\Open SSL folder.
- NOTE: After the customer certificate is added to the Microsoft Management Console and HTTPS bindings, the certificate will be pushed to a device at the time the device is configured for authentication and/or pull printing. Certificates can also be pushed using HP Web Jetadmin.

 Launch MMC and under the file menu choose Add/Remove Snap-in. Select Certificates snap-in for the Computer Account.

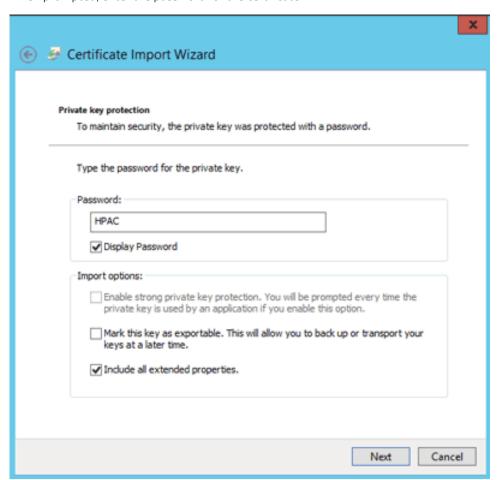


3. Right click on the Personal folder, navigate to All Tasks, and choose Import.

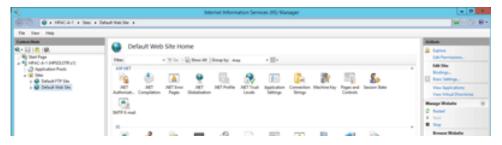


4. Browse and import the *.pfx certificate from the OpenSSL folder.

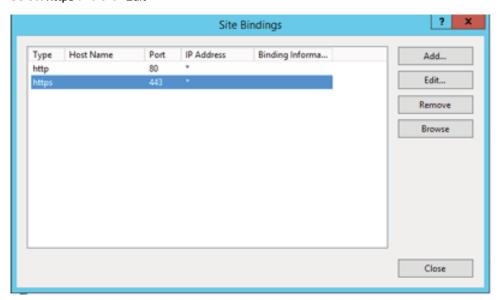
5. When prompted, enter the password for the certificate.



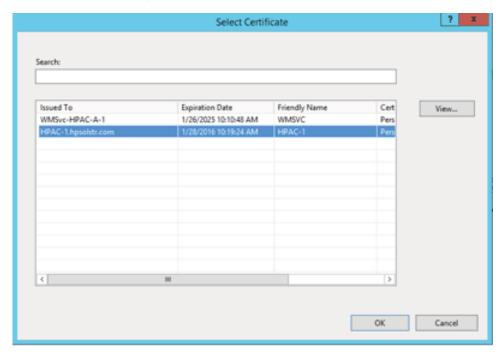
- 6. Go to IIS Manager.
- 7. Go to **Sites > Default website**, navigate to the **Actions** pane and select **Bindings**.



8. Select https and click Edit.



9. In the SSL certificate field, select the customer's certificate.



- 10. The *.CER certificate that the customer has supplied you must be renamed in the format of "IIS x.x.x.x.cer" or "IIS FQDN.cer", where "x.x.x.x" is the IP address of the server and "FQDN" is the FQDN of the server.
- 11. Copy the renamed file into the \Program Files\HP\HP Access control directory.
- IMPORTANT: If using a certificate that was issued to a server name then you must check "Use server name instead of IP (devices) in the Settings > IIS > Web Services section in the configuration utility. Ensure that the device's DNS entry is properly configured.

4.2.6 Configuring the Agent license service

The Agent license service allows you to assign IRM licensing to a different server. By default, the field is populated with the IP address of the current server.



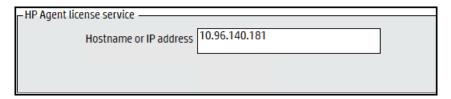
NOTE: This must be performed prior to configuring devices.

Prerequisites

HP Access Control (HP AC) Agent and HP Access Control (HP AC) Secure Pull Print Express/Enterprise must be installed on the server.

Complete the following steps:

Go to the **Settings** tile. Under the **IIS** tab, enter the **Hostname or IP address** of the server that is hosting the license service.



Click Applv.

4.2.7 Configuring the server for licensing

4.2.7.1 Standard Licensing

By default the server will use standard licensing. In this licensing model, the server is required to have the corresponding number of licenses for each device that will be configured from that server.

4.2.7.2 Enterprise Licensing

Prerequisites

For email notifications, email settings must be configured in the Settings tile > Email tab > SMTP area. See Section 4.2.2, Email

When installing in a multi-server installation it is recommended to use enterprise licensing. One server will be the central license server and all other servers will become clients communicating to the central server for licensing of the devices. A database is created to store all component license keys. This database can be on the central server or stored off server in a SOL database.

4.2.7.2.1 Central License Server

- Select **Type Server** on the server that will be the central licensing server. 1.
- 2. Enter the SQL server name and instance if applicable where the database will be stored.
- 3. Enter the database name you want to create or connect to. If creating a database the name can be anything (i.e. License).
- Choose the authentication method SQL or Windows. The account must have db_creator rights or sysadmin rights in order to create the database. After the database is created the account can use db_owner.
- The default port the clients will use to communicate with the license server is 50080. The port must be open inbound and outbound on the central license server.

- 6. In the recipient email addresses field, enter the email addresses of the HPAC administrators that will be notified when there is an error communicating with the databases or when licenses are about to expire.
 - a. In the Email body for license server error you can customize the notification that will be sent out.
 - **b.** In the Email body for license expiration you can customize the notification that is sent regarding the expiration of licenses.
- 7. Click **Test** and then **Apply**. After clicking Apply the HP AC License Service will install in the background. After installation is complete you can view the service in the services console.

NOTE:

- The specified port must be opened on the server for the client servers to communicate with the central server.
- Notifications apply to individual component licenses.
- Notifications will be emailed on the following schedule: 90, 60, 30, 15, 7, 6, 5, 4, 3, 2, 1 day(s) before the expiration date. On the expiration date and every day after emails will be sent.
- Using Enterprise licensing will change the license ID key to be the name of the server.
- The HP AC License Server service allows for communication to the license database and only runs on the central server.
- If there is a loss of connection to the SQL database, the pull printing license pool will be available for 7 days. After 7 days, the pull printing license will be released from the assigned devices and users will not be able to pull print from the devices.

4.2.7.2.2 Client License Server

These steps need to be performed on each server that will be communicating with the central license server.

Prerequisites

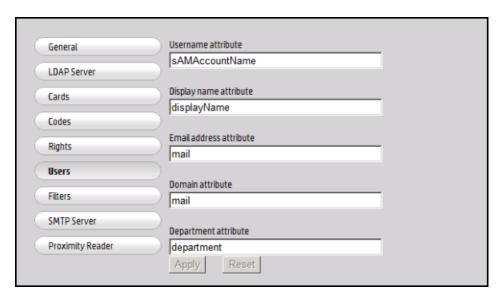
SMTP settings must be configured. See Section 4.2.2, Email

Complete the following steps:

- 1. In the Settings tile go to the License tab.
- 2. Select **Enterprise** as the mode and under Type, choose **Client**.
- 3. In the License Server name:Port enter the server name and port (HPAC-A-1:50080). The default port is 50080. The port specified must match the port set on the central server. The port must be open inbound and outbound on the client license server.
- 4. In the recipient email addresses field, enter the email addresses of the administrators that will be notified in the event that there is an error communicating to the central server.
- 5. In the email body for license server error you can customize the notification that is sent when a connection error occurs.

4.2.8 Set user parameters

This section describes the procedure for configuring AD-Authenticator to access read-only user information from your Active Directory.



Complete the following steps to configure your user information:

- 1. Click **Users** to select the user parameter page.
- 2. Enter the correct LDAP attribute names for each of the listed user properties. The default values are appropriate for most Active Directory installations.
- 3. Once all attributes are correct, press the **Apply** button to store any changes you have made.

4.2.9 Configuring Job Accounting general settings

4.2.9.1 Configuring database access when using a remote SQL server

Prerequisites

When the HP AC Job Accounting database is installed on a remote server, the database connection must be configured for the following:

- Allow Job Accounting to process job accounting files
- Allow end users to connect to the Job Accounting website to schedule and view reports
- Authentication method set correctly

4.2.9.1.1 Authentication methods

There are two methods available to connect to the remote database:

- Windows authentication
- SQL authentication

4.2.9.1.1.1 Windows authentication

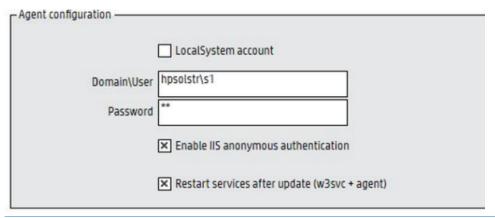
When Windows Authentication is used, anonymous authentication must be enabled in IIS using a Windows account with database access to the Job Accounting Database. The Job Accounting Agent service must be started with the same account.

- 1. Create or use a Windows account with dbo access to the Job Accounting database.
- 2. Log onto the Job Accounting application server using the Windows account login created in step 1.
- 3. Launch the HP Access Control Configuration utility.

4. Go to the Settings tile and in the Database tab, under Database configuration select **Windows authentication**. Select **Test** and **Apply** to verify and test the connection to the job accounting database.

Databa	ase De	evice	Email	112	SPP Enterpri	se	Allas	Ageni
Database config	guration ——							
	SQL server	SQLSER	VER\SQL1					
		Wind	lows authen	tication				
		○ SQL	authenticati	on				

5. Uncheck LocalSystem account. Enter the account user name and password. This login account will be used to start the HP Access Control Job Accounting Agent service and for Anonymous Authentication in IIS. Select Enable IIS anonymous authentication which assigns the IIS anonymous user identity to the username entered in the Domain\User field. This allows only domain users to access the Job Accounting website. Click Restart services after update.



NOTE:

- This allows for automatic import of domain users/groups into the JA server.
- If using windows authentication for SQL this is required for access to the Job Accounting database.

4.2.9.1.1.2 SQL authentication

When SQL authentication is used, the SQL password will be stored non-encrypted in the HP Access Control Job Accounting Agent service configuration file (Agent.exe.config). The HP Access Control Job Accounting application will store the SQL password encrypted in the registry.

- 1. Create or use a SQL user and password on the remote SQL server and give this account dbo access to the HP Access Control Job Accounting database.
- 2. Launch the HP Access Control Configuration utility.
- 3. Go to the Settings tile and in the Database tab, under Database configuration, select **SQL Authentication**.
- 4. Enter the user name and password for the SQL account.
- 5. Select **Test** and **Apply** to verify and test the connection to the Job Accounting database.

4.2.9.2 Configuration for User tracking

The following steps must be completed when using Job Accounting.

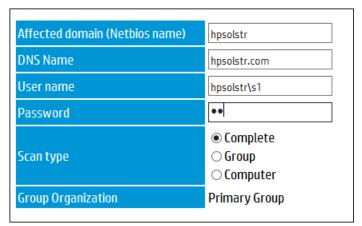
1. The first time a user prints they will be automatically added to the database, or you can perform a network scan. Go to the Job Accounting tile and log in with the default Job Accounting Administrator account: admin/Admin (case sensitive).



2. On the left menu, click **Administration** and then the **Active Directory** menu. Select **Retrieve User Data**.



3. Enter the DNS name for the domain and the User name and Password having read rights to that domain.



- NOTE: The domain name is required before the username. This user will be used to search the network and must have administrator rights in each domain the scan is performed in.
- 4. Click the Play button.
- 5. To see the data, navigate to another page and then back to the Active Directory tab to see the new data.
- 6. Click to select user options. Enter email address that will receive Job Accounting reports and click on the arrow button to save.
- 7. Go to the Settings tile > Device tab. Under Tracking, select the device information to be displayed in Job Accounting reports (this applies to HP FutureSmart devices only).
 - Network name: Displays host names of devices in the Job Accounting reports.
 - **Device name**: Displays model names in Job Accounting reports.



- NOTE: If you have many of the same models in the environment then it is recommended to select **Network name** to avoid duplication.
- 8. Under SNMP, do the following:
 - **a.** Ensure the **Get Community name** entered has read access to read the network/host name of the device. The default GET community name for HP devices is public. The SET community name is not used by HP AC is this version.
 - b. If using Traps, in the **Trap level** field, select the type of traps you want to track with Direct Tracking Module (DTM). Before configuring a device for Confirmation Traps, make sure the device supports SNMP traps. A trap is a packet of information provided by the printer that indicates basic job information and print job status, and is supported on HP print devices only. It is recommended to use the in-printer agent for tracking and not the Direct Tracking Module.
 - **Print confirmation traps** is the default Trap level. With Print Confirmation traps selected, only printed job traps are sent from the device. This is used to reduce the network traffic with unwanted traps.
 - All traps are to track all jobs, printed, copied, or digitally sent. Some versions of HP JetDirect require that All traps mode is selected.

The **UDP port** field is the port used by the trap service. By default, the Trap service uses UDP port 162. If the port is used by another application or service on the same server, the Job Accounting Trap service can use another port. If the port is changed, the Job Accounting Trap service (HPACJA_SnmpTrap) needs to be stopped and restarted. Printers also need to be reconfigured using the new port.

The **Filter delay (ms)** field is the port used by the Trap service. By default, the Trap service uses UDP port 162. If the port is used by another application or service on the same server, the Job Accounting Trap service can use another port. If the port is changed, the Job Accounting Trap service (HPACJA_SnmpTrap) needs to be stopped and restarted. Printers also need to be reconfigured using the new port.

NOTE: To test a device, in the Devices tile, right-click on a device to display a drop-down menu. Select **Test trap** to test the device with the Confirmation traps component enabled.

4.2.9.3 Configuring the server for tracking data

To send tracking data from devices to the Job Accounting server, the transfer protocol must be configured. This is used by non-FutureSmart devices to upload job accounting tracking files. It is also used in a multi-server environment to point the Job Accounting data collectors to the main Job Accounting server.

NOTE:

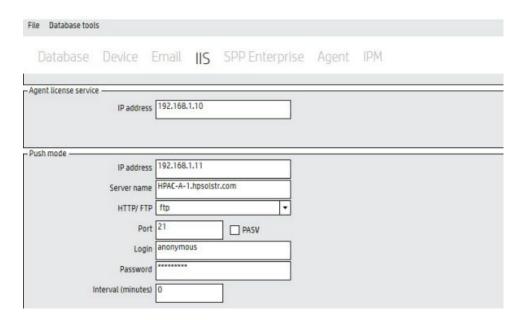
- This must be performed prior to configuring devices.
- When accessing the Push Mode settings from a Job Accounting server, the Push Mode settings apply to HP non-FutureSmart devices and are used to push tracking files from the device to the server. HP non-FutureSmart devices support FTP and HTTP protocols only, so if HTTPS is selected, the settings will revert to HTTP when the HP AC Admin console is reopened.

Prerequisites

- HP AC Agent and HP AC Secure Pull Print Express/Enterprise must be installed on the server.
- HP AC Job Accounting server installed on a local or remote server on your network.

To configure the server for tracking data, complete the following steps:

- 1. Go to the **Settings** tile and select the **IIS** tab.
- 2. Under **Push mode**, select the protocol to transfer the data.
 - Hypertext Transfer Protocol (HTTP) connections are usually terminated after a particular request has been completed. If HTTP FTP is selected, Windows credentials are required in the Login and Password fields. Also, if IIS 7 or newer is installed on the server, Basic Authentication needs to be enabled.
 Devices require Basic Authentication to pass data via HTTP when IPA sends tracking data to the Job Accounting Print Server. The default Port is 80.
 - File Transfer Protocol (FTP) is best for uploading data to an internal database server. If HTTP / FTP is selected, any credentials can be used in the Login and Password fields. By default, both Login and Password are "Anonymous". The default Port is 21. Select the PASV checkbox to enable passive mode FTP if you want to allow data to transfer more easily through firewalls.
- 3. Set the Interval (minutes) to specify how often tracking data is pushed from the devices to the Job Accounting server.
- 4. Click **Test** and **Apply**.



4.2.9.3.1 Enable Tracking of Pull Print jobs

For print devices that do not support in-printer tracking, to track the number of pages that are pull printed. This applies to devices such as HP OfficeJet Pro, HP S900, and multi-vendor devices that do not have an embedded agent.

- 1. Go to the Settings tile and go to the SPPE or SPP Enterprise tab (depending on installed bundled).
- 2. Under Options select Enable Tracking of printed jobs.

NOTE: Enable tracking of printed jobs with local job storage is not supported. This is because jobs must be stored on the server for Enable tracking printed jobs to work correctly.

4.2.9.3.2 Enable Tracking of Purged jobs

If there is an HP Access Control Job Accounting server in your environment, you can enable tracking of expired Pull Print jobs in Job Accounting reports. Tracking of expired pull print jobs can be enabled. This will create an XML file for each job that is purged. The XML file includes information such as the purged job name, the date the job was submitted, and the date the job was purged:

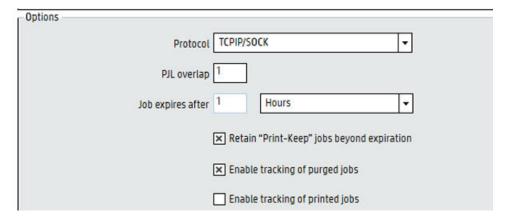
Prerequisites

HP AC Job Accounting server configured in the environment

Complete the following steps:

1. Go to the Settings tile and select SPPE or SPP Enterprise tab.

2. In the Job Account section select **Enable tracking of purged jobs**.



- 3. If Job Accounting is installed on the same server as Secure Pull Print Express, the XML files are created in the following folder:
 - Program Files\HP\HP Access Control\temporary\DTM
- 4. If Job Accounting is installed on a different server, the XML files are created in the following folder: Program Files\HP\HP Access Control\temporary
- 5. When purging is complete, the XML files are pushed to the Job Accounting server in the Temporary\DTM

4.2.9.4 Quota management

Quota is an optional Job Accounting feature that allows the administrator to set limits on how much each user is permitted to print, copy, or digital send. Quota is not intended to suddenly stop business, especially during a print job. If a user needs to print a job, and it goes over the quota limit, the purpose is to allow the job to continue. The intent with quota is to limit the amount of use of the printing infrastructure overall, not to restrict at a page level for a given print job.

Quota is controlled at the device level (on supported devices) and at the queue level for printing.

Prerequisites

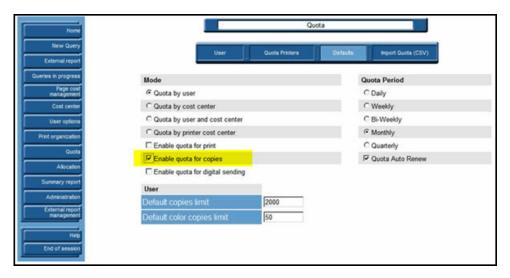
- For quota to work within a pull print environment, in-printer tracking is recommended for better accuracy
 of Job Accounting tracking data.
- For quota tracking for copy and digitally send jobs, the device must support in-printer tracking (HP AC Agent)

For more information about controlling quotas for users in Job Accounting, please see <u>Job Accounting</u>.

IMPORTANT: In order for Quotas to be tracked, Tracking must be configured at the print queue or at the device. Either go to the Print server tile and configure the print queue for Tracking, or go to the Devices tile and configure the device for Tracking.

To configure Quota for glass activity on a device, complete the following steps:

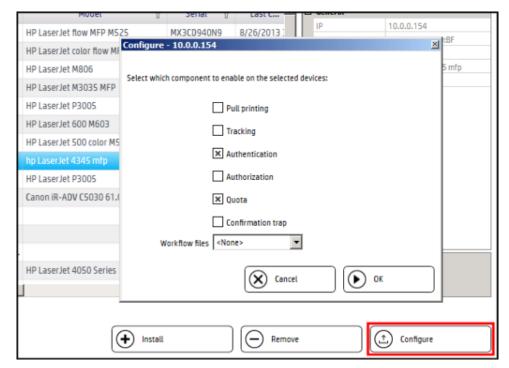
 In the Job Accounting Quota module, go to the Defaults page. Select Enable quota for copies and/or Enable quota for digital sending.



2. Go to the Settings tile > Agent tab. Select **Enable quota for copies**. Click **Apply**.



3. Go to the Devices tile. Install Agent on the device and configure the device for Quota and Authentication.



4. Set the sign-in method on the device to control Quota when users use functions at the device.

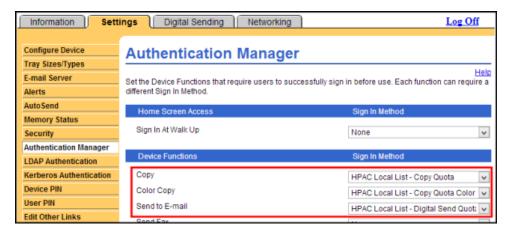
a. Go to the device's embedded Web server (EWS). Open a Web browser and enter the following in the address bar:

http://deviceaddress

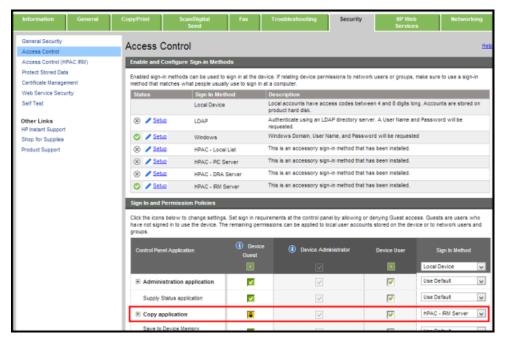
Where deviceaddress is the IP address of the device you configured for Quota.

- **b.** For non-FutureSmart devices, go to the Settings > Authentication Manager page.
 - For the Copy function, select **HP AC Local List Copy Quota**.
 - For the Color Copy function, select **HP AC Local List Copy Quota Color**.
 - For the Send to Email, Send Fax, and/or Send to Folder functions, select **HP AC Local List Digital Send Quota**.

Then click **Apply**.



c. For FutureSmart devices, go to the Security > Access Control page. For the Copy, Fax, and/or Email functions, select HPAC - IRM Server. Then click **Apply**.



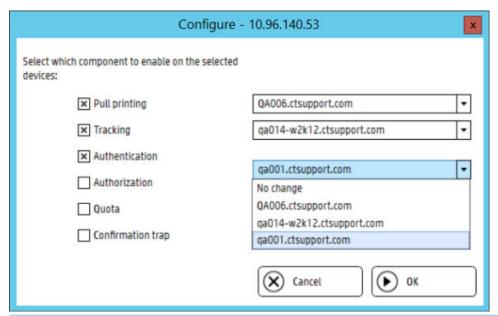
4.2.9.5 Tracking management

Tracking is supported by HP Access Control (HP AC) In-Printer Agent (IPA), and HP Access Control (HP AC) Individual Rights Management (IRM).

HP Access Control (HP AC) Agent Tracking captures usage data directly from network printers and MFP devices. This section describes the configuration of the tracking feature.

NOTE: HP Access Control (HP AC) Agent must be installed on the device before beginning this configuration procedure.

To install or configure a device, go to the Devices tile. Select a device, click Configure, then select Tracking. Click OK.



NOTE: When configuring HP AC there may be a requirement to set the device to look at multiple IIS servers. When multiple IIS servers are in the Settings > IIS area, then the option to configure for a different IIS server will appear for the Tracking option in the Devices > Configuration window.

4.2.9.6 Print Server tracking

In the Settings tile > Print Server, you can configure methods of gathering print server tracking data.

- **Port monitor** creates a new port monitor for printers. This is the preferred method to gather tracking data.
- Print processor replaces the existing print processor with the Job Accounting print processor. This method may not work with all printer drivers.

In the **Print server quota web service** section, click to enable features of the quota web service:

- Click the **Skip quota control if network failure** checkbox to allow users to print after the server loses connection to the web service. If this feature is not enabled and there is a network failure, then quotas cannot be determined and all printing stops.
- Click the **End user notification** checkbox to enable notifications on client workstations of remaining user quotas.

In the **Snmp tracking** section, click to enable features:

- Click the Track copies checkbox to enable tracking of copies at multi-function printers.
- Click the Track digital sending checkbox to enable tracking of digital send jobs at multi-function printers.

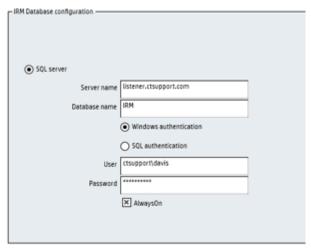
In the **Encoding** section, click the Double byte encoding checkbox to track print jobs with job names containing double byte characters.

In the **Encryption** section, click the **Encryption** checkbox to encrypt tracking data on the print server and when data is sent to the Job Accounting server.

4.2.10 Configuring connection to a SQL Server with AlwaysOn

If the Job Accounting, IRM or License databases are connected to a SQL Group Listener with SQL AlwaysOn enabled, make sure to select the AlwaysOn checkboxes in the HPAC Settings. HPAC utilizes the SQL Group Listener to connect to the HPAC databases. When installing and configuring HPAC, enter the SQL Group Listener address in place of the physical SQL Server instance. The AlwaysOn checkbox changes the connection string to the SQL Server. The AlwaysOn checkboxes can be found in the following locations:

- For Job Accounting database, go to Settings > Database > Database Configuration.
- For IRM database, go to **Settings > Database IRM Database Configuration**.
- For License database, go to Settings > License > Enterprise.





- SQL authentication: Server=xxxx;uid=sqllogin;pwd='sqlpassword';Database=HPACJA
- SQL authentication with AlwaysOn: Server=xxxx;uid=sqllogin;pwd='sqlpassword';Database=HPACJA;MultiSubnetFailover=True
- Windows authentication: Server xxxx; Trusted_Connection=true; Database=HPACJA
- Windows authentication with AlwaysOn: Server xxxx; Trusted_Connection=true; Database=HPACJA; MultiSubnetFailover=True

4.2.11 HP AC Configuration Utility Web Console

Prerequisites

Internet Explorer minimum version IE 11 with Microsoft Silverlight installed

Add http://servername/ and https://servername/ to the list of Trusted Sites in Internet Explorer

- Microsoft .NET Framework 4.6
- TCP port 445 has to be opened on the client and on the routers/switches between the server and the client

The HP AC admin console can also be accessed via Internet Explorer from any workstation on the network.

Complete the following steps:

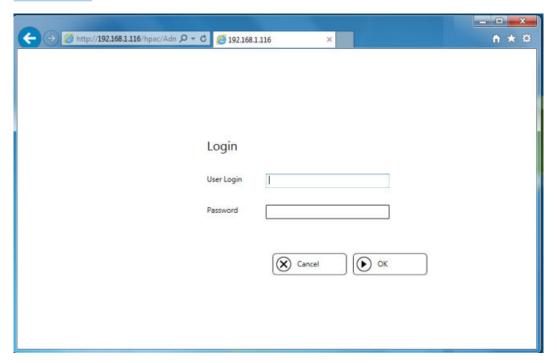
1. To access HP AC, open Internet Explorer and enter http://<servername>/hpac, where <servername> is the FQDN or IP address of the HP AC server. On the page, click **Run**.



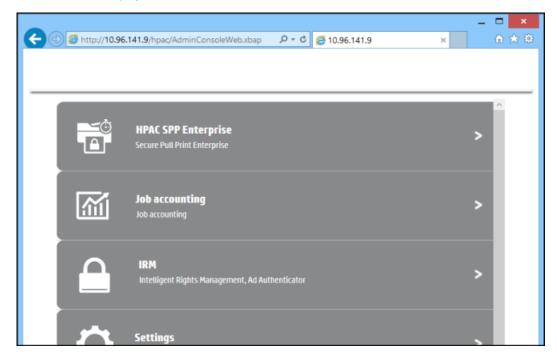
2. This will install the Windows Presentation Foundation Host required to run the admin console within the web browser. If prompted with a security warning select **Run**.



3. If login is required you will be prompted to enter your credentials. See <u>Section 9.1, Managing access to the Admin console</u>



4. The console will display.



NOTE:

- The localization for the web console is using the regional settings of the client workstation accessing the web app, not the regional settings of the server.
- The HP AC web console can connect to one HP AC server at a time. To switch the connection to a different HP AC server, open a command prompt and run: Rundll32 %windir%\system32\dfshim.dll CleanOnlineAppCache

This is to clear the cache of the old server on the PC and run the new one.

5 Authentication

HP Access Control requires authentication to know who the user is. Knowing who the user is allows the solution to track the details on the activity of the user, associate print jobs to the user, and allow for user rights management (assignment and control) by individual user or by AD groups.

The base requirements are that the user login name (i.e. sAMAccountName or UserPrincipalName) and login ID (proximity badge ID or code ID) are matched together initially.

If you chose to use the TCPIP/IPPS protocol in the HP AC configuration tool > Settings tile > SPP Express or SPP Enterprise tab, make sure IPPS-SSL is enabled on the device. Go to the device web page > Security Settings > SSL Settings. In the **Setting of SSL** section, make sure **IPP-SSL** is set to **Enable**. Click **Submit**.

Authentication options are:

- Card or Windows
- Code (PIN/PIC)
- Card and Code (two-factor) or Windows
- Touch to Sign-In (with an Android smartphone with NFC support and the HP ePrint Enterprise app)
- Card or Code

5.1 Agents

The HP Access Control (HP AC) Agent can track MFP device or printer usage, manage access to MFP device functions, or institute printing and copying quotas.

Prerequisites

• The HP AC Job Accounting Server must be installed to use HP Access Control (HP AC) IPA and HP Access Control (HP AC) IRM functions.

The following agents are available:

- HPAC-IPA: In-Printer Agent for device tracking
- HPAC-PIC: Authentication
- HPAC-DRA: Authentication and Authorization to access walk-up device features by user or group
- HPAC-IRM: Authentication, Authorization to access walk-up device features by user or group and with Quota

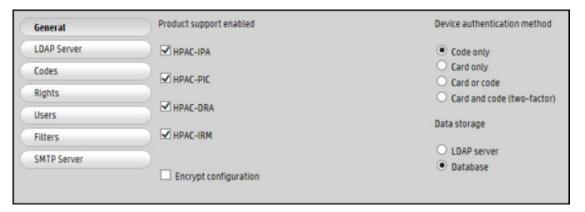


NOTE: Features may vary across devices. Refer to Section 5.7, Configuring devices.

Complete the following steps to set the AD-Authenticator parameters:

- 1. Click on the IRM tile, and go to the AD-Configurator tab.
- 2. On the General page, select the HP Access Control Agents that will be used. Each Agent provides different levels of user authentication and rights control. Place checkmarks next to the Agent products you are using.

3. If required, select to Encrypt configuration of the AD-Authenticator file. The configuration is stored in the web.config file. IIS will prevent the file from being viewed through an HTTP connection. This will also protect the passwords and other sensitive information.



5.2 Authentication methods

There are five different methods of authentication.

- Code authentication (PIN/PIC)
- Card authentication or Windows authentication
- Card and code (two-factor) authentication
- Card or Code
- Touch to Sign-in (with an Android smartphone with NFC support and the HP ePrint Enterprise app)
- NOTE: Please see Section 5.7, Configuring devices to see what methods are supported on each device type.

5.2.1 PIC authentication

Personal Identification Code (PIC) authentication is used to provide access to copy, fax, and scan capabilities. To utilize these functions, users enter a pre-determined personal authorization code using the device keypad. Codes can be stored in either SQL or AD.

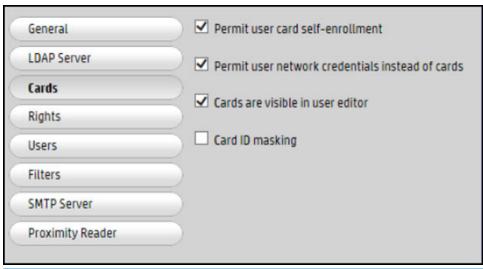
5.2.2 Card authentication

Users can present a proximity card reader to authenticate at the device. When storing the data in a SQL database, you can enable multiple cards so users can enroll more than one card.

5.2.3 Card and code (two–factor) Authentication

Two-factor authentication means that users will use their proximity badge and a PIN for an additional layer of security.

Go to the IRM tile > AD Authenticator and under device authentication choose Card + Code (two-factor). Click **Apply**.



NOTE:

- When using Card and Code, if the user enters their Windows credentials it will not prompt the user for a code.
- Enabling two-factor does not require re-configuration of the device.

5.2.4 Card or code authentication

At a device, if a user swipes their badge, it will assume card is the chosen option and the user will be logged in as per the normal proximity card option. If the badge is not recognized, then user enrollment will be activated as per normal. If a user presses the function requiring authentication, they will be prompted for a code.

NOTE:

- On HP S900 Series, when set to Card or Code, they will work like Card Only.
- When this option is chosen there is no option to use Windows credentials.

5.2.5 Touch to Authenticate

Prerequisites

- HP Mobile Print Accessory installed on supported devices
- HP AC authentication installed and configured
- Android smart phone with the HP ePrint Enterprise App and is NFC enabled

Complete the following steps:

- 1. In the HP ePrint Enterprise application on the mobile device open the application settings screen.
- 2. Touch HP Access Control.
- 3. Follow the wizard to provide the server address and your user credentials.
- 4. Present your mobile device with the ePrint Enterprise application open to the HP Mobile Print accessory on the print device.
- 5. The first time you present your smartphone it will prompt you to register (just like you would for a proximity card). The app will provide an unique ID through the NFC connection which will be used for authentication.

5.3 Enrollment options

HP AC offers two different options for storing user data:

- Active Directory
- SQL and Active Directory

Both options will always use Active Directory. The difference is where the data is stored. Stored metadata is used for identifying a user to an enrollment method (i.e. PIC or Proximity ID) and user rights assignment (i.e. ability to copy in color).

There are advantages to using either method.

Active Directory	SQL Storage		
Avoids an additional connection and dependency to a database during authentication	Additional to the AD query		
Requires write access to the selected attribute(s) in AD	Only requires read access to AD		
Multiple domains requires writing to an attribute in a global catalog is not supported (read-only)	Supports multiple domains in the same forest		
n/a	Supports Delegate/Group Printing or Alias		
One ID per use	One or more IDs per user		
	n/a		
AD is normally replicated across servers automatically	Requires connection to a central SQL database for authentication roaming		
	SQL replication is an option		
n/a	Registers last time of authentication		

5.4 Active Directory Authenticator

Use the HP Access Control (HP AC) Active Directory Authenticator to store HP Access Control (HP AC) code or badge ID and device feature access rights directly in AD.

The Active Directory Authenticator provides the following capabilities:

- A configuration utility used to tailor the Authenticator to your specific environment.
- A Web service to authenticate users at the device.
- The User Editor that allows a user's PIC and device feature rights to be reviewed and/or changed. This can also be accessed at http://<servername>AD-Authenticator/AD-User-Editor.aspx. See <u>Section 9.3, AD User</u> Editor
- The Group Manager that performs operations on an entire group of users. This can be used to set PIC and device feature rights for the entire group (of users). The members of each group are selected by an LDAP query. This can also be accessed at http://<Servername>AD-Authenticator/AD-Group-Manager.aspx. See Section 9.4, AD Group Manager
- A website that may be configured to allow users to view, email, change, or choose their authentication codes.
- An enrollment application to allow users to enroll their card at a PC. See <u>Section 8.4, HP Access Control</u> Card Enrollment application.

The Configuration Utility, User Editor, Group Manager, and Enrollment applications are implemented as password-protected Web pages for security reasons.



NOTE: To view the web pages with best results, it is recommended to have Internet Explorer 11 on the server.

5.4.1 Configure the AD-Authenticator

The AD-Authenticator is designed to operate with a minimum of configuration. The AD-Authenticator supports two methods of controlling user access to device features: individually by user, or by Active Directory Groups.

Prerequisites

Make sure the following information is available before beginning the AD-Authenticator configuration:

- Method to control user access to a device. It is possible to either control each user's rights individually or use existing Active Directory groups.
- If storing in AD: Names of the two AD attributes used to hold users' PIC or card and access rights. The administrator may use data that already exists in the Active Directory for user PIC. (For example, an employee number or phone extension.) In this case, the attribute can be designated as read-only and cannot be changed by the AD-Authenticator. When the administrator uses group (rather than individual) device feature control, the attribute containing user assigned groups also already exists in the Active Directory (as the **memberOf** attribute). The AD attributes need to be indexed in order to ensure there is no delay during the authentication process.
- The IP address or domain name of the AD server.
- A user account with "write" privileges to AD (must be a member of the Account Operators group, Domain admin group, or enterprise admin group, or have the account assigned the appropriate rights).
- SMTP configured. See Section 4.2.2.1, Set SMTP Server parameters.

NOTE:

- The AD-Authenticator package does not allow creation of new users, and does not permit modification of any AD attributes except the two dedicated for its use. It is not intended as a substitute or replacement for the standard AD user management tools.
- By default, the AD-Authenticator is configured for individual user rights control, and stores the PIC values in extensionAttribute14 and feature rights in extensionAttribute15. These attributes are added to the AD schema when Microsoft Exchange is installed. They are not used by Exchange itself, and are provided only for use by other products. If Microsoft Exchange is installed, these attributes may be available; otherwise, two different unused attributes must be selected, or the AD schema must be extended with two attributes explicitly for this purpose.
- AD-Authenticator is configured using a Web-based application the AD-Configurator. To view the AD-Configurator page do one of the following:
 - Launch the HP AC configuration utility. Click on the **IRM** tile and go to the **AD Configurator** tab. OR
 - Enter the following URL into your Web browser: http://localhost/AD-Authenticator/AD- Configurator.aspx

5.4.2 Authentication method and data storage options

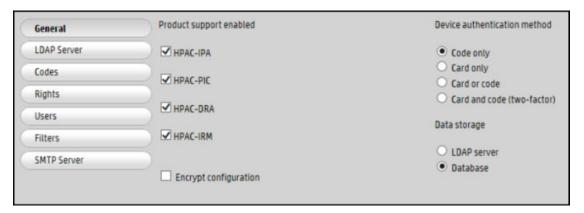
NOTE:

- If you are not currently logged into the server where the AD-Authenticator is installed, substitute its host name or IP address for localhost in the URL.
- If you want to view AD-Configurator in a 32-bit Web browser, you must use Internet Explorer, Mozilla Firefox, or Google Chrome. Other Web browsers are not supported.

Follow the steps below to set the AD-Authenticator General parameters.

- 1. In the IRM tile > AD Configurator, click **General** to select the General settings.
- 2. Select the HP Access Control (HP AC) Agent products you are using. Each Agent product provides different levels of user authentication and rights control. Place checkmarks next to the Agent products you are using. This will disable the setup options for any AD-Authenticator features that are not supported by your products.
- NOTE: You can select and configure support for features provided by HP Access Control (HP AC) Agent products that you have not purchased. The features themselves are enabled by the Agent licenses in the devices and will remain unavailable until licensed.
- 3. Select whether to encrypt the AD-Authenticator configuration file. The AD-Authenticator configuration is stored in its web site Web.config file. IIS prevents this file from being viewed through an HTTP connection. You can further protect the passwords and other sensitive information by checking the **Encrypt configuration** option.
- 4. Select one of the following Device authentication methods:
 - Select Card only if you want users to use a proximity card reader to authenticate at the printer or
 - Select **Code only** if you want users to use a Personal Identification Code (PIC) to authenticate at the printer or MFP.
 - Select **Card or Code** to have users authenticate with their card or a code
 - Select **Card + code (two-factor)** if you want users use a proximity card reader and a PIC to authenticate at the printer or MFP.
- 5. Select a **Data storage** option:
 - a. Select **LDAP Server** to store user card and code data on the LDAP server. Then select the Codes or Cards button (depending on the device authentication method) and enter in the LDAP attribute to store the user data.

b. Select **Database** to store user card and code data on the database. Click the **Multiple cards per user** checkbox to allow users to enroll multiple cards for authentication.



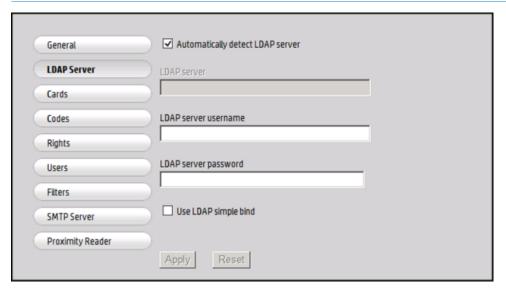
6. Click **Apply** to save any changes you have made.

5.4.3 Set LDAP Server parameters

This section describes how to set the AD-Authenticator LDAP server parameters. The AD-Authenticator makes an LDAP connection to your Active Directory to authenticate your users and determine their assigned rights.

MOTE:

- In a single domain environment it is recommended to leave this on auto-detect for automatic failover.
- If the HP AC server is not in the same domain as the users, do NOT select the option to **Automatically detect LDAP server** option.
- If you do not want user information to be exchanged between the HP AC server and the AD server to be communicated unsecurely you can force the connection to use LDAP which will use port 636. Append:636 to the LDAP server name. Requires valid certificates for communication between the AD server and the HP AC server.
- To configure the LDAP settings for a global catalog server enter GC://<domain name> and ensure that the LDAP username and password has read writes to the global catalog. Typically writing to a global catalog is not supported.



- 1. To select the LDAP server parameter page, click **LDAP Server** in the AD-Authenticator in the IRM tile.
- Set the LDAP Server address. The AD-Authenticator can usually detect your Active Directory server
 automatically when run on servers that are members of an Active Directory domain. Check Automatically
 detect LDAP server to enable this feature. To disable the feature, uncheck the box and enter the network
 name or IP address of your Active Directory server.
- 3. Specify the username and password to be used to access the Active Directory server. If you are using both a pre-existing LDAP attribute to store the user's PIC and Active Directory groups to manage user rights, this user needs read-only access to those Active Directory attributes. If the AD-Authenticator tools will be used to manage your user's PIC or to set individual rights, the user must have read-write access to the necessary Active Directory attributes. Enter the username in domain/username format.
- 4. Click **Apply** to save any changes you have made.

5.4.3.1 Configuring multiple domains

To enable multiple domain support, complete the following steps:

- 1. Open the \Program Files\HP\HP Access Control\AD-Authenticator folder and open the AD-Configurator.aspx file in Notepad.
- Find the line: var enableMultiDomainSupport = false;
- 3. Change the line to var enableMultiDomainSupport = true; to enable multi-domain support.
- Save the file.
- 5. Refresh any AD-Configurator browser or Configuration Utility window that was open.
- 6. Click the + icon tab at the top of the page to add a new domain. Enter the LDAP server information and click **Apply**.

NOTE:

- Go to AD Configurator > Users page and verify the Username Attribute. When looking for users in the AD
 User Editor, make sure the correct format is entered for the username. For example, if UserPrincipalName
 is used for the Username Attribute, make sure to look for the user in AD User Editor using
 UserPrincipalName format.
- To store jobs under the username using the correct Username Attribute, the "Change job identifier" settings must be set and the Enterprise Print Client must be installed on workstations. See the "Configure Print Job Identifier" section of this guide.
- Deleting a server from this page does not delete any stored data associated with that domain. Any card, code or rights data stored in LDAP will remain, as will any users stored in the database.
- All domains share the same settings on the "AD-Configurator/Users" page. For example, if you are
 configured for AD-Only, the cards/codes/rights must be stored in the same attributes in all active
 directories. A "real" LDAP Server and an Active Directory cannot be combined.

5.4.3.2 Testing Proximity Badges with the HP Common Card Reader

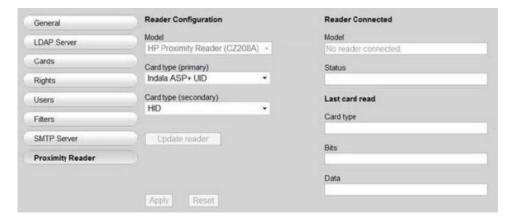
The default setting for proximity cards is HID/iClass. Depending on the card, this may have to change to support other/additional protocols. Additionally, it is sometimes necessary to adjust the way a proximity badge is read so that it can match existing values that may be stored in AD or SQL.

Prerequisites

- A PC connected to the same domain as the HP AC server
- A domain user account
- A card reader

To test Proximity badges with the HP common card reader, complete the following steps:

- 1. Connect the reader to the PC.
- 2. From Internet Explorer, enter/access the following URL: http://<servername>/AD-Authenticator/AD-Configurator.aspx where <servername> is the server where HP Access Control is installed.
- 3. If prompted, enter the network credentials to access the server.
- 4. Click **Proximity Reader b**utton (on left side of screen).
- 5. You can now change the reader type under Card type (primary) and Card type (secondary) if required.



- 6. The reader will automatically start scanning on the selected frequencies.
- 7. The values will be populated under the Last Card read section.

NOTE:

- You may be prompted to install an IE plugin which contains the driver for the card reader
- You cannot view the Proximity Reader page of the AD-Configurator from the Configuration Utility if you are using a 64-bit server, or from a 64-bit Web browser. The Proximity Reader page can only be viewed from the Configuration Utility on a 32-bit server or from a 32-bit Web browser.
- There are certain combinations of primary and secondary cards that will cause the reader to become unresponsive. For unique card types, please contact your HP representative for further investigation.

5.4.3.3 Card Masking

Card Masking is an administrative tool that allows you to change the way proximity card ID values are stored in Active Directory or the database when users enroll their cards. The card mask is saved in an XML file and stored on the HP AC server. This is so that when card masking is enabled, the mask is applied at the time the users enroll their cards.

NOTE:

- Do not enable card masking in a production environment, as it will cause the value being read to be changed, and therefore existing user's cards will be unrecognized and they will be forced to re-enroll.
- You cannot view the Proximity Reader page of the AD-Configurator from the Configuration Utility, if you are using a 64-bit server, or from a 64-bit Web browser. The Proximity Reader page can only be viewed from the Configuration Utility on a 32-bit server or from a 32-bit Web browser.

Prerequisites

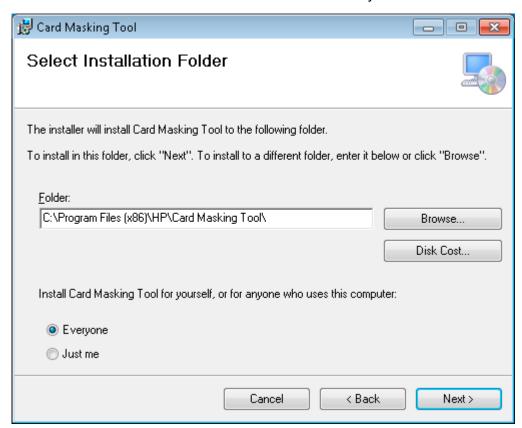
- Card reader
- Domain user account
- PC connected to the same domain as the HP Access Control server

To use the Card Masking feature, complete the following steps:

- Copy the Card Masking installation file to your local PC hard drive from \Program Files\HP\HP Access Control\client setup directory on the HP Access Control server.
- When the installer launches, click Next.



Select the installation **Folder** and choose whether to install for **Everyone** to use or **Just me**.



- Click **Next** to finish the installation. 4.
- Connect a card reader to the PC.
- 6. Open the **Card Masking Tool** via the shortcut created on the desktop.



Enter the name of the HP Access Control server in the AD-Authenticator server name field. Click Connect to connect to the server.



Click Scan. The card reader will beep once. Hold your card over the card reader. The reader will beep twice when the scan is completed.



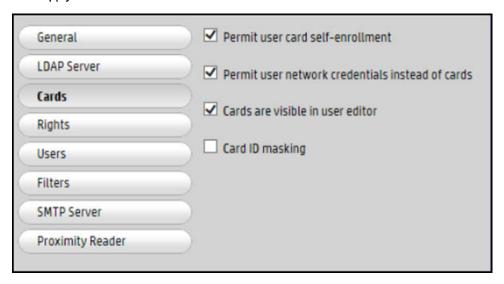
The following data displays:

- Reader: The card value read by HP Access Control. The first 6 digits include the card type and the decimal value of the card data bits. The remaining digits contain the card number.
- **RAW**: The card RAW number read by HP Access Control.
- **Type**: The card type value and card type name.
- Bits: The number of card data bits.
- **ID**: The masked card value.



- Modify any of the following parameters to change the masked card value:
 - **Leading Parity**: Strip this many bits from the most significant bits of the raw data. This happens before any FAC/ID processing.
 - Trailing Parity: Strip this many bits from the least significant bits of the raw data. This happens before any FAC/ID processing.
 - FAC Digits: If Fixed FAC/ID is enabled, this is the number of digits to use for the FAC. If Send FAC is not enabled, the FAC will not be sent ID Digits.
 - ID Digits: If Fixed FAC/ID is enabled, this is the number of digits to use for the ID. If Send ID is not enabled, the ID will not be sent ID Digits.
 - ID Bits: Decode this many bits as the ID. Use the remainder as the FAC. If Send ID is not set, this setting is ignored.
 - FAC/ID Delim: Output this character between the FAC and ID when Send FAC is enabled.
- 10. Select any of the following parameters to change the masked card value:

- **Send FAC**: Output the facility code. If **Send ID** is not set, this setting is ignored.
- **FAC Hex**: Output the facility code as a hexadecimal number.
- Fixed FAC/ID: Output a fixed number of digits for the FAC and ID. If more characters are needed, the output is leading zero padded. If fewer characters are specified that are in the FAC or ID, then the FAC or ID is truncated.
- Send ID: If set (Yes), the ID will be separated from the Facility Code using ID bits for the ID. If not set (No), the Facility Code will not be separated and all of the data will be considered ID independent of the number of ID bits.
- **ID Hex**: Output the ID in hex.
- Read Only Card Size: When enabled, only cards of Card Size bits are recognized by the reader.
- 64 Bit Math: When enabled, the reader performs 64 bit math on the FAC, ID or entire card. On some card readers this setting causes the reader to process 80 bits rather than 64. For Card Sizes where the ID or FAC can be greater than 32 bits. Enabling this option is recommended. Use of 32 bit math for data longer than 32 bits was handled by converting the most significant 32 bits and least significant 32 bits separately, and then padding the most significant digits with 10 zeros and then concatenating with least significant digits. For example, a card ID with 0x10379052B4 would be output as 160932205236 with 64 Bit Math disabled, and 69651681972 with 64 Bit Math enabled.
- **Invert Wiegand Data**: In some older Wiegand installations the Wiegand lines were reversed, resulting in inverted data. Due to backwards compatibility with older legacy readers, this is normally enabled.
- Reverse Wiegand Bytes: When enabled, data bytes are reversed before FAC/ID processing (after leading and trailing parity have been removed). This is mutually exclusive with Reverse Wiegand Bits.
- Reverse Wiegand Bits: When enabled, data bits are reversed before FAC/ID processing (after leading and trailing parity have been removed). This is mutually exclusive with Reverse Wiegand Bytes.
- 11. Click Save to save the DataDecodeDefaults.xml file to \Program Files\HP\HP Access Control\AD-Authenticator folder on the HP Access Control server.
- 12. On the HP Access Control server, in the IRM tile > AD-Configurator > Cards, select Card ID masking and click Apply.



5.4.4 Set Proximity Reader parameters

The Proximity Reader page allows you to configure the card reader parameters.

- NOTE: The Cards menu displays only if Card only or Card + code (two-factor) is selected on the General page. See Section 5.4.2, Authentication method and data storage options for more information.
- 🔆 TIP: If you want to view this page from a computer or workstation, instead of from the server, plug the reader into the computer or workstation and then open a Web browser. Enter the following, where "servername" is the name or IP address of the server containing the HP Access Control (HP AC) Configuration Utility:

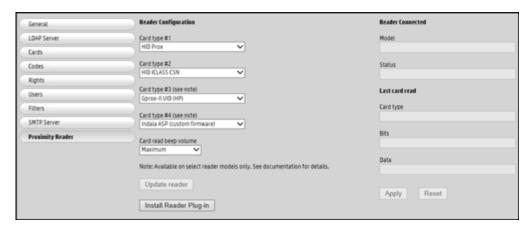
http://servername/ad-authenticator/ad-configurator.aspx

Viewing this page from Web browser requires the installation of an extension. If a window pops up, prompting you to download the extension, click **OK** to download and install.

This page allows you to use a computer or workstation to configure card readers to read specific card types, view status information about the card reader, and view information about a card if a card type is unknown.

Follow the steps below to set the Proximity Reader parameters.

Click the **Proximity Reader** button to go to the Proximity Reader parameter page.



- You can configure HP Common Card Readers or RFIDeas RDR-80583AKU card readers to read two different types of cards. The new HP HIP2 card readers can be configured to read up to four different card types. The following table contains card types which are supported:
 - NOTE: The HP HIP2 card reader provides additional card type and volume control information. The HIP2 reader is intended to function as a standard HP Common Card Reader in devices that have older in-printer agents installed. When used with in-printer agents older than version 20160509, the HP HIP2 reader supports two card types and the volume is not adjustable.

2Smart Key	Farpointe Data NXT UID	Indala ASP 26 Bit	KeyMate	RDR-6E8X Compatible
Advant CSN (Legic)	GProx-II UID	Indala ASP UID	MiFare CSN	RDR-6H8X Compatible
Awid	HID	Indala ASP+ UID	MiFare Ultralight CSN	RDR-6K8X Compatible
Cardax UID	HiTag 1 and 1S Primary	Infineon my-d CSN	Nexkey	RDR-6Z8X Compatible
Casi-Rusco	HiTag 2 Alternate	IoProx (Kantech)	Nexwatch	ReadyKey PRO UID
Deister UID	HiTag 2 and 1S Alternate	ISO 14443A CSN	NXP	Rosslare
DESFire CSN	HiTag 2 Primary (RDR-6H	ISO 15693 CSN	Phillips	Russwin UID
DIGITAG	Honeywell	I-tag CSN	Pyramid NXT UID	Secura Key -02

EM/Marin EM410x Primary/>	iClass CSN	Keri NXT UID	QuadraKey	Tag-It CSN (Texas Instruments)
Etag CSN (Secura Key)	I-Code CSN	Keri UID	Radio Key	

- Under Card type (primary), use the drop-down list to select a card type.
- Under Card type (secondary), use the drop-down list to select a second card type. 4.
- 5. If you are using HP HIP2 card readers, select a third and fourth card type from the drop-down menus.
- 6. Under the Card Read Beep Volume drop-down menu, select the volume of the beep sound when cards are presented at the reader.
 - NOTE: If you are using HP Common Card Readers or RFIDeas RDR-80583AKU card readers on HP FutureSmart or non-FutureSmart devices, the card beep volume can be set to OFF or Maximum only. If Minimum or Medium are selected, the Maximum setting will be used for HP Common Card Readers or RFIDeas RDR-80583AKU card readers.
- NOTE: The card reader volume level applies to all devices in the environment. The card reader volume cannot be adjusted for individual devices.
- NOTE: The highest volume of the HP HIP2 readers is very quiet and the lowest volume is virtually inaudible.
- NOTE: When the Card Read Beep Volume is set to OFF, the reader still beeps at full volume when it is connected, and beeps at the minimum volume when accessed by the solution.
- Do one of the following:
 - If you want to configure a card reader connected to the PC to read the selected card types, click the Install Reader Plug-in button to install the browser plug-in. This updates the connected card reader with the card type configuration, allowing you to use the card reader with any printer to read the selected card types. The plug-in works only with Internet Explorer and Firefox. After making changes, click the Update Reader button to configure the connected card reader.
 - If you want to configure your printers or MFPs to read the selected card types, click **Apply**. This applies the card type configuration to your printers or MFPs, allowing you to use any card reader to scan the selected card types.
- In the Reader Connected section, view the model name and status of the connected card reader.
- In the Last card read section, view information about the proximity card that was last used. If you want to view information about a specific card, scan the card and the page displays information about the scanned card.
- 10. Click **Apply** to save any changes.

5.4.5 Set Cards parameters

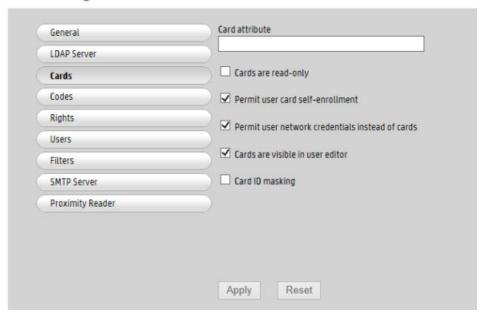
Prerequisites

- "Card Only" or "Card and Code" set in IRM tile > AD Configurator > General tab.
- Data storage set to LDAP Server or Database in the IRM tile > AD Configurator > General tab.

To set parameters for using proximity cards, complete the following steps:

Enter the name of the LDAP attribute to be used to contain your users' card values into the Cards attribute field. If storing in a database than this is not required.

AD Configurator AD User Editor DB User Editor AD Group Manager



- 2. Click the **Card attribute is read-only** checkbox to disable the AD-Authenticator utility's ability to change cards.
- 3. The AD-Authenticator User Editor provides the ability for authorized users to examine and change a user's card number. Uncheck the Cards visible in user editor check box to configure the User Editor so that cards may be changed (only to new random values, unless specified as read-only) and emailed to their associated users, but not viewed.
- 4. If you want users to be able to self-enroll than select **Permit user card self-enrollment**.
- 5. To allow for alternative authentication using Windows credentials, select **Permit user network credentials** instead of cards.
- 6. Select **Card ID masking** if you want Active Directory or the database to read the card ID number, instead of the card raw number, when a card is enrolled. See <u>Section 5.4.3.3</u>, <u>Card Masking</u>.
- 7. Click **Apply** to save any changes you have made.

MOTE:

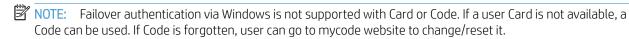
- The Cards menu displays only if "Card only" or "Card or code" or "card and code (two-factor) is selected as the storage option on the IRM tile > AD Configurator > General page.
- The Card attribute field displays only if LDAP server is selected as the data storage option on the General page.
- If enabling Card ID masking, any cards that were enrolled before Card ID masking was enabled needs to be re-enrolled.
- If your printing environment has multiple types of card readers it is recommended to enable card ID
 masking. This allows all cards to be read the same way.

5.4.6 Prevent Alternate Windows Authentication when using Card Only Authentication

In some environments, customers do not want users to enter network credentials at the device as an alternative method of authentication if the user forgets their card.

Prerequisites

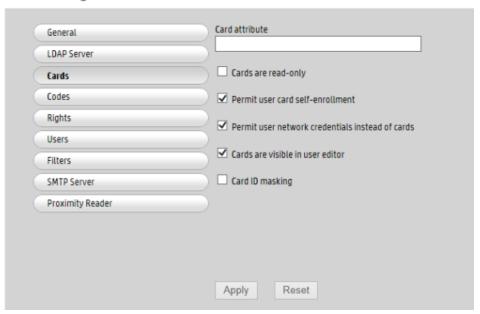
IRM tile > AD Configurator > General set to Cards



Set Card Parameters

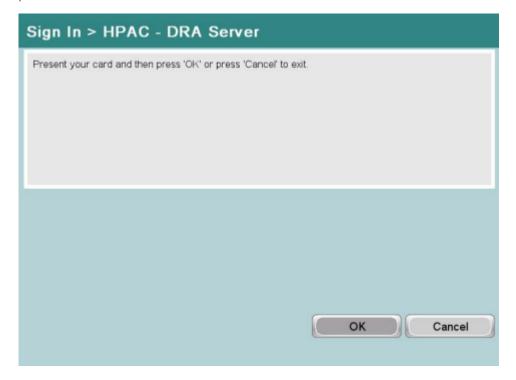
Go to the IRM tile > AD Configurator and select the **Cards** page.





Uncheck "Permit user network credentials instead of cards" and click **Apply**.

Press the **Pull Print** button on the device. You will be prompted to present your card with no option to provide network credentials.



5.4.7 Prevent User Enrollment at the Device

In some environments, customers do not want users to enroll their cards at the device as the card data may already exist in AD or SQL database.

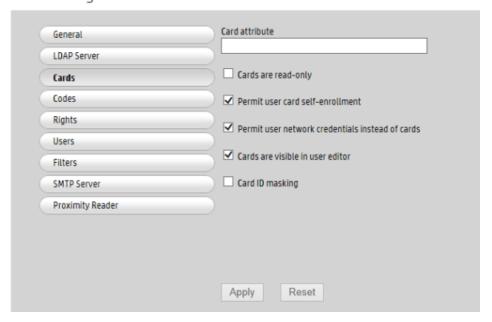
Prerequisites

IRM tile > AD Configurator > General set to Cards

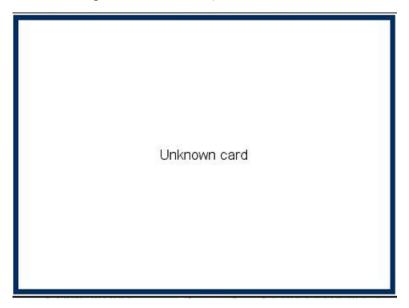
Set Card Parameters

1. Go to the IRM tile > AD Configurator and select the **Cards** page.

AD Configurator AD User Editor DB User Editor AD Group Manager



- 2. Unselect "Permit user network credentials instead of cards" and click Apply.
- The device will give an error with no option to enroll the card. 3.



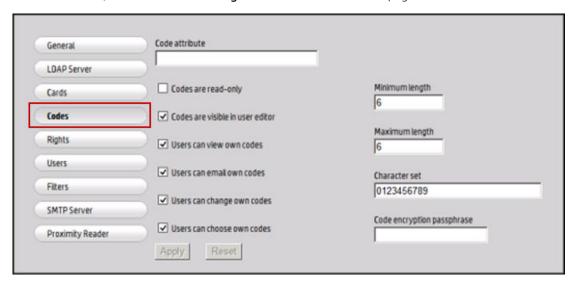
5.4.8 Code parameters when storing in Active Directory

The AD-Authenticator provides a number of options for managing user Codes. This section describes how to configure those options.

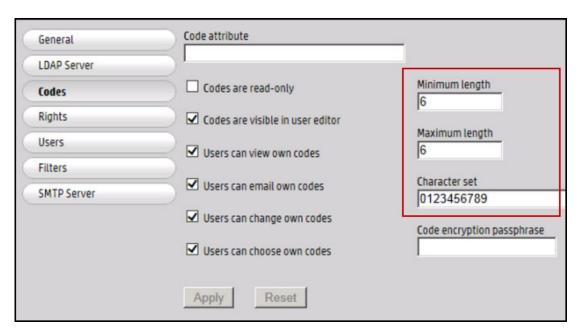
To set the Code parameters, complete the following steps:

Go to the IRM tile > AD Configurator tab and under the Device Authentication Method change to **Code**.

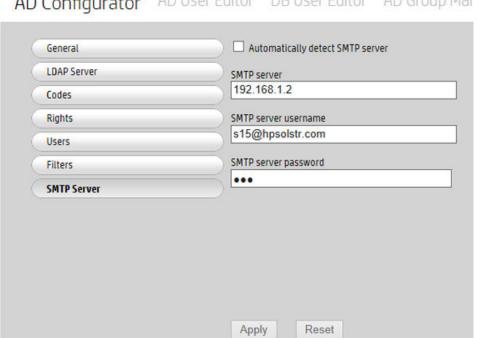
Go to the **IRM** tile, and select the **AD** configurator tab. Select the **Codes** page.



- If the code is to be stored in LDAP, as specified in the IRM tile>AD configurator tab>General section>Data Storage: LDAP Server, then you will need to enter the name of the attribute that the code will be stored in.
 - If the code already exists in the specified attribute (i.e. an employee number) then check the **Codes** are read-only box to prevent overwriting of codes. This will also disable all other options on the page when read-only is specified.
 - NOTE: Ensure the attribute is indexed to prevent any delays during authentication.
- Select the settings that meeting your organizations environment:
 - Codes are visible in user editor: Unchecking this will allow for codes to be changed (only to new random values, unless specified as read-only) and emailed to their associated users, but not viewed.
 - Users can view own codes: Allow users to view their code through the MyCode website (http:// <servername>AD-Authenticator/MyCode.aspx)
 - Users can email own codes: Send their active code to their email address (obtained from active directory lookup) through the MyCode website.
 - Users can change own codes: Allow users to change their codes to a new random value through the MvCode website.
 - Users can choose own codes: Allow users to choose their own code. The code must still meet the minimum and maximum length, as well as only allowed character set can be used.
- By default, code values generated by AD-Authenticator are exactly six numeric digits in length. You can change them to be shorter, longer, variable length, and/or change the character set from which they are made (for example, make them alphanumeric).
 - Enter the minimum length for generated codes in **Minimum length**. a.
 - Enter the maximum length for generated codes in **Maximum length**. b.
 - Enter all the characters that can be used for generating codes into the Character set field. By default, c. this field contains 0123456789 which allows the generation of full numeric codes. You can change it to any combination of alpha-numeric characters.



- By default, user codes are saved in clear text in Active Directory. If your codes have not been specified as read-only, you can cause all future codes to be encrypted by placing an encryption passphrase in the **Code** encryption passphrase field. Once you have specified an encryption passphrase, you should immediately use the **Group Manager** application to encrypt all codes saved previously.
- Click **Apply** to save any changes you have made. 7.
- Still in the AD-Configurator click on SMTP server and either select to Automatically detect SMTP server, or specify the server and enter a username and password that has access to the server.



AD Configurator AD User Editor DB User Editor AD Group Mar

NOTE:

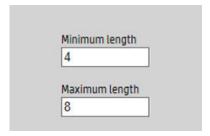
- Do not directly change the code encryption passphrase from one value to another. This will cause an irrecoverable situation where some of your codes are encrypted using the old passphrase and some with the new. Instead, with the old passphrase still in place, use the Group Manager application to decrypt all existing codes, use the **Configuration** application to change the passphrase, and then use the **Group Manager** application to encrypt the codes with the new passphrase.
- If PIC values contain alphabetic characters, it is important to know that, because of the way LDAP queries work, the alphabetic comparisons of PIC values are performed in a case-insensitive manner.
- To assign codes to individuals or groups please see Section 9.3, AD User Editor and Section 9.4, AD Group Manager.

5.4.9 Code Parameters when storing in SQL

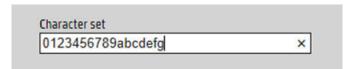
- To email codes to users the SMTP server must be configured. See Section 4.2.2.1, Set SMTP Server parameters.
- For assigning codes to individuals review Section 9.3, AD User Editor or Section 9.6, DB User Editor.
- To assign codes to groups review Section 9.4, AD Group Manager.
- Code only, card or code, or card and code (two factor) set in the IRM tile > AD Configurator > General page.

Complete the following steps:

In the IRM tile > AD Authenticator > Codes page select the minimum and maximum length for the code (i.e. in the screenshot below the minimum length the code can be is 4 and the maximum length can be 8).



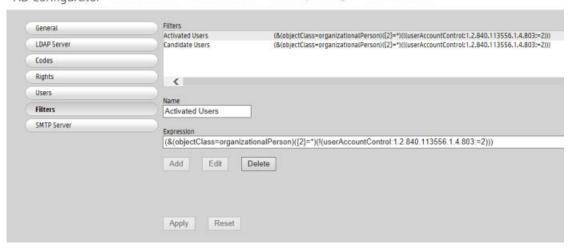
Enter the character set that can be used when generating a code. These values can be numeric or alpha characters.



To encrypt the codes follow the steps in 5.8.4 Encrypt or decrypt users PICs.

Go to the Filters button and click on the Activated users filter.

AD Configurator AD User Editor DB User Editor AD Group Manager User List Editor

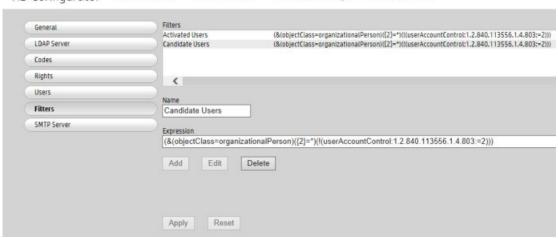


5. Delete the following text:

$$(\{0\}=*)(\{1\}=*)$$

Click **Edit** and **Apply**.

AD Configurator AD User Editor DB User Editor AD Group Manager User List Editor



- 7. Click Candidate users.
- 8. Delete the following text:

$$(|(!(\{0\}=*))(!(\{1\}=*)))$$

Click Edit and Apply.

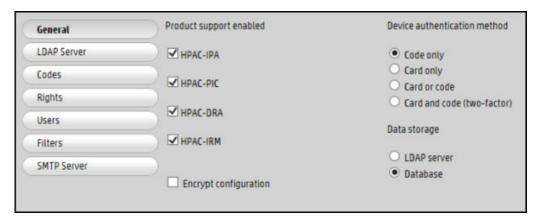
NOTE:

- Activated users filter will select all users who have an email address and have been assigned previously a code and access rights.
- Candidate users selects all users who have an email address but have not yet been assigned a code or access rights.
- The AD Authenticator will ensure that an email address is included in both filters to ensure that only accounts that are used by people (and not system accounts) are included and that the HP AC server can email users their assigned code and rights.

5.5 Database storage

To configure HP Access Control to store user enrollment data (i.e. card, code, or card+code), select **Database** as the storage method.

- 1. Launch the HP Access Control Configuration Utility.
- 2. Select the IRM tile. Under the AD configuration tab, click the **General** button.
- Under Data storage, select Database. If you want to allow users to enroll multiple cards to be associated with their Windows login, select Multiple cards per user.



Click Apply.

5.5.1 Common SQL enrollment database

In a multiserver environment, a common enrollment database is required so users do not have to enroll on each HP Access Control server.

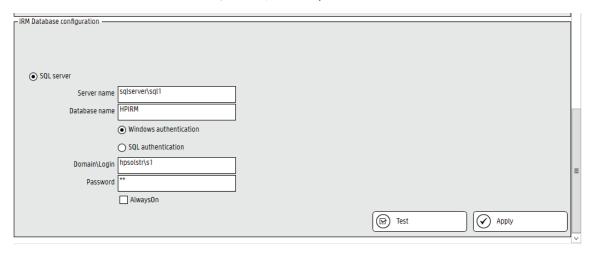
Prerequisites

- The SQL server must be configured to accept mixed mode authentication and to have a SQL user previously created with dbcreater rights.
- Database is selected as the data storage method (IRM tile > AD Configurator tab > General page)

MOTE:

- SQL enrollment is required if using delegate/alias printing.
- The login account must have enough rights on the SQL server to create and modify databases (dbcreator or sysadmin)
- SQL Server can be installed on the local server or a remote server.

- Go to Settings tile > Database tab.
- 2. To connect or create a database on a SQL server, select **SQL Server**.



- Enter the server name and instance (if required) using the server name or IP address.
- 4. Enter a name to identify the new database. This can be anything (i.e. HPIRM).
- 5. Select either Windows authentication or SQL authentication.
- Enter the login credentials of an account with enough rights on the SQL server to create and modify 6. databases.
- Once the database is created, you will see a message in the message pane.

```
1/7/2015 4:16:07 PM - Save successful
1/7/2015 4:57:28 PM - Database connection ok
1/7/2015 4:58:46 PM - Database connection ok
1/7/2015 4:58:46 PM - Login ok
1/7/2015 4:58:46 PM - Database created.
```

IMPORTANT:

- To create a new database, you must have the *sysadmin* or *dbcreator* role for the credentials entered. To make changes to the IRM database, the credentials entered must be a Login in SQL Server that is either a member of the db_owner database role or a member of the db_datareader and db_datawriter database roles for the IRM database. The db_owner database role can perform all configuration and maintenance activities on the database. The db_datareader database role can run a SELECT statement against any table or view in the database. The db_datawriter database role can add, delete, or change data in all user tables.
- If the Login is a member of the db_datareader and db_datawriter database roles, Execute permissions (in database Properties) must be granted to the user.

5.5.2 Import to IRM database

The ImportUser tool allows administrators to import user name/card/code/rights/alias information into a SQL Server database, or export data from SQL to a CSV file. This tool is intended to be used with HP AC 14.1 or newer.

Below is a sample CSV file. To import, the CSV file must contain a header with fixed values and at least two columns: a user column and a card or code column. Other columns, such as rights or alias, are optional.

	Α	В	С	D	E	
1	user	alias	card	code	rights	
2	user1	user1A	1111	1234	111111111	
3	user2	user2A	2222	2345	111111111	
4	user3	user3A	3333	3456	111111111	
5	user4	user4A	4444	4567	111111111	
6						



NOTE: The ImportUser.exe file will get the database connection from the AD-Authenticator web service and read if the server is configured for Code, Card, or Card + Code authentication. The file will also check if the CSV file contains the appropriate columns.

Running the ImportUser.exe file with no parameters will display the following optional parameters:

- -multicard enable multicard support
- -update update existing users card and/or code
- -deleteuser delete all users and alias from the database before processing CSV
- -deletealias delete all alias from the database before processing CSV
- -export export the configured database to a CSV file
- If Multiple cards per user is enabled on the server (in the HP AC admin console > IRM > AD Configurator), the parameter –multicard must be entered in the command line.

NOTE:

- Optional parameters do not need to be entered in a specific order.
- If the ImportUser.exe file is not run on the same server as the AD-Authenticator web service, the ImportUser.exe.config file (|program files\HP\HP Access Cotrol\client setup\ must be edited to add the correct server name. Open the ImportUser.exe.config file and edit the <endpoint address="http:// localhost/ad-authenticator/ad-authenticator.asmx" line, where localhost is the name of the server containing AD-Authenticator.
- If Multiple cards per user is enabled on the server (in the HP AC admin console > IRM > AD Configurator), the parameter –multicard must be entered in the command line.

5.5.3 Importing data

To import data into a SQL Server database, perform the following steps:

- Navigate to \Program Files\HP\HP Access Control\Client setup from a command prompt.
- You can check that the users have been imported by going to the IRM tile > DB User Editor tab. Click Search/ Refresh.



NOTE: You may have to change the grid page size to view the entries.

For example, the following command line is valid:

ImportUser.exe users.csv -update -deleteuser -deletealias -multicard

5.5.4 Exporting data

To export data from a SQL Server database to a CSV file, perform the following:

- Open a command prompt and navigate to \Program Files\HP\HP Access Control\client setup. 1.
- 2. Type importuser.exe c:\<path to where the file will be stored\<filename> - export (i.e. importuser.exe c: \temp\users.csv - export.<insert pic export users>.
- 3. The CSV file will be created and placed in the specified directory.

For example, the following command line is valid:

ImportUser.exe c:\users.csv -export



NOTE: The exported CSV file can also be imported. For example, if you want to switch from SQL CE to SQL Server and avoid re-enrollment, export the data to a CSV file from SQL CE, change the IRM database to use SQL Server (go to the HP AC admin console > Settings > Database > IRM Database Configuration), and then import the same CSV file into SOL Server.

5.6 Authorization

AD-Authenticator can be used to manage authorization to access walk-up functions of the print device.

See <u>Section 5.7</u>, <u>Configuring devices</u> to see what features are supported on print devices.

The AD-Authenticator provides two different methods of rights control:

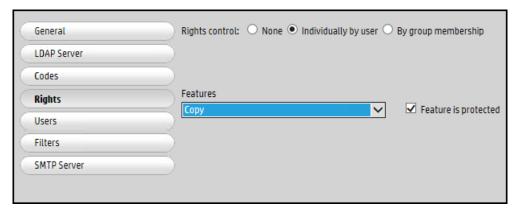
- Individual rights control: This method allows you to choose exactly which rights each user has.
- **Group rights control**: This is a batch-control method, based on users' membership in pre-defined Active Directory Groups. This method is ideal when your Active Directory has been populated with groups that represent a user's role in your organization and that role maps directly to the device functions its users should be permitted to use.

You will need to determine which rights-control method is appropriate for your organization before continuing to complete this section.

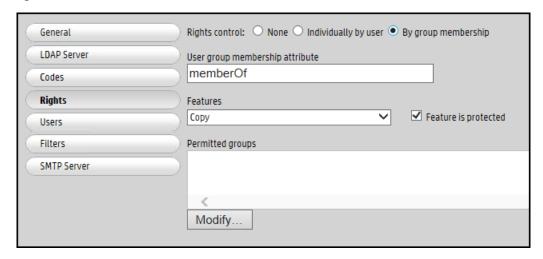
5.6.1 Configuring individual rights control

This section describes the procedure for configuring AD-Authenticator to control rights for an individual user.

- In the IRM tile, click **Rights** on the AD Configurator tab to select the rights parameter page. 1.
- 2. Select Individually by user.



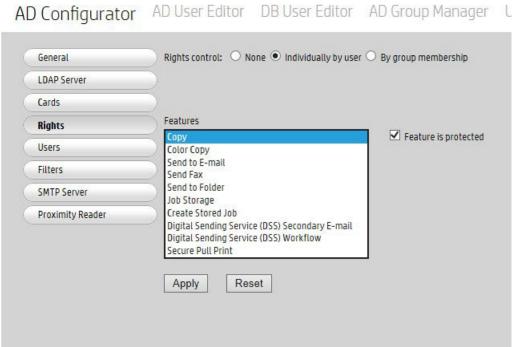
If you selected LDAP as the data storage (IRM tile > AD Configurator > General), then the User rights attribute field displays. Enter the name of the LDAP attribute to be used to contain your users' assigned rights.



- Complete the following process for each device feature listed in the Features drop-down box:
 - Select a device feature in the Features drop-down box.

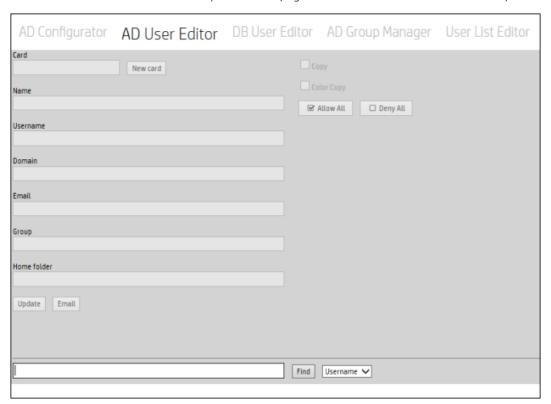
Manager. See Section 9.3.2, Change a user's device feature rights.

b. Select **Feature** is **protected** if the feature should only be available to specific users. Clear the box to allow all users to access the feature. All features are protected by default.

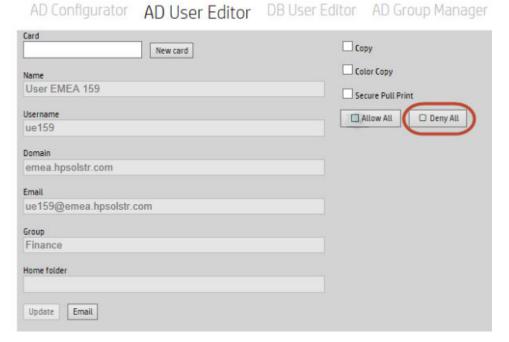


The specific users who can access this feature will be specified later using either the User Editor or Group

5. Click **Apply**. Browse to the AD User editor in the top menu. The page will now show the functions that are protected.

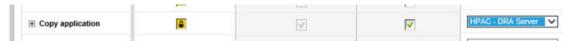


- Search for the user by entering the username, email, or * and click **Find**. 7.
- 8. Select the functions you want to restrict the user from accessing. You can select them individually or select Deny all.



Click **Update**.

10. In the device's EWS go to Security > Access Control and ensure the authentication method is set to HPAC-DRA or HPAC-IRM. Ensure the guest user is locked out (it will show a lock icon). Click **Apply**.



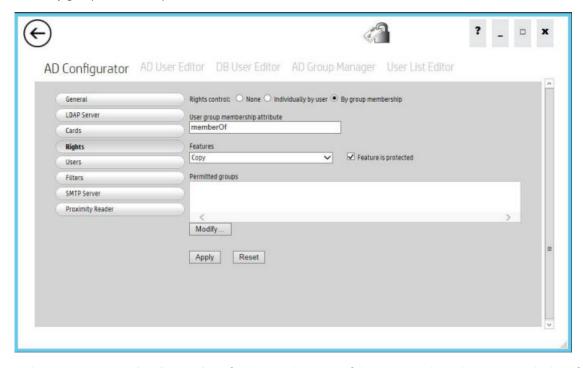
11. At the print device, when a user tries to access a function that they are not permitted to use, they will receive a message (message may very depending on device).



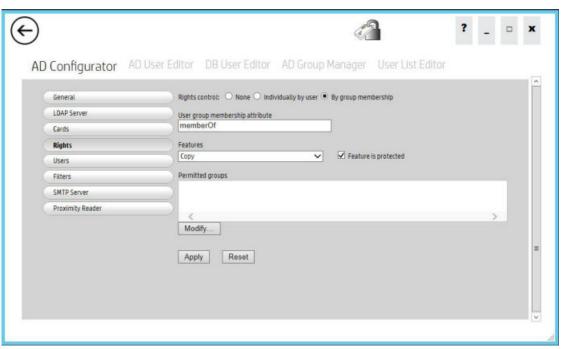
5.6.2 Configuring group rights control

This section describes the procedure for configuring AD-Authenticator to control user rights using Active Directory groups.

- In the IRM tile in the AD Configurator tab, click the Rights tab to select the rights parameter page. 1.
- Select By group membership.



In the User group membership attribute field, enter the name of the LDAP attribute that contains the list of groups your users are members of.



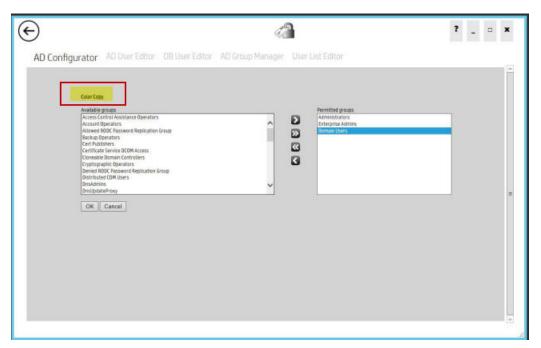
NOTE:

- The default memberOf value is correct for most Active Directory installations.
- Ensure the field entered is indexed to avoid authentication delays.
- Complete the following process for each device feature listed in the Features drop-down box: 4.
 - Select a device feature in the Features drop-down box. a.
 - b. Select Feature is protected if the feature should only be available to specific users. Clear the box to allow all users to access the feature.
 - If you have protected the feature, click Modify. A page will appear that allows you to select the groups c. in your Active Directory that will have access to this device feature.

d. The feature you are modifying is listed at the top of the page. Select groups from the **Available groups** pane and move them to the **Permitted groups** pane to allow members of those groups access to the feature. Select groups by clicking on them (user shift-click and control-click to select multiple groups at once). Move the groups by clicking the arrow buttons.

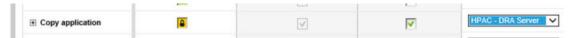


When all groups that should be allowed access to this feature are listed in the **Permitted groups** pane, e. click OK.



- Repeat this process for each device function you wish to protect.
- Once you have completed the protection settings for each device feature, press Apply to save the changes you have made.

In the device EWS go to Security > Access Control and select either HPAC-DRA server or HPAC-IRM server for the feature. Ensure the guest user is locked out and click **Apply**.

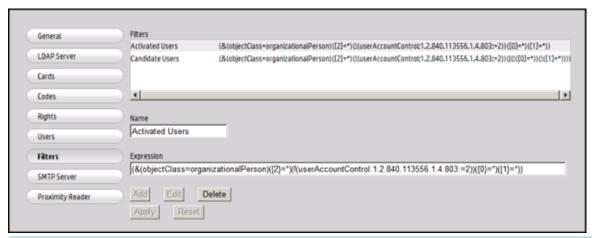


At the device control panel, authenticate and try to use a feature that is protected. A message will appear advising the user that access is denied.



5.6.3 Set Filter parameters

The AD-Authenticator Group Manager operates on sets of users selected by pre-defined LDAP queries (filters). The filters can be used, for example, to assign different default individual access rights to different groups of users. This section provides instructions for defining those filters.



NOTE: If you selected to use Database storage, the {0} LDAP attribute for codes and the {1} LDAP attribute for rights no longer apply to filters. The {0} and {1} macro values must be deleted from the Activated Users filter expression and the Candidate Users filter expression in order for the AD Group Manager to correctly use the filters.

· TIP:

- Three special macro values are available when defining the LDAP filters. {0} will be replaced with the LDAP attribute name configured to hold the AD-Authenticator code. {1} will be replaced with the user rights attribute name. {2} will be replaced with the email attribute name. These macros allow the default filters to be appropriate for many installations even if the LDAP attribute names have been changed.
- Two filters are defined by default. The Activated Users filter selects all users who have an email address and have been assigned both a code and access rights. This filter is intended to select all users who are currently setup to use AD authentication. The Candidate Users filter selects all users who have an email address but have not yet been assigned a code or access rights. This filter is intended to select users for the Group Manager to assign initial codes and default access rights. The test for an email address is included both to help to filter out user accounts that are not used by people (e.g. defined only for system use) and to insure the group manager can email those users their assigned code and rights.

Use the following steps to define or change the LDAP filters:

- Click **Filters** button in the IRM tile >AD Configurator tab to select the filter parameter page.
- 2. The filters currently defined for use will be displayed under the Filters heading.
- 3. Three operations are available:
 - Add a new filter by entering its Name and LDAP guery Expression and then click Add.
 - Edit an expression by clicking it, changing its LDAP query Expression, and then click Edit. b.
 - Click the **Activated Users** filter. Activated users will select all users who have an email address and have been previously assigned a code and/or access rights. In the Expression field, delete the following text:

```
(\{0\}=*)(\{1\}=*)
```

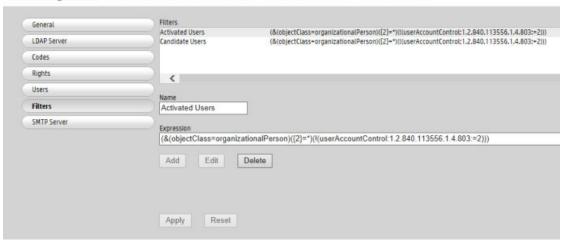
Click the Candidate Users filter. Candidate users selects all users who have an email address but have not yet been assigned a code and/or user access rights. In the Expression field, delete the following text:

```
(|(!({0})=*))(!({1}=*))
```

The Expression field of the Activated Users filter and the Candidate Users filter must display the following:

```
(&(objectClass=organizationalPerson)({2}=*)(!
(userAccountControl: 1.2.840.113556.1.4.803:=2)))
```





- Delete an expression by clicking it and then click **Delete**.
- When the filters are defined correctly, click **Apply** to save any changes you have made.

5.7 Configuring devices

In order to allow users to authenticate on a device, the device must be configured for authentication from the HP AC Configuration utility.

Prerequisites

- HP Access Control Agent must be installed on the server.
- The correct PRN installation file displays in the Installation file field in the **Settings** tile > **Agent** tab.
- A device administrator password is set on the device and matches the device administrator name and password in the **Settings** tile > **Device** tab, and the **IRM** tile > **AD Configuration** tab > **General** page.
- HP AC IRM is configured. See Authentication.
- Certificate installed and configured.
- HTTPS is required for communication on the web server and with all printers.
- Communication to the device exists (ping hostname/address) and is defined in DNS for reverse lookups.
- Device is listed as a supported device.
- Device is running the correct firmware.
- If you chose to use the TCPIP/IPPS protocol in the HP AC configuration tool > Settings tile > SPP Express or SPP Enterprise tab, make sure IPPS-SSL is enabled on the device. Go to the device web page > Security Settings > SSL Settings. In the Setting of SSL section, make sure IPP-SSL is set to Enable. Click **Submit**.
- If the authentication method is set to card or code in the IRM tile>AD Configurator > General page the device will function as if card only has been selected.

5.7.1 HP Multifunction devices

Supported Features

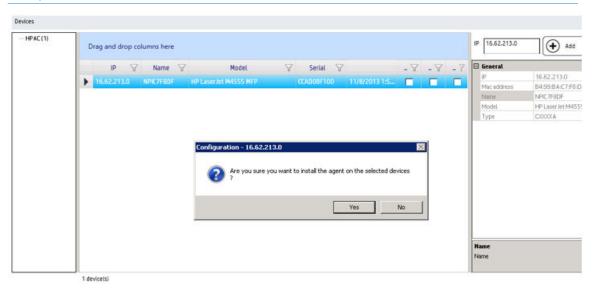
- Secure Pull Printing
- Authentication
 - Card or Windows Authentication
 - Card+Code (two-factor)
 - PIC
 - Card or Code
- Authorization for device functions
- Job Accounting
 - Quota
 - In-printer tracking
- Enrollment

Complete the following steps:

- In the HP AC configuration utility, go to the **Devices** tile and do one of the following:
 - a. Select the device from the device list.
 - b. Scan for devices on the network.
 - Enter the IP address of the device. C.

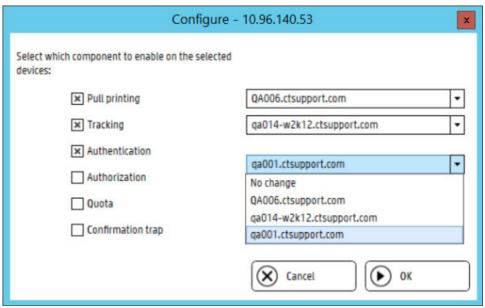
See Section 4.2.1, Adding devices.

- When reconfiguring the device(s), place an X in a component checkbox to resend the configuration file. Place a / in a component checkbox to not resend the configuration file and leave the current configuration status as is. Clear a component checkbox to disable the component on the device.
- Click **Install** to send the installation file to the device if this is a new device.
 - NOTE: The device may reboot during the installation process. Please wait for the device to return to the "Ready" state.



Select the device from the device list and click **Configure**.

In the Configure window, select **Authentication** and/or **Authorization**. Click **OK**.



NOTE:

- When configuring HP AC there may be a requirement to set the device to look at multiple IIS servers. When multiple IIS servers are in the Settings > IIS area, then the option to configure for a different IIS server will appear for the Authentication/Authorization options in the Devices > Configuration window. The Authentication and Authorization options must be configured to the same server.
- When using multiple IIS servers ensure that the server certificates are configured properly. Refer to Section 4.2.4.3, Creating certificates in a multi-server installation.
- Configuration will be complete in about 30 seconds. Configuration results will appear in the message pane.



Go to the device EWS to set the authentication method at the device.

FutureSmart devices

For FutureSmart devices, go to **Security** > **Access Control** page of the EWS. Click **Access Control (HPAC IRM)** in the left pane, and select Enabled check box for the required authentication method.



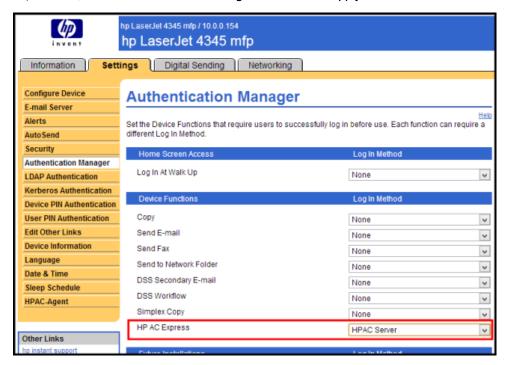
Click Access Control (in left pane). Scroll down to HP AC Secure Pull Print and choose the authenticator (I.e. HPAC – IRM Server). Set the HP AC authentication method for each device function to be controlled by HP Access Control.



Set the lock icon in the Device Guest column for the chosen options.

Non-FutureSmart devices

For non-FutureSmart devices, go to Settings > Authentication Manager page of the EWS. In the HP AC Express row, select **HPAC Server** as the **Log In Method**. Click **Apply**.



5.7.2 HP single-function printers

Supported features

- Secure Pull Printing
- Authentication
 - Card or Code or Windows authentication
 - Card+Code (two-factor)
 - PIC
 - Card or Code (on FutureSmart devices with a 4.3" display)
- Job Accounting
 - Quota
 - In-printer tracking
- Enrollment
- NOTE: HP Non-FutureSmart single-function devices only support card authentication.
- NOTE: Enrollment and Windows Authentication only available on FutureSmart devices with 4.3" display.

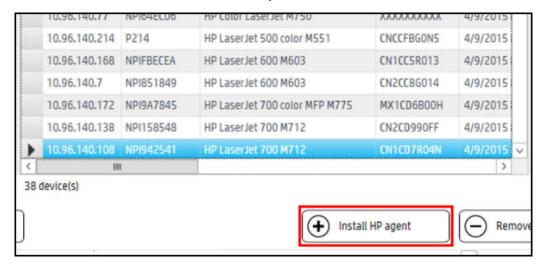
Complete the following steps:

In the **Devices** tile, select the device from the device list if this is a new device and do one of the following:

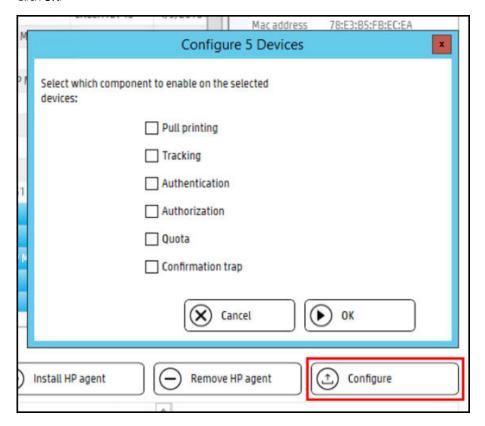
- Select the device from the device list.
- Scan for devices on the network.
- Enter the IP address of the device.

See Section 4.2.1, Adding devices.

Click **Install** to send the installation file to the device. The device may reboot during the installation process. Please wait for the device to return to the "Ready" state.



Select the device from the device list, then click Configure. In the Configure window, select Authentication. Click OK.



NOTE:

- When configuring HP AC there may be a requirement to set the device to look at multiple IIS servers. When multiple IIS servers are in the Settings > IIS area, then the option to configure for a different IIS server will appear for the Authentication/Authorization options in the Devices > Configuration window. The Authentication and Authorization options must be configured to the same server.
- When using multiple IIS servers ensure that the server certificates are configured properly. Refer to Section 4.2.4.3, Creating certificates in a multi-server installation.

5.7.3 HP Officejet Pro printers

OfficeJet Pro devices do not need an agent installed. This is because the OfficeJet's configuration is stored on the HP AC server and not on the device.

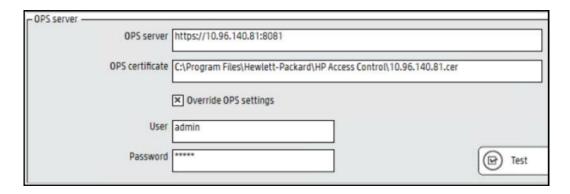
Supported features

- Secure Pull Printing
- Authentication
 - Card or Code or Windows Authentication
 - Card+Code (two-factor)
 - PIC
 - Card or Code
- Authorization for device functions
- Job Accounting
 - Printer Server tracking
 - Print tracking (with "Enable Tracking of Printed Jobs" enabled)
- Enrollment

Prerequisites

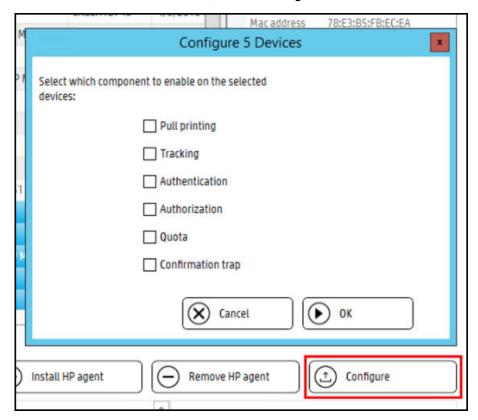
For OfficeJet Pro devices, ensure that the following additional prerequisites are enabled:

- Make sure Rights are enabled in IRM.
- Agent and Secure Pull Print Express/Secure Pull Print Enterprise must be installed on the server.
- Make sure the correct OPS certificate or customer certificate displays in the Certificate field in Settings tile > **Device** tab.
- HTTP activation needs to be enabled on the server (.NET 3.5.1)
- Ensure the correct username and password is entered (that was specified during the installation of the OPS server). If the password needs to be changed, please see Section 15.18, Reinstalling HP OPS
- If the device was previously configured on a different server, you must enable the following setting to be able to configure the settings from the new server:
 - Go to the **Settings** tile. a.
 - b. Under the **Device** tab, check **Override OPS settings**.
 - c. Click **Test** and **Apply**.



Complete the following steps:

Select the device from the device list, then click **Configure**.



- In the Configure window, select Authentication and Authorization to enable IRM authentication and device rights.
- 3. Click OK.

5.7.4 HP PageWide Pro printers

Supported Features

- Secure Pull Printing
- Authentication

- Card or Windows authentication
- Card or code
- Card and code (two factor)
- PIN/PIC
- Authorization for device functions
- Enrollment
- Job accounting
 - Print server tracking
 - Pull print tracking (via server)
 - Glass activity tracking

Prerequisites

- Device firmware is 1629F (VR 1.2 release) or higher
- PageWide Pro will use OPS only if the firmware requires OPS and will prompt for the installation files
- User database/LDAP/Active Directory is properly configured
- Rights are properly configured in the IRM tile if authorization is required
- Agent and Secure Pull Print Express/Secure Pull Print Enterprise are installed and configured
- HTTP activation is enabled on the server (.NET 3.5.1)
- NOTE: The following is currently unsupported:
 - Quota for glass activity
 - Allocation
 - Local list authentication

5.7.5 Configure the device

Authorization controls access to device features by individual user or through AD groups. Before the device is configured the server must be configured for authorization (rights management).

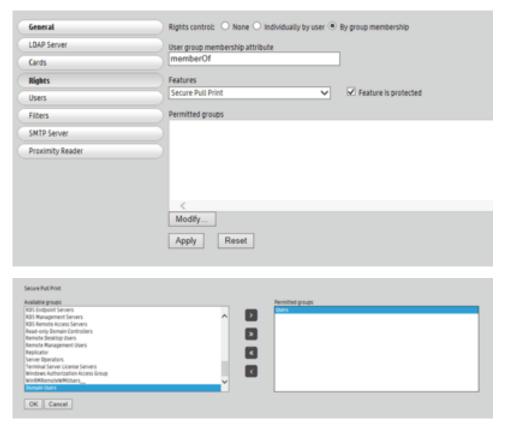
Rights Management Setup

When a device is configured with OPA, all device functions are managed by IRM. This means that authentication changes for a specific feature are made within IRM. Rights can be setup individually by user or by group membership. For most customers configuration will be done by group membership, as configuring rights individually can be a time consuming administrative task with a large number of users to manage.

Rights control by group membership

Go to the IRM tile > AD Configurator > Rights and select By group membership. When using groups instead of individuals, the attribute containing user assigned groups already exist in AD as the member Of attribue. Select the desired feature (such as copy) and verify "Feature is protected" checkbox is selected, and click Modify.

Select **Domain Users** and click the right arrow to move it to the Permitted group's box. Click **OK**.



Click Apply.

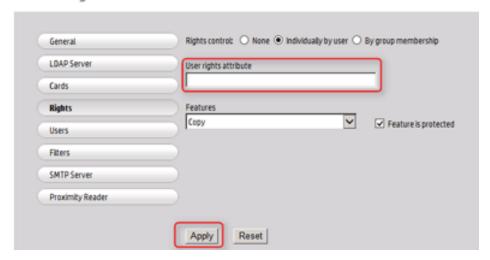
NOTE:

- To require authentication for a specific device feature, make sure the Feature is protected checkbox is selected in the IRM > AD Configurator > Rights page. When the Feature is protected checkbox is not selected, the feature will not require authentication at the device control panel.
- The previous steps must be completed for each feature individually.
- This setup cannot be completed through the device EWS or other tools, such as HP Web Jetadmin.

Rights control by individual user

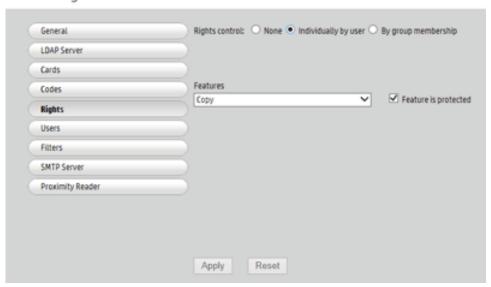
Go the the IRM tile > AD Configurator > Rights and select **Individually by user**. If storing user details in AD, then enter the AD attribute that the user's rights will be stored in. Make sure this attribute has write permissions and that it is indexed to ensure there are no delays in authentication. If storing in SQL, then this field does not appear.

AD Configurator AD User Editor DB User Editor AD Group Manager User L

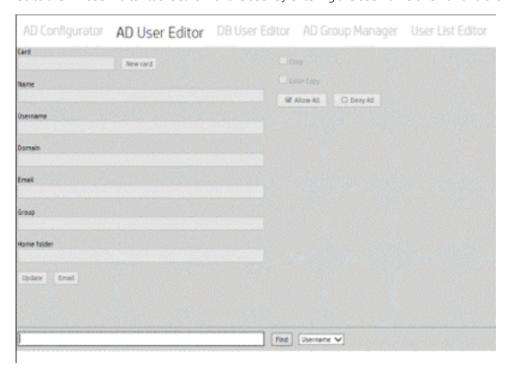


Select the desired feature (such as "copy") and verify that the **Feature is protected** checkbox is selected. Click on **Apply**.

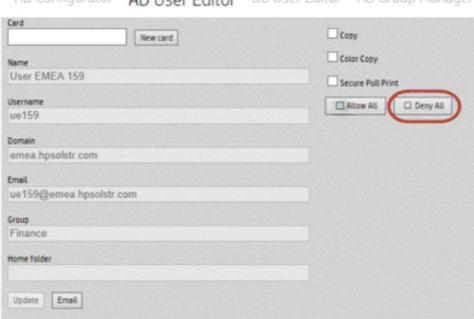
AD Configurator AD User Editor DB User Editor AD Group Manager User List



Go to the AD User Editor tab. Search for the user by entering the username or email and click Find.



Select functions to restrict the user from accessing. Select individually, or select **Deny All**. Click **Update**.



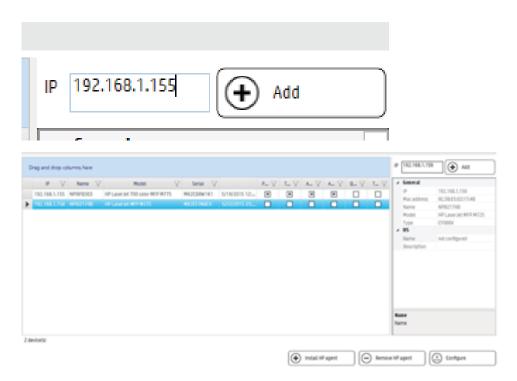
AD Configurator AD User Editor DB User Editor AD Group Manager

NOTE: To change a user's device feature rights using AD Group Manager, refer to Section "9.3.2 Change a user's device feature rights" in the HP AC Administrator Guide.

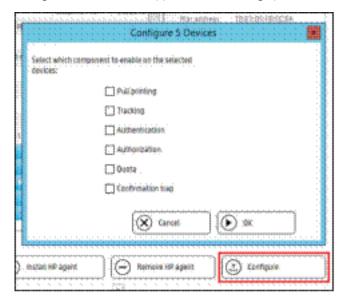
Configuring devices

To configure the device, complete the following steps:

In the **device tile** enter the printer IP or hostname into the IP field and click **Add**.



- 2. Select the device from the list and click **Configure**.
- Select **Authorization** and **Authentication** and click **OK**. Configuration will complete in about 30 seconds. Configuration results will appear in the message panel.



5.7.6 XT devices

The XT device is an external device with an attached card reader that allows for Pull Printing at any printer or multifunction device.

XT boxes provide no tracking capabilities. If print tracking is required you will need to configure Pull Print tracking or print server tracking.

Supported features

- Secure Pull Printing
- Job Accounting
 - Print server tracking only
 - Print tracking (with Enable Tracking of Printed Jobs enabled)

Prerequisites

For XT devices, ensure that the following additional prerequisites are enabled:

- Make sure the XT device is connected to a printer and to the network.
- If your server has a firewall, make sure TCP 2000 is open to send configuration files.
- If your server has a firewall, make sure UDP 11000 port is open for device discovery.
- Make sure the IRM authentication method is set to Card Only in the IRM tile > AD Configurator > General section..
- Make sure the IRM Proximity Reader settings and Card settings are correct.
- Make sure Card ID masking is enabled.



Complete the following steps:

- Select the XT device from the device list, then click **Configure**.
- In the Configure window, select **Pull printing**. Click **OK**. 2.
- The device reboots and then beeps five times, indicating the device is configured.

5.7.7 HP S900 series devices

Supported features

- Secure Pull Print
- Authentication
 - Card or Windows
 - Card or Code
 - Card+Code (two-factor)
 - PIC
- Authorization for device functions
- Enrollment
- Job Accounting
 - Ouota
 - In-printer tracking

Prerequisites

For the S900 devices, ensure that the following additional prerequisites are enabled:

- Make sure IRM licenses are available on the HP AC server. An IRM license is required for each device to allow for walk-up authentication.
- If you want to use a front panel QR code for pull printing with a mobile device, make sure to manually generate a QR code prior to configuring the device.
- If you will be using SPP Enterprise on an HP S900 series device, make sure to go to the HP AC configuration tool > Devices tile and configure the device for Pull Printing. This will create a printer definition file, which is required to use SPP Enterprise.

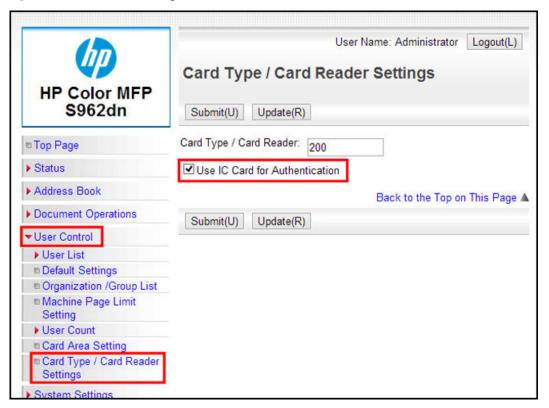
NOTE:

- If you change the IRM authentication method to **Code Only**, you must recycle the HPACWS application pool in IIS before authenticating at the device. If an error message displays on the front panel, restart the device.
- By default, card readers are configured to read HID and iClass card types. If you want the card reader to read different card types, update it before connecting to the printer. Specific parts/kits along with part numbers are required for HIP reader integration on the S900 devices.

Complete the following steps:

- Open a web browser and enter the IP address of the device to go to the device's web page to configure the device. The default username for the device web page is "admin" and the default password is "admin."
- To install a card reader for card authentication, select **User Control** followed by **Card Type / Card Reader** Settings. Select the Use IC Card for Authentication checkbox. Make sure the Card Type / Card Reader value is set to 200. Click Submit.

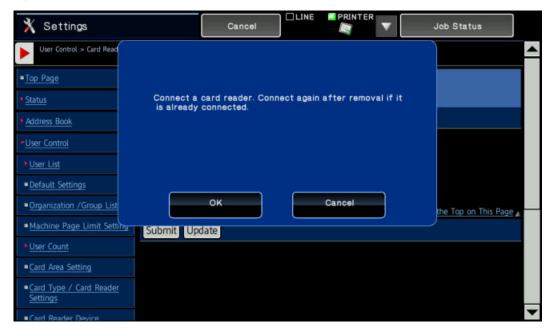
Figure 5-1 Card Reader settings



At the device, tap Settings > User Control > Card Reader Device Registration. Then tap Read.

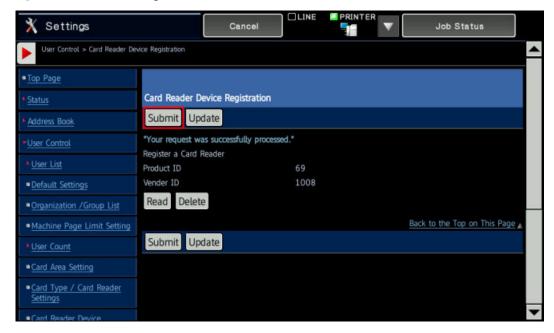
When prompted, plug in the card reader. The card reader will beep twice. Tap **OK**. The card reader Product ID and Vender ID displays on the screen.

Figure 5-2 Insert card reader prompt



Tap **Submit** to save the card reader registration.

Figure 5-3 Card reader registration



To configure the device for card authentication, select User Control followed by Default Settings. Scroll down to the Card Setting section. Select the Automatic Login with a Card checkbox. Select the Card/Front Panel Operation Authentication Approved checkbox. Specify Enable in the Card ID Registration/Change **Authority** drop-down.

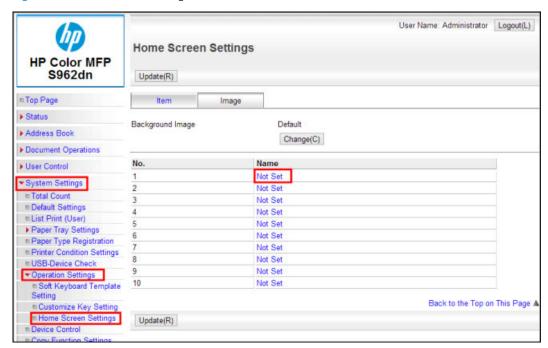
Figure 5-4 Default settings



On the device web page, select **System Settings** followed by **Operation Settings** followed by **Home Screen** Settings.

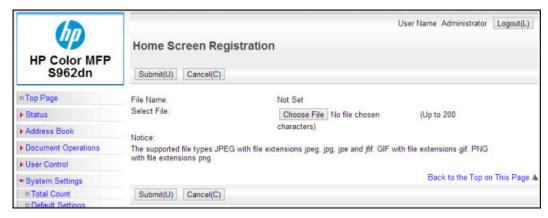
Select the Image tab followed by one of the Not Set links.

Figure 5-5 Home screen settings



On the **Registration** screen, specify the name of the image you wish to associate with the Top Level MFP panel for the application. The HP AC icon, named "icon48x44.png", is located on the HP AC server in the Program Files\HP\HP Access Control\DPR folder. Click Submit (U).

Figure 5-6 Home screen registration



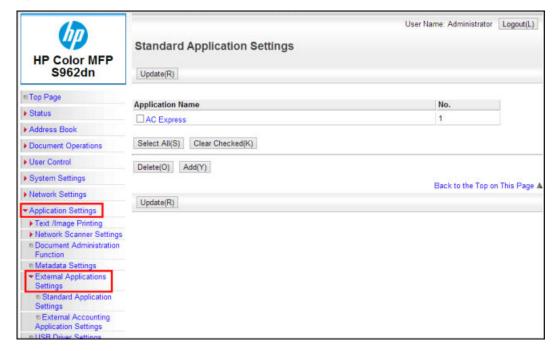
10. After adding the custom image, select the Item tab followed by the Apps Home Button link. Scroll to the bottom of the page and select the Use Custom Image checkbox. Then specify the image you added in step 4b. Then select **Reboot Now** to reboot the device and apply the settings.

Figure 5-7 Custom image



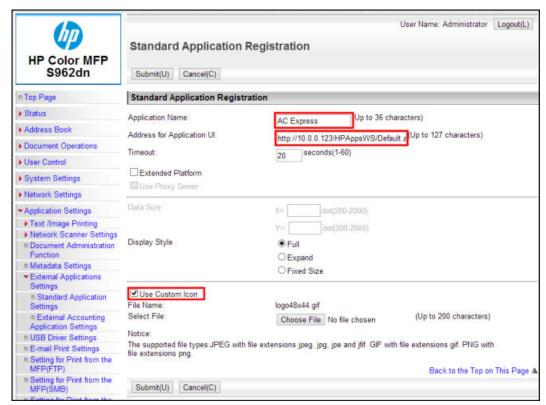
11. To register HP AC Express with the MFP, select **Application Settings** followed by **External Applications** Settings.

Figure 5-8 Standard Application settings



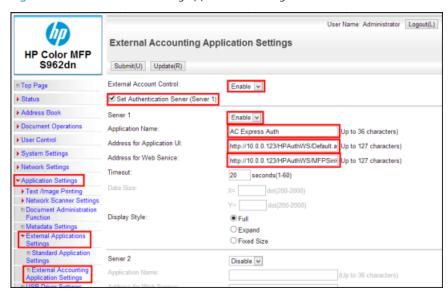
12. From the External Application Settings, select the **Add** button. Specify the Application Name as **AC Express**. Specify the Address for Application UI as http://serverIP/HPAppsWS/Default.aspx, where serverIP is the IP address of the server. On the same page, select the Use Custom Icon checkbox and then select the image you wish to associate with the Print Pulling application.

Figure 5-9 Standard Application registration



- 13. To register the HPAuthWS authentication application with the MFP, select Application Settings followed by External Applications Settings followed by External Accounting Application Settings.
 - Select **Enable** in the **External Account Control** drop-down.
 - Select the **Set Authentication Server (Server 1)** checkbox.
 - Select **Enable** in the **Server 1** drop-down.
 - Specify an **Application Name**.
 - Specify the Address for Application UI as http://serverIP/HPAuthWS/Default.aspx, where serverIP is the IP address of the server.
 - Specify the Address for Web Service as http://serverIP/HPAuthWS/MFPSink.asmx, where serverIP is the IP address of the server.

Figure 5-10 External accounting application settings



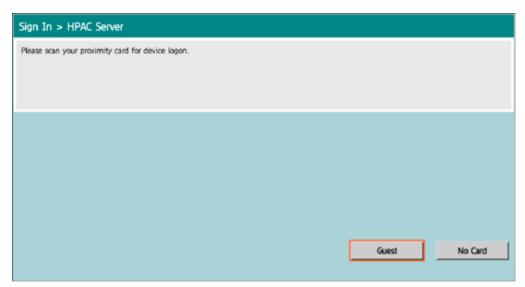
- 14. Click **Submit**. Then select **Reboot Now** to reboot the device and apply the settings.
- 15. In the HP AC configuration utility, go to the Devices tile and do one of the following:
 - Select the device from the device list. a.
 - Scan for devices on the network. b.
 - Enter the IP address of the device. c.

See Section 4.2.1, Adding devices

- **16.** Select the device from the device list and click **Configure**.
- 17. In the Configure window select Authentication and/or Authorization and click **OK**.

5.7.7.1 Configuring Guest login

HP S900 series printers require authentication prior to using any device features. But with HP AC 15.2, a new Guest button option is introduced that allows users to authenticate as a quest in order to use devices features, such as Copy and Email.



To enable the Guest button feature, follow the steps below:

- On the HPAC server, go to the HP\HP Access Control\HPWS\Auth folder, and open the Web.config file in Notepad.
- On the line <add key="GuestButton", change the value to "true".



Turn off and turn on the printer.

At the printer, when the user selects the Guest button, they will be authenticated as user GUEST.



If the user is logged in as GUEST and then wants to use the Pull Printing app, the user must select Logout and then authenticate with their card or code. After authenticating, the user can select the Pull Printing app and view their job list.

5.8 Enrolling a card at the device

The first time a user presents a card at a device they will be prompted to enroll their card.

- MPORTANT: The device must support card enrollment for this feature to work.
- NOTE: Card enrollment on HP non-FutureSmart single-function devices is not supported.

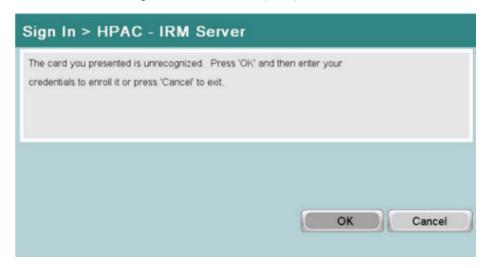
Prerequisites

- Printer is configured for Pull Printing and Authentication.
- A card reader is connected to the printer.
- Device is either a supported HP MFP, HP S900 series device, HP OfficeJet Pro, or HP single function FutureSmart with a 4.2" display.
- Users are in Active Directory.
- Device authentication method is set to Card Only or Card+Code (two-factor) in the IRM tile > AD Configurator > General section.

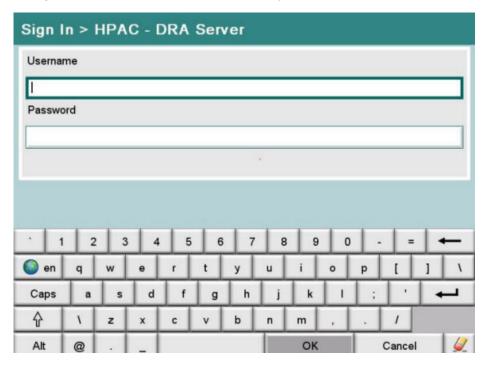
5.8.1 HP FutureSmart MFP

Tap your card to the card reader attached to the device.

2. Since the card is unrecognized, the user will be prompted to enter their network credentials. Click **OK**.



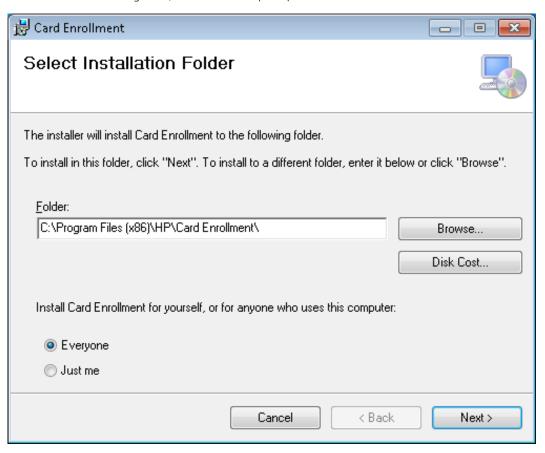
3. Enter your network Username and Password and press **OK**.



5.8.2 HP non-FutureSmart MFP

1. Present your card to the card reader attached to the device.

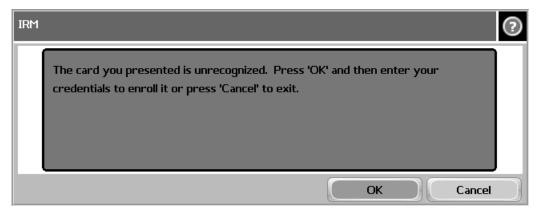
Since the card is unrecognized, the user will be prompted to enter their network credentials. Click **OK**.



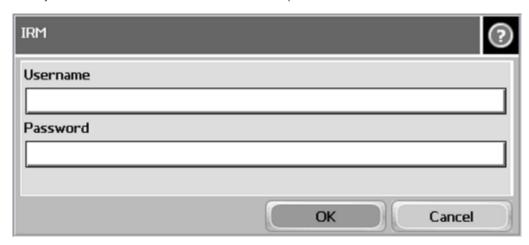
- When prompted, present your proximity card and tap **OK**. 3.
- A confirmation message will display.

5.8.3 HP OfficeJet printer

- Present your card at the card reader. A message will display indicating that the card is unrecognized (not enrolled). Tap **OK**.
- Since the card is unrecognized, the user will be prompted to enter their network credentials. Tap **OK**.



Enter your network Username and Password and tap **OK**.



5.8.4 HP S900

- 1. Present your card at the card reader. A message indicating the card is unrecognized will be displayed. Tap **OK** to enroll the card.
- Enter your network credentials and tap **OK**.
- Your card should now be enrolled. If a PIC is required, your PIC will be displayed. Otherwise, you will just be logged in. Tap **OK** after acknowledging the PIC. You will be logged in.

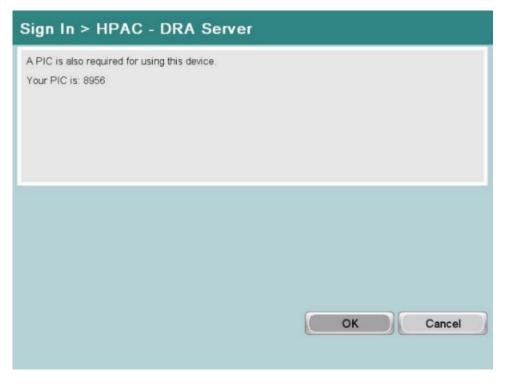
5.8.5 Enrolling a card with Two-Factor Authentication (Card + Code)

Two-Factor Authentication means that users will use their proximity badge + a PIN for an additional layer of security. This prevents users from borrowing your card and accessing the device and the pull print jobs. This is different from alternative windows authentication, which is designed so that if a user forgets a card they can still authenticate at the device.

Present your card and when prompted press **OK** to enter your network credentials.



Since two-factor is enforced and the user is newly enrolled you will be shown a screen indicating your PIC. 2.



At the device, present your proximity card.

Since this is a new user, the user will be advised that a PIC is also required and will provide the user's code (MFP only).



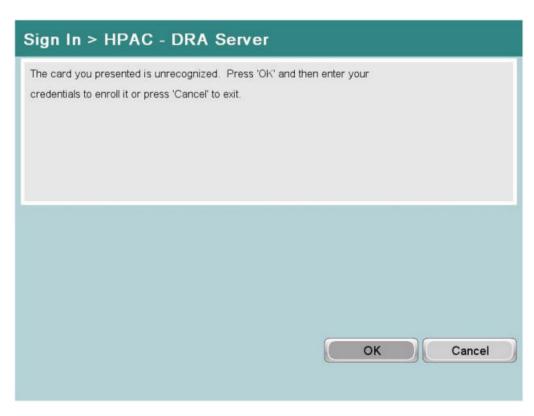
NOTE:

- In step 1, if the user hits Cancel and authenticates with their Windows credentials they will not be prompted for a code, until they present their card.
- The code can be an existing code in active directory, or a random code generated by the application that is stored in a SQL database as typically writing to AD is not permitted.

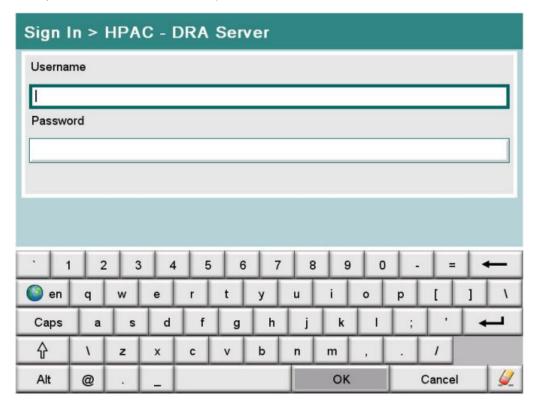
5.8.6 Enrolling a card with Card or Code Authentication

When using Card or Code authentication the first time you present your card you will be asked for your network credentials. After associating your card with your network credentials you can use your card to access the device functions, or you can press a function and the system will automatically assume you want to use code authentication and prompt you for your code.

Present your card and when prompted tap **OK** to enter your network credentials.



Enter your network credentials and tap **OK**.



5.8.7 Enrolling a card from a client PC

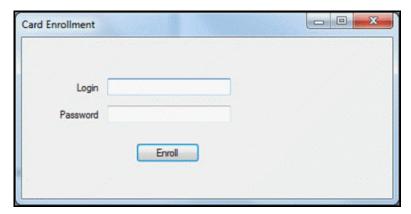
The Card Enrollment application is a desktop application that allows users to register the cards themselves from a computer. Users simply log in and present their card to a connected card reader from a client PC. The Card Enrollment application then communicates with the AD-Authenticator server and enrolls the card to that user.

Prerequisites

- HP Access Control Card Enrollment application
- Users contained in Active Directory
- Device authentication method is set to Card only or Card+Code (two-factor) in the HP Access Control Configuration Utility (IRM tile > AD Configurator > General tab).
- A card reader is connected to a PC, with the PC on the same network as the HP AC server
- See Section 2.2, Server requirements.

Complete the following steps:

Open the **Card Enrollment** application.



- Enter your network credentials and click Enroll.
- 3. The card reader will beep once. Present your card to the card reader and the card reader will beep twice.
- A message will display confirming card enrollment.



5.8.8 Touch-to-Sign in

Prerequisites

- HP Jetdirect 2800w NFC/Wireless Accessory
- HP AC server installed and configured

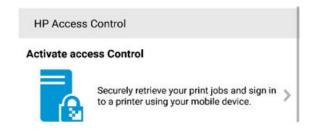
- Mobile device connected to same network as the HP Access Control Server
- HP ePrint App installed on the mobile device
 - Android device with NFC

Complete the following steps:

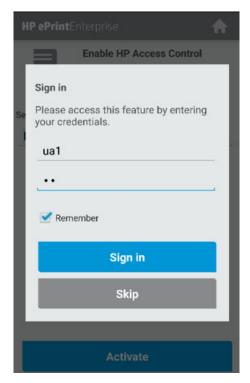
In the HP ePrint Enterprise application, open the Application Settings screen in the top right corner.



Activate HP Access Control.



Follow the wizard to provide the server address and enter your user credentials.



Present the smartphone, with the HP ePrint Enterprise app only, to the HP Jetdirect 2800w NFC/Wireless **Accessory** on the printing device.

The first time you will be asked to register your smartphone. A unique ID will be created through the NFC connection for future authentications.

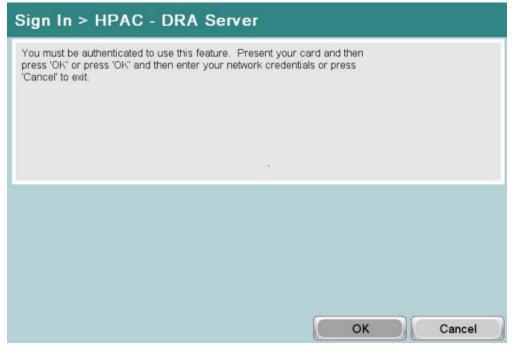
5.9 Authorization to use device features

HP AC can be used to authorize a user's ability to access device features on a MFP. See Section 5.6, Authorization for more details.

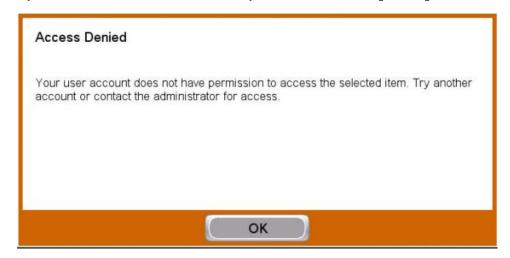
5.9.1 HP MFPs

When the device is configured to require authorization to use certain features, the user will be required to authenticate prior to accessing the device. To authenticate to use a feature do one of the following:

- Authenticate at the device before accessing the feature; OR
- Press the feature you want to use and you will be prompted to authenticate.



If you are denied access to use that feature you will receive a message stating access is denied.



5.10 Configuring Scan to Home Directory

Prerequisites

- HP firmware version 3.6 or newer
- Verify folder access enabled in the EWS
- AD attribute where the home directory path is located (i.e. homeDirectory)
- Device's EWS configured for Save to Network folder using a Personal Shared folder
- Sign-in method for the network folder application set to use HP AC as the sign-in method when using the In Printer Agent (IPA), and guest access disabled OR Rights control enabled for the Send to Folder in the IRM > AD Configurator tab > Rights menu.
- Go to the IRM tile > AD Configurator tab and select **Users**.
- Under the home folder attribute, enter the attribute where the home directory path is stored.

6 Pull Printing

6.1 Secure Pull Print Express

6.1.1 Configuring Pull Print Settings for HP AC Express

HP AC Express allows users to print jobs to be held in a server print queue then release the jobs from a mobile device, the front panel of the device or from a web page after the user has authenticated.

Jobs are stored on the HP AC server in the \Program Files\HP\HP Access Control\spool directory.

Secure Pull Print Express includes:

- Alias printing
- Touch-to-Release (from mobile devices)
- Encryption

Prerequisites

See <u>Section 2.2, Server requirements</u>.

Complete the following steps:

Click on the Settings tile and select the **SPPE** tab.

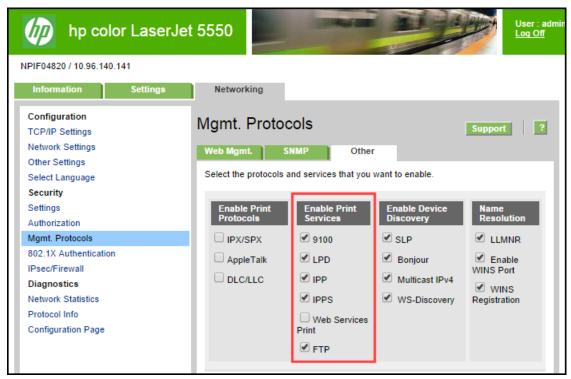
SPPE Database Dev	ice Email IIS Alias Agent Login Lice
Pull printing —	
Job expires after	Hours 🔻
	Retain "Print-Keep" jobs beyond expiration
Stored jobs folder	\\WIN-DH9NOAA6ATT\spool\
Domain\Login	
Password	
Sort list of jobs by	Date submitted Document name
Protocol	TCPIP/9100 ▼
	▼ Encryption at rest
Encryption key	****
	■ Enable one-touch release
If number of jobs is less than or equal to	0
QR code —	Email —
× Network name	Process email attachments only
☐ IP address	▼

- In the **Pull Printing** section, enter the job expiry time (global setting) in hours or days in the Job expires after fields. By default, jobs stored on the HP Access Control print server expire after 24 hours. This is a global setting that will automatically delete any jobs on the server when the expiry time limit is reached.
 - Enable Retain "Print-Keep" jobs beyond expiration if you want to retain released print jobs on the server indefinitely, regardless of the global job expiration time set. Jobs that are indefinitely retained can be deleted only by users from the mobile release app, by users from an MFP front panel or by administrators using the HP AC admin console.
 - NOTE: Single-function devices will not print retained jobs.
 - ☆ TIP: If "Retain "Print-Keep" jobs beyond expiration is selected and "Enable one-touch release" is selected, only jobs with a status of "Waiting" will be printed, and if there is at least 1 "Printed" job in the list, the list of jobs will always display.
- The **Stored jobs folder** will display the default location for the stored print jobs. Double-click the text field to browse to a different folder location. When a user prints a job using the Secure Pull Print Express print gueue, jobs are stored in the following folder:

Program Files\HP\HP Access Control\spool

Enter the domain user name and password that has write access to the network folder, if storing jobs on a network drive and not locally to the HP Access Control server. To pull print using a shared network folder, the same service account credentials entered in the Domain\Login field must be used

- for read/write access to the network folder, for the HPACSPPE application pool identity, and for the Log On setting in the HP AC SPPE service.
- b. Choose the method by which pull print jobs are sorted. You can either select **Date submitted** or **Document name.** This sort setting applies to the job list view from a mobile device, a printing device or through the web page.
- In the Protocol field, select the way the HP Access Control server will communicate with the printing devices. The choice of protocol will depend on the destination device, its capabilities, and the level of control and feedback required from the device.
 - Before selecting a protocol verify the protocol is supported and enabled on the device. Go to the device's embedded web server and browse to Networking > Management Protocols > Other > Enable **Print Services** and make sure the protocol is listed and enabled.

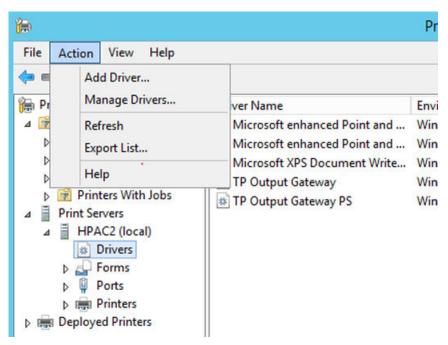


- TCPIP/9100 is the direct protocol that provides direct communication between the HP Access Control server and the printer engine. A connection is established to TCP/IP port 9100 and all data sent by the HP Access Control server is passed directly to the printer.
- TCPIP/LPR provides limited feedback from the devices about the success of a print request and provides no capabilities for a restart of a failed request.
- TCPIP/IPPS is a secure protocol that allows HP Access Control to encrypt the data stream sent to the device.
 - If your organization uses IPPS and it is not listed on an HP device, ensure the device's Jetdirect card is updated, or replace with a Jetdirect card that supports the IPPS protocol. Contact your HP representative for more information.
- NOTE: If TCPIP/IPPS is selected and IPPS is not enabled on the device, IPP will be used to print job and the job will not be encrypted.
- 5. Click **Apply**.

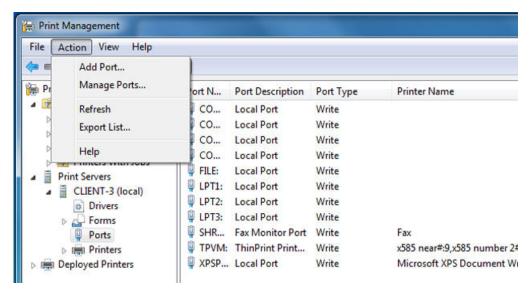
6.1.2 Configuring a Pull Print printer with HP AC Express

With a Secure Pull Print Express pull printer, users can store their documents for future printing. Complete the following steps to add a Secure Pull Print Express pull printer on the HP AC server:

Launch Print Management.



- Expand the print server and click **Drivers**. Under the Action menu choose **Add Driver**. 2.
- 3. Complete the wizard to finish installing the driver.
- Select **Ports** and under the Action menu choose **Add Port**.

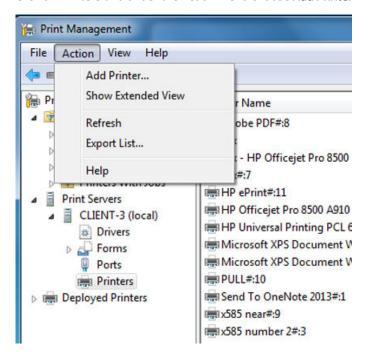


Select HP AC Secure Pull Print Express port. Click New Port.

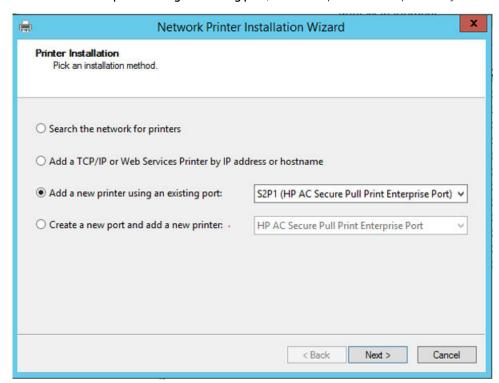
Enter a port Name and click **OK**.



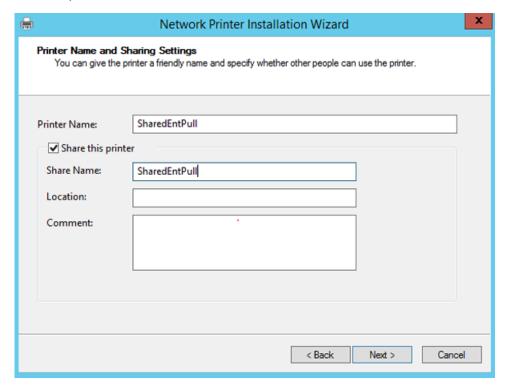
Click on Printers and under the Action menu choose Add Printer.



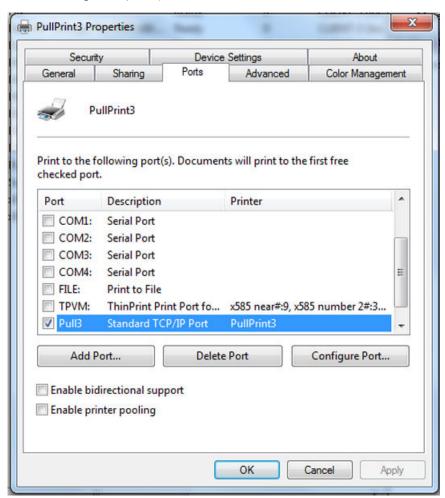
8. Choose Add a new printer using an existing port, select the port that was previously created and click Next.



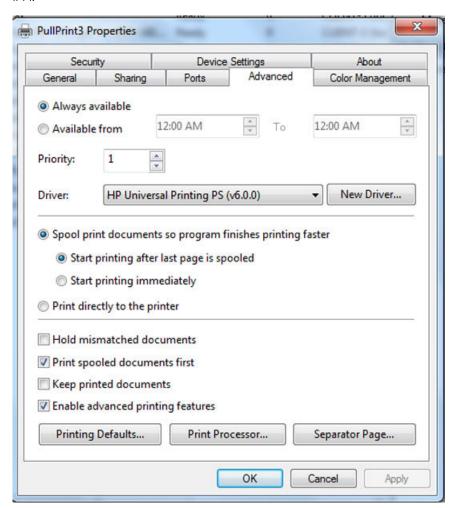
Share the printer and finish the installation.



10. Go to the Properties of the printer and disable bidirectional support. This is because we are not communicating directly to a printer but to the HP AC server.



11. Go to the Advanced tab and select Start Printing after the last page is spooled. This is required when using IPM.



6.1.3 Set up print server-less pull printing with Express

Print serverless pull printing feature eliminates the print server from your printing environment and reduces the number of overall servers. The SPPE Print Client application is installed on a client workstation, allowing the user's pull print jobs to be routed and stored in a shared network folder on the SPPE server.

Storing the user's jobs on a network folder allows for pull printing even if the client workstation is offline. This is different from client based pull printing with local job storage, as with that functionality jobs are stored on the client PC. Please see Client based pull printing section of this guide.

Follow the steps below to set up client-based pull printing:

Prerequisites

- See Section 2.2, Server requirements.
- Ensure General settings have been configured. See <u>Section 4.2</u>, <u>Configuring general settings</u>.
- Ensure Authentication settings have been configured. See <u>Authentication</u>.
- Ensure devices are configured for authentication. See <u>Section 5.7</u>, <u>Configuring devices</u>.

Server setup

When a user prints to the HPACSPPE printer from a client workstation, a folder, named after the user's name, is automatically created in the shared network folder on the server. The user's jobs are stored in his or her folder on the server and can be pulled from any SPPE configured printer. The administrator can also view users' stored jobs in the SPPE tile of the HP AC configuration tool.

On the Secure Pull Print Express server, go to the **Settings** tile of the HP AC configuration tool and click the SPPE tab.



- 2. Under **Pull printing**, do the following:
 - Double-click in the **Stored jobs folder** field and browse for a shared network folder on the server. By default, the HPACSPPE port will print to the \\servername\sharename folder, where servername is the name of the SPPE server and sharename is the name of the shared folder. The shared folder does not have to be on the server, it can be on a storage area network (SAN) or network-attached storage (NAS).
 - NOTE: The share is not automatically created by the software, but must be created prior to this step.
 - b. Enter credentials in the **Domain\Login** and **Password** fields (Make sure you enter a user credentials have read/write access to the shared network folder). Click Apply.

SPPE	Database Dev	ice E	mail	IIS	Alias	Agent	Login	Lice
Pull printing —		54	[
	Job expires afte		Hours					
		_			bs beyond e	expiration		
	Stored jobs folde	\\WIN-DI	H9NOAA6	ATT\sp	/Joo			
	Domain\Logir							
	Password	1						
	Sort list of jobs by	• Date	submitte	d	0	Document nar	me	
	Protoco	TCPIP/9	100			•		
		× Encry	yption at	rest				
	Encryption key	****						
		× Enabl	le one-to	uch rele	ase			
If number of	f jobs is less than or equal to	0						
− OR code −−−				mail —				
QIV COUC								
× Network	name			Pro	cess email a	attachments o	only	
☐ IP address								T

MPORTANT: To pull print using a shared network folder, the same service account credentials entered in the Domain\Login field must be used for read/write access to the network folder, for the HPACSPPE application pool identity, and for the Log On setting in the HP AC SPPE service.

6.2 Set up the HP Access Control (HP AC) Secure Pull Print server for email printing

Users are able to store documents for pull printing from Microsoft Office or PDF documents by emailing the documents to a designated email address. The email address must be assigned in the admin console > Settings > Email tab. See Section 4.2.2, Email for more information.

Before emails and attachments can be printed from the HP ePrint Enterprise app, certain settings must be set on the HP Access Control (HP AC) Secure Pull Print server.

NOTE:

- The following file types are supported for pull printing: DOC, DOCX, XLS, XLSX, PPT, PPTX, VSD, PDF, TXT, JPG, JPEG, BMP, GIF, PNG, TIF, and TIFF.
- This feature is supported with both HP AC Express and HP AC Enterprise.
- When printing email attachments, the attachment along with any screenshots, including email signatures, print on separate pages, regardless of the size.
- If using SPP Express, files are stored in the spool folder > sender's email address folder.
- If using SPP Enterprise, files are stored in the pull print gueue that was created first.

Prerequisites

- You are logged into the server with a domain account with local administrator rights.
- The HP AC SPPE Mail service is started.
- Microsoft Office is activated with each application installed and registered to the current user.
- A local printer is installed with a PCL5, PCL6 or PS driver and set as the default printer.
- On a 64-bit server, validate the OS version of Microsoft Office. Open the Windows Task Manager with the Office application open. In the Processes tab, a 32-bit version application displays *32 in the name.
- The settings in the Email tab of the configuration utility are correct. See Section 4.2.2, Email for more information.
- If using SPP Enterprise, and if the user's name in the email address' prefix is different than the user's login name, an alias must be created for the user.

Complete the following steps to set up the Secure Pull Print server for mobile email printing.

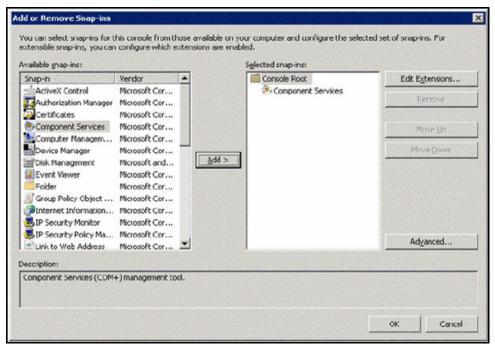
- Launch DCOM 1.
- 2. If you are using a 32-bit version of Microsoft Office on a 64-bit server, complete the following steps:
 - Run the following command in Command Prompt: mmc -32

```
Administrator: Command Prompt
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.
C:\Users\robert>nmc -32
C:\Users\robert>_
```

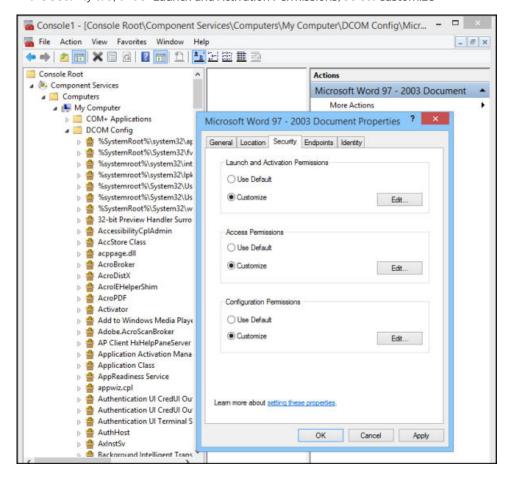
When the User Account Control window displays, click Yes.



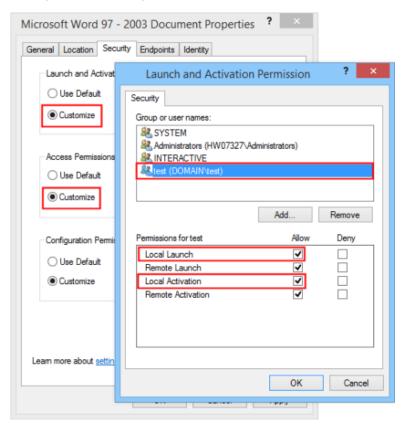
- In the Console window, click the File menu and then click Add/Remove Snap-in. c.
- In the Add or Remove Snap-ins window, click Component Services from the Available snap-ins d. section. Click Add. Click OK.



NOTE: If you are using a 64-bit version of Microsoft Office, go to Administrative Tools and open **Component Services.** Change the user login in the DCOM settings for each of the Office applications. In the Security tab, under Launch and Activation Permissions, select Customize.



4. Add the user selected to start the HP AC SPPE Mail service. Select **Local Launch** and **Local Activation**. Click **OK**. Repeat the same steps in the Access Permissions section.

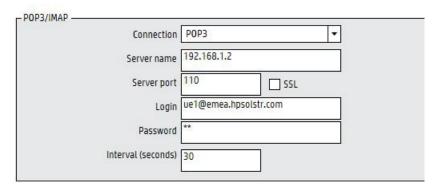


5. In the Identity tab, select **This user** and enter the user/password selected to start the HP AC SPPE Mail service.

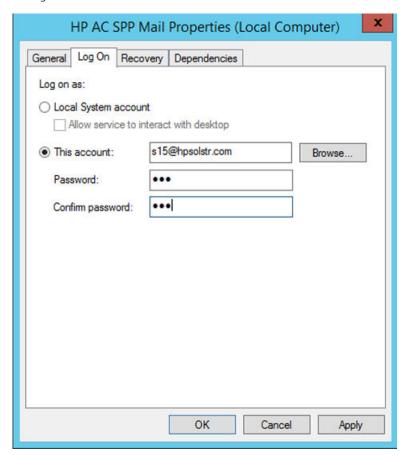


6. After configuring DCOM, log off the server and send an email to validate that the settings are correct.

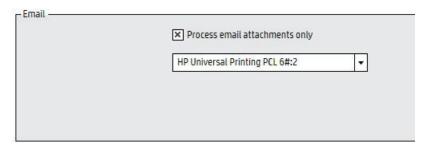
Configure email settings in Settings tile > Email tab > POP3/IMAP. The email address entered here is the one that users will forward emails to.



Configure the HP AC SPPE Mail service to start with a domain account (services.mmc). Restart service. 8.



Go to the Settings tile > SPPE. Under the Email section, check if you want users to process email attachments only or email + body text and have then appear as pull print jobs in their stored jobs folder. 10. Select a printer to process the files. The driver must be installed locally on the server.



NOTE:

- Email jobs must use the settings and features, such as color or duplex settings, of a printer before they can be processed as pull print jobs. Click the drop-down list to select an installed pull print queue created locally on the server with the features you want to apply to email jobs. The printer must be a local printer with a PCL5, PCL6 or PS print driver.
- If the "Service not started with a domain account" message displays in the Email section, you must restart the HP AC SPPE Mail service with a domain account. To restart the service with a domain account, go to Administrative Tools > Services. Right-click the HP AC SPPE Mail service, then click Properties. Under the Log On tab, select This account and enter the credentials of a domain account. Click **OK**. Restart the HP AC SPPE Mail service.

6.3 Set up Server for Touch-to-Release

Mobile Release allows for releasing of secure pull print jobs using a smartphone. Use of the QR code feature allows for easy detection of printers by scanning the QR code on the device, selecting your pending print jobs, and releasing the jobs to the device to be printed. Mobile Release is supported on any device.

Prerequisites

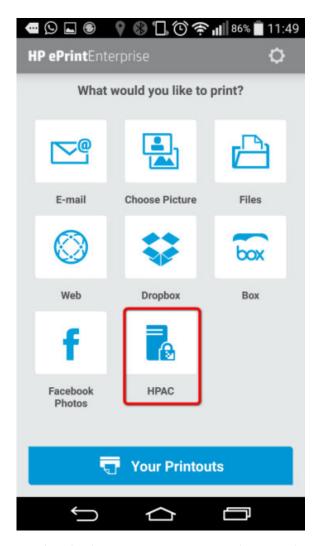
- Smartphone connected to the same network as the HP Access Control server
- HP ePrint Enterprise app for your smartphone
- HP AC installed and configured
- QR code enabled on the device if using QR code for job release
- Print device configured for pull printing
- Driver compatible with the print devices
- For Enterprise: the device needs to be added to the Device list and configured for pull printing (no agent install required) to create the printer definition (Device tile)
- See Section 6.5, Configuring devices for pull printing

MOTE:

- For iOS devices the identification of the printer can be done through a bar code.
- Android support is NFC only.
- This feature is supported with both HP AC Express and HP AC Enterprise.

Complete the following steps:

Tap the HP AC icon on your smart phone in the ePrint Enterprise application.



To select the destination printer, present the smartphone to the HP Mobile Print Accessory.

6.3.1 Configuring the Server and Printing Devices for Touch-to-Release

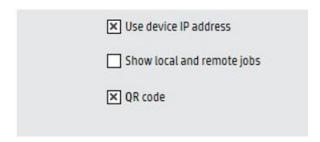
In the **Settings** tile choose the **SPPE/SPP Enterprise** tab and under QR code choose the information to encode in the QR code. The QR code is used to scan from the mobile device to route stored jobs to that printer.

For HP AC Express you can use either network name or IP address as long as DNS resolves correctly.

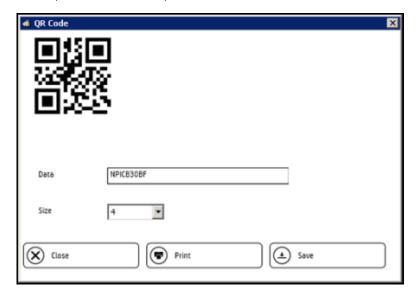
The order of the information displayed can be changed by dragging and dropping the items in the list to change the order.



NOTE: Since HP AC Enterprise uses printer definitions referencing the device's network name, the QR code is set to the network name and cannot be changed.



For single function devices, or any device that cannot display the QR on the front panel, go to the devices tile and right-click on a device to display a drop down menu. Choose Generate QR code to create a QR code for the printer. Click **Print** to print the code and affix the label to the device.



For HP MFP devices the QR code will display on the front panel of the device when it is configured for pull printing.

6.3.1.1 One-touch Release

One-touch release allows HP MFPs and HP OfficeJet Pro devices to print all documents at login with minimal user interaction, similar to single function devices. After authenticating at the device and selecting the Secure Pull Print application, all jobs are printed, without having to view the job list and selecting Print All.

Go to the Settings tile > SPPE tab and under Options select **Enable one-touch release**.



In the "if the number of jobs is less than equal to" enter the number of jobs that will trigger the one-touch release action (i.e. if the number entered is 5, if the # of jobs is 5 or less then all jobs will be released. If more than 5 jobs then a job list will be presented).

NOTE:

- If retain "print-keep" jobs beyond is not enabled then all of the users jobs will be printed regardless of their status of "waiting" or "printed."
- If retain "print-keep" jobs beyond expiration is enabled than only jobs with a status of waiting will be printed.
- If retain "print-keep" jobs beyond expiration is enabled and there is at least one job with a status of "printed" then the job list will be displayed.

6.4 Secure Pull Print Enterprise

6.4.1 Introduction

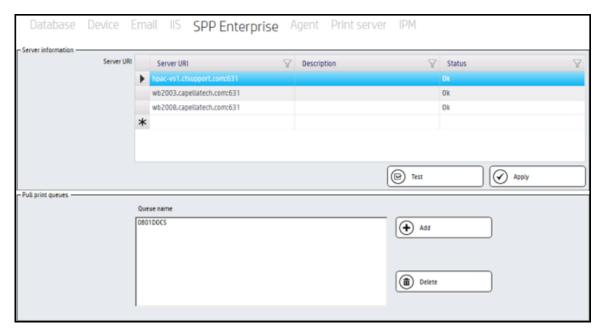
With HP Access Control (HP AC) Secure Pull Print Enterprise, every pull print server can communicate with each other to enable remote job capabilities. This means that users can store jobs on one server and then release jobs from a different device managed by a different server. Pull print jobs can be released from single-function or multifunction printers.

6.4.2 Configuring Pull Print Settings for HP AC Enterprise

Prerequisites

The prerequisites for configuring HP AC Enterprise Secure Pull Print Settings are detailed in Section 2.2, Server requirements.

Click on the Settings tile and select the SPP Enterprise tab. The SPP Enterprise tab allows you to add servers for pull printing, add pull print queues and customize pull printing options. By default the local server information is populated. Any servers that will participate in roaming and be queried for print jobs should be listed here.



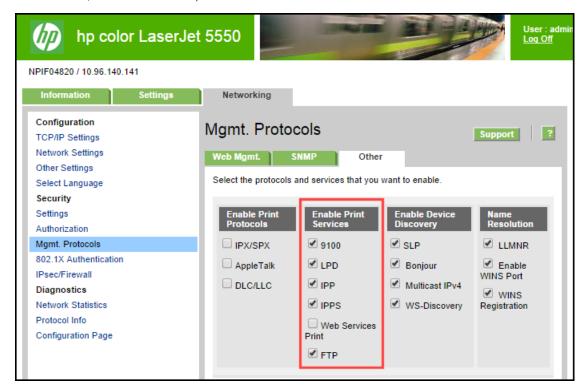
In the Options section,

- Enter the job expiry time (global setting) in hours or days in the Job expires after fields. By default, jobs stored on the HP Access Control print server expire after 24 hours.
- b. If you want to retain print jobs after expiry, select the Retain Print-Keep jobs. Jobs that are indefinitely retained can be deleted only by users from the mobile release app, by users from an MFP front panel or by administrators using the HP AC admin console.

Options —	
	TCPIP/SOCK ▼
PJL overlap	1
Job expires after	24 Hours ▼
	Retain "Print-Keep" jobs beyond expiration
	Enable tracking of purged jobs
	Enable tracking of printed jobs
TCP/IP API Port	5501
TCP/IP QUEUE Port	5500
TCP/IP LPD Port	515
TCP/IP IPP Port	631
	■ Use device IP address
	Show local and remote jobs
	Display all jobs
	QR code
	☐ PJL parsing
	Encryption at root

The Protocol field defines the way SPP Enterprise will communicate with the printer. The choice of protocol will depend on the destination device, its capabilities, and the level of control and feedback required from the device. Click **Apply** and **Update printer definition** after making any changes.

- TCPIP/SOCK is a direct socket protocol that provides a simple direct communication channel between SPP Enterprise and the printer engine. A connection is established to TCP/IP port 9100 and all data sent by SPP Enterprise is passed through directly to the printer.
- TCPIP/PJL implements a bidirectional communication channel with the printer engine using the PJL (Printer Job Language) job management language. This protocol provides the most sophisticated control of print delivery, including guaranteed delivery of each page to the output hopper, checkpoint restart in the event of a failure, and full device status information (i.e., page jam, load paper, etc.). The default implementation delivers one document at a time and waits for all pages to be delivered to the output tray before commencing delivery of the next document. While this provides the highest level of assured delivery, it can introduce a delay between documents caused by the printer engine winding down while the paper path is completely cleared. When printing a large number of small document this delay between jobs is most noticeable.
- TCPIP/IPPS is a secure protocol that allows SPP Enterprise to encrypt the data stream sent to the device.
- NOTE: If TCPIP/IPPS is selected and IPPS is not enabled on the device, IPP will be used to print jobs and the job will not be encrypted.
- Before selecting a protocol, verify the protocol is supported and enabled on the device. Go to the device's embedded web server and browse to Networking > Management Protocols > Other > Enable Print Services, and make sure the protocol is listed and enabled.



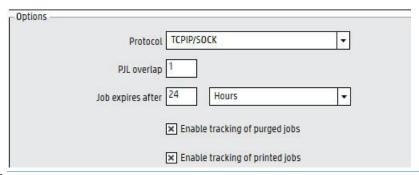
- Under the ports section you can change the default ports for the following. After modifying the default port numbers, click **Restart Services**:
 - TCP/IP API Port: Specifies the local TCP/IP port that SPP Enterprise will open for API requests. Port 5501 is the default port.
 - TCP/IP LPD Port: Specifies the local TCP/IP port that SPP Enterprise will open for inbound LPD request. Port 515 is the default port. If an LPD daemon is already running on the server, shut down this process to enable SPP Enterprise to open port 515.

- TCP/IP QUEUE Port: The port that will open for inbound requests on the server and applies to the Enterprise Print Client. This port will also open on client workstations when Enterprise Print Client is installed. This is used to transfer job metadata from client workstations to the server when you want to use Local Job Storage on client workstations. The default port is 5500.
- TCP/IP IPP Port: Specifies the local TCP/IP port that SPP Enterprise will open for inbound IPP request. Port 631 is the default port.
- If you want to retain print jobs after expiry, select the Retain Print-Keep jobs. Jobs that are indefinitely retained can be deleted only by users from the mobile release app, by users from an MFP front panel or by administrators using the HP AC admin console.
- NOTE: Single-function devices will not print retained jobs.
- : TIP: If Retain "Print-Keep" jobs beyond expiration is selected and Enable one-touch release is selected. only jobs with a status of "Waiting" will be printed, and if there is at least 1 "Printed" job in the list, the list of jobs will always display.
- Enabling the tracking of purged jobs will allow any jobs that have been expired or deleted to be tracked for job accounting. When the **Enable tracking of purged jobs** box is checked, an XML file is created for each job that is purged.

The XML file includes information such as the purged job name, the date the job was submitted, and the date the job was purged. The XML files are created in one of the following locations:

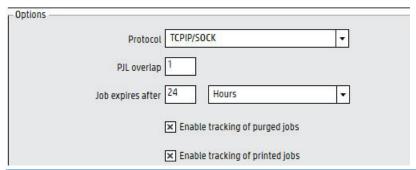
- If Job Accounting is installed on the same server as Secure Pull Print Express, the XML files are created in the following folder:
 - Program Files\ HP\HP Access Control\temporary\DTM
- If Job Accounting is installed on a different server, the XML files are created in the following folder: Program Files\HP\HP Access Control\temporary

When purging is complete, the XML files are pushed to the Job Accounting server in the Temporary \DTM folder.



Requires the installation of the Job Accounting Server component or having a job accounting server on the network.

To enable tracking of printed jobs on devices that do not support in-printer tracking (HP OfficeJet Pro devices), select Enable tracking of printed jobs. This will track print job pages after they have been printed.



- Requires the installation of the Job Accounting Server component or having a job accounting server on the network.
- When Use device IP address is enabled, this checkbox allows the spooler to identify the printer via IP address instead of host name, in case the host name has changed and a printer has not been reconfigured. It is recommended that printers have fixed IP addresses.
- Show local and remote jobs: When enabled, this checkbox allows for pull print queues from all SPP Enterprise servers to automatically display on a device front panel after authentication. If this is disabled, the user will need to manually select the Remote Jobs button at the front panel to view all pull print queues.
- To improve performance, you can specify the number of jobs that should be delivered to the device concurrently. In the PJL overlap field, enter a number from 1 through 9 to determine the number of jobs to be released at one time. Overlapping the delivery of multiple documents to the device can prevent delays that can occur between documents caused by the device clearing the paper path before confirming job completion.

MOTE:

- The value chosen should be the lowest value required to prevent delays between documents, and will vary depending on the speed and capabilities of the target printer. A value of 3 should be sufficient for most printers.
- When using Point and Print with SPP Enterprise, the SPP Enterprise port monitor must be used to enable Encryption at rest. An LPR shared queue does not support encryption at rest. To use encryption with an LPR local queue, the HP AC Print Client must be installed on client workstations.
- ☆ TIP: If you want end-to-end encryption from the user workstation to the printer, install HP AC Print Client on user workstations with encryption enabled, enable Encryption at rest on the HP AC server and select TCPIP/IPPS as the printing protocol.

- 10. Enable Encryption at rest to encrypt print jobs using AES 256 while they are on the HP Access Control server.
- NOTE: When enabling encryption, the printer definition files must be updated. Click the Update printer definition button on all servers.

I	Client options -
l	Client passcode
l	Client encryption key
l	★ Change print job identifier to
l	○ Domain\Login
l	○ UserPrincipalName
l	
١	Fred.

11. The Client Passcode is used for authentication between the server and client workstations, and applies when Local Job Storage, via the Enterprise Print Client, is installed on client workstations. The Client Passcode uses a cryptographic nonce to establish secure communication between the client and server. The Client Passcode and Client Encryption Key must be applied before installing Local Job Storage on client workstations. Enter any value between 0 and 254 characters.

IMPORTANT:

- If the Client Passcode is changed after installing the Enterprise Print Client on client workstations, users will not be able to release jobs. You must reinstall the Enterprise Print Client.
- After changing the Client Passcode, click **Restart Services**.

NOTE:

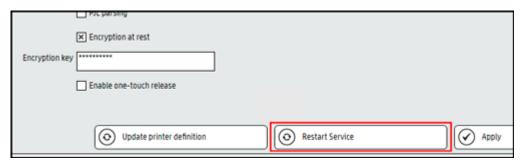
- The Client Encryption Key is stored in the passcode.dat files in the C:\Program Files\HP\HP Access Control\bin folder on the server and in the Program Files\HP\HP Access Control Print Client\bin folder on client workstations.
- By default, communication between the server and clients are encrypted. The Client Passcode and Client Encryption Key are optional if you want to change the default keys.
- 12. The Client Encryption Key field allows for encryption of job metadata between the server and client workstations when Local Job Storage, via the Enterprise Print Client, is installed on client workstations. The Client Passcode and Client Encryption Key must be applied before installing Local Job Storage on client workstations. Enter hexadecimal characters of 128 bits, 192 bits or 256 bits in the text field.

MPORTANT:

- If the Client Encryption Key is changed after installing the Enterprise Print Client on client workstations, users will not be able to release jobs. You must reinstall the Enterprise Print Client.
- After changing the Client Encryption Key, click **Restart Services**.

NOTE:

- The Client Encryption Key is stored in the encryptionkey.dat files in the Program Files \HP\HP Access Control\bin folder on the server and in the Program Files\HP \HP Access Control Print Client\bin folder on client workstations.
- If Encryption at rest is enabled and Client encryption key is used with Local Job Storage, the Enterprise client on the workstation will use the Client encryption key and not the Encryption at rest
- 13. If you want to change users' identification format, see the section the Configuring Print Job Identifier section of this guide.
- 14. Click Apply.
- 15. After making any changes, select **Restart Service** button to restart the SPP Enterprise Service.



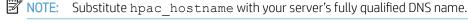
6.4.2.1 IPPS inbound support

Prerequisites:

- Requires IPP printing enabled on the computer.
- The client computers must have the proper certificates installed in the Trusted Root Certificate Authorities store.

Follow the steps below:

To enable SSL/TLS inbound printing it is first necessary to create a certificate signing request for your server and a private key. This can be done using the openssl command line tool (located in the \Program Files\HP\HP Access Control\bin folder) using the following command:



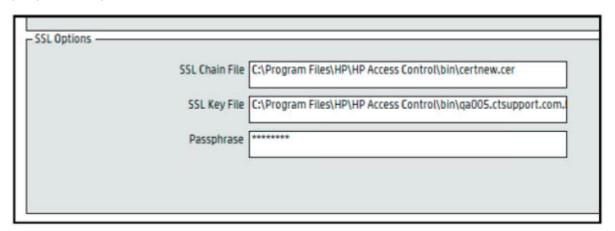
```
openssl req -newkey rsa:2048
```

- -keyout hpac hostname.key
- -keyform PEM
- -out hpac hostname.csr
- -outform PEM
- NOTE: You will be prompted to provide additional details to complete the certificate signing request and two files will have been created.
 - A certificate signing request file with an extension of .CSR.
 - A private key file with an extension of .KEY.

The certificate signing request file (hpac_hostname.csr) should then be sent to a Certificate Authority (CA) who will validate the request and create a PEM format (Base64 encoded) certificate.

The PEM format (Base64 encoded) certificate along with any intermediate CA certificates need to be concatenated together into a single file (e.g., hpac_hostname.cer).

- The certificate (hpac_hostname.cer) and the keyfile (hpac_hostname.key) should be copied to the HPAC 2.
- In HPAC > Settings > SPP Enterprise > SSL Options, double-click in the SSL Chain File field and select the chain file. This is the public key and will be shared with clients connecting with IPPS. Double-click in the SSL Key File field and select the key file. This is the private key. In the Passphrase field, enter the certificate passphrase if required.



- Specify the server port number that HPAC should open for inbound SSL communication. Go to HPAC > Settings > SPP Enterprise > Options > TCP/IP IPPS Port field and specify the required inbound IPPS port (recommended 5443, but can be changed).
- Restart the SPP Enterprise service.
- Under Pull Print queues create a queue to receive the IPPS jobs. This queue is not a pull print queue, but an inbound connection for IPP jobs that will route the job to the pull print queue specified in the line TCPPRTR=.
- Go to \Program Files\HP\HP Access Control\spoolroot\ptr folder and open the pull print queue previously created in notepad. Replace the contents of the file with the following text, where TCPHOST is the name of the HPAC server, TCPPRTR is the name of the pull print queue on the server and FILTER1 is the path of the filter.

```
ipp1 - Notepad
File Edit Format View Help
COMMTYPE = TCPIP/LRSQ
TCPHOST = HPAC-A-1.hpsolstr.com
TCPRTR = Direct1
TCPRPORT = 5500
VPSX2VPSX = YES
ENCRYPT = YES
PRTROPTS = 80
FILTER1 = C:\Program Files\HP\HP Access Control\bin\Encrypt.exe
F1DTYPE = all
F1ARGS = "&infile" "&outfile"
```

- In the Settings tile>SPP Enterprise tab enable encryption at rest and enter an encryption key. Click on apply and restart server.
- Install on the client PCs the IPP printer (for example, https://servername:5443/queue where the port matches the port specified in Settings tile > SPP Enterprise > Options > TCP/IPIPPS.

- NOTE: If using your own supplied certificates, then specify the SSL Chain file, the SSL key file and the passphrase and the IPPS port field. It is recommended to use a certificate provided by the customer.
- NOTE: The queue created that receives the IPPS jobs from the client PCs will no longer be displayed in the Pull Print Queue list in the Settings tile > SPP Enterprise tab.

6.4.2.2 Configure Print Job Identifier

6.4.2.2.1 User Identifier

HP Access control requires authentication to know who the user is so that it can track the details on the activity of the user, associate pull print jobs to the user, and allow for user rights management. The base requirement is that the user identifier is matched against the login ID (proximity badge ID or code ID).

The default user identifier is the sAMAccountName attribute, and changing the print job identifier is not required for a multiple domain environment with the following:

- Unique login that is not duplicated in the different domains, and
- Data for all users is accessible from a single entry point with a single LDAP or Global Catalog query that can authenticate the user's credentials and confirm user details. This normally implies that there is a trust relationship between domains, which are part of a common forest.

If the print job identifier needs to be changed, because the environment does not support the above rquirements, then the print job identifier must be changed on all HP AC pull print servers.

User Identifier for multiple domains with non-unique logins

For pull printing it is requires that the user identifier for the print jobs is unique so that print jobs from one user do not appear in the job list for another user. In addition to the default sAMAccountName attribute, HP Access Control can store jobs from users as either domain\username (DomainA\jdoe) or as userPrincipalName (jdoe@domainA.com) by configuring the Print Job Identifier within HP Access Control.

The same user identifier must be used for both pull printing (Settings tile > SPP Enterprise tab > Client Options > Change Print Job Identifier) and for authentication and enrollment (IRM tile > AD-Configurator tab > Users > Username attribute).

Figure 6-1 Print job identifier in the SPP Enterprise tab

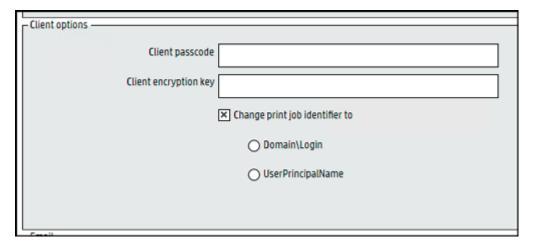
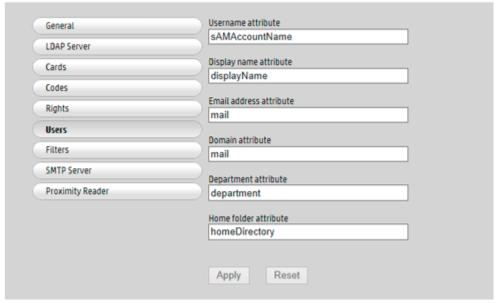


Figure 6-2 User identifier in the AD Configurator

AD Configurator AD User Editor AD Group Manager User List Editor



sAMAccountName

The sAMAccountName is used to support clients and servers from Windows. The sAMAccountName is set as the default attribute within the HP Access Control utility.

The sAMAccountName can be used for authentication and enrollment if it is unique across the domains.

If usernames are not unique in the global catalog, the sAMAccountName should not be used, and userPrincipalName is the recommended best practice.

userPrincipalName

The userPrincipalName (UPN) is the recommended login for Windows users, if you have to change the print job identifier. At login time a UPN is validated by searching the LDAP server location set in the AD Configurator > LDAP Server page.

For authentication and enrollment, when using the userPrincipalName, the entire syntax must be used (jdoe@domainA.com). This is also required for usernames entered into the User Editor.

When using the userPrincipalName attribute, the HP AC Enterprise Print client is required, and must be installed after server configuration, so that the settings are pushed from the server to the client during installation.

domain\login

When the default sAMAccountName cannot be used, one option is to configure the user identifier to be domain \login. The login will typically be the sAMAccountName for that user.

One benefit of this choice is that, for a given user, if the login is not repeated for other users in the other domains, the user does not necessarily need to enter the domain, but just the login name when enrolling a card or using alternate windows authentication at the print device control panel.

If the user has a duplicate sAMAccountName across domains, then the user would be required to enter domain \login at login.

NOTE: Using domain\login does not support the following features:

- Multi-vendor devices;
- Delegate, and
- Alias.

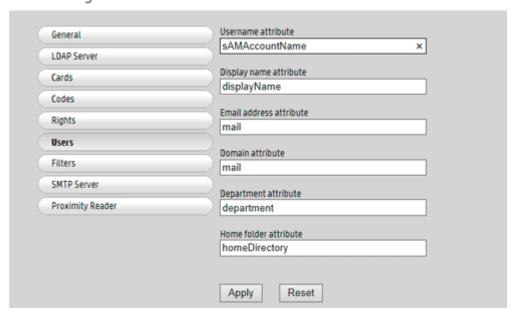
When using the domain\login, the HP AC Enterprise Print client is required, and must be installed after server configuration, so that the settings are pushed from the server to the client during installation.

6.4.2.2.2 Configuring to use Domain\Login

In the HP AC utility navigate to the IRM tile>AD Configurator tab>Users, confirm the username attribute is set to **sAMAccountName** (default) and click **Apply**.

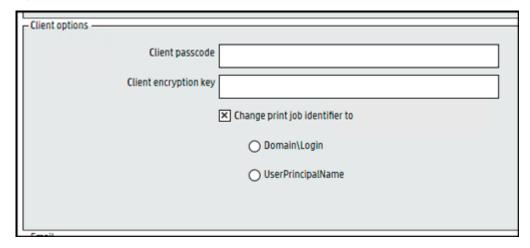
Figure 6-3 User identifier in the AD Configurator

AD Configurator AD User Editor AD Group Manager User List Editor



Go to the Settings tile>SPP Enterprise tab>Client Options. Click on Change print job identifier and select Domain\login. Click on Apply.

Figure 6-4 User identifier in the SPP Enterprise tab



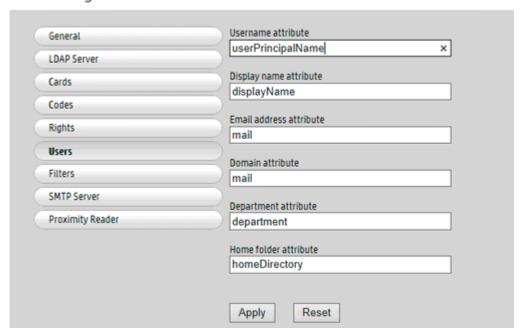
On the client PC it is required to install the HP AC Enterprise Print client. Note: this must be done AFTER configuration of the HP AC server as the server settings for the Print job identifier are applied to the client at the time of install.

6.4.2.2.3 Configuring to use userPrincipalName

In the HP AC utility navigate to the IRM tile>AD Configurator tab>Users and change the username attribute to userPrincipalName and click Apply.

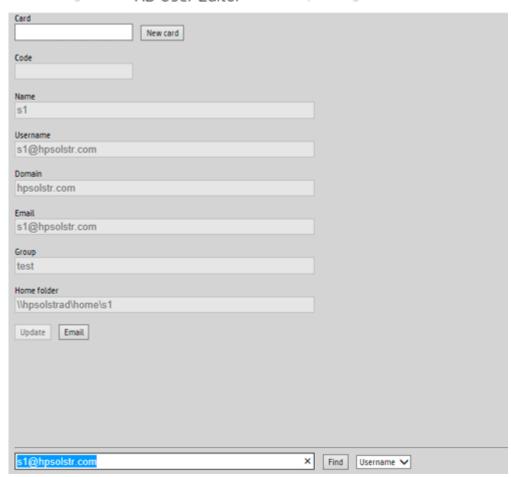
Figure 6-5 User identifier in the AD Configurator

AD User Editor AD Group Manager User List Editor AD Configurator



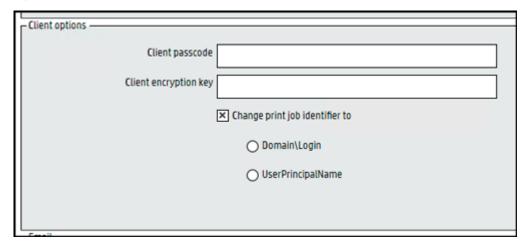
To test, go to the AD User Editor tab and enter the userPrincipalName for a user and click find. Figure 6-6 Testing resolution using userPrincipalName

AD Configurator AD User Editor AD Group Manager User List Editor



Go to the Settings tile>SPP Enterprise tab>Client Options. Click on change print job identifier and select userPrincipalName. Click on Apply.

Figure 6-7 User identifier in the SPP Enterprise tab



On the client PC it is required to install the HP AC Enterprise Print client. Note: this must be done AFTER configuration of the HP AC server as the server settings for the Print job identifier are applied to the client at the time of install.

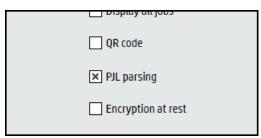
6.4.2.3 Configuring PJL Parsing for Non-Windows Printing

Prerequisites

HP AC Enterprise installed and configured.

The Enterprise port monitor can use a filter (PJLHeader.exe) to parse the PJL header for non-Windows printing, or with HP ePrint Enterprise, getting the username/job name from the PJL. Along with the Enterprise port monitor, this is used when printing from a system that does not generate standard PJL information.

- Click on the Settings tile and select **SPP Enterprise** tab. 1.
- In the **Options** section, select **PJL parsing** to enable this.



NOTE: Enabling PJL Parsing may affect performance.

6.4.2.4 Configuring PJL Overlap

Prerequisites

HP AC Enterprise installed and configured.

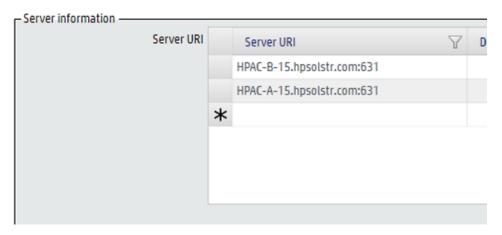
To improve performance, you can specify the number of jobs that should be delivered to the device concurrently. In the PJL overlap field, enter a number from 1 through 9 to determine the number of jobs to be released at one time. Overlapping the delivery of multiple documents to the device can prevent delays that can occur between documents caused by the device clearing the paper path before confirming job completion.

NOTE: The value chosen should be the lowest value required to prevent delays between documents, and will vary depending on the speed and capabilities of the target printer. A value of 3 should be sufficient for most printers.

6.4.3 Adding additional SPP Enterprise servers for pull print remote jobs

Remote jobs allows users to pull jobs from different locations. Users can store a job on one server, then release the same job at a different location from a printer configured on a different server. Servers listed here are local servers and any remote print servers that will participate in roaming and be gueried for print jobs. To add additional servers, complete the following steps:

- In the **HP AC configuration** utility, go to the **Settings** tile > **SPP Enterprise** tab. 1.
- In the Servers information section, click in an open row, then enter the Fully Qualified Domain Name (FQDN) of a server you want to add, including the IPP port number and press <enter> on the keyboard. (Example: Servername.Domain.com:631)



Click the **Test** button to test the connection to the server. The Messages pane should display *Connection to* spooler OK. Then click Apply.

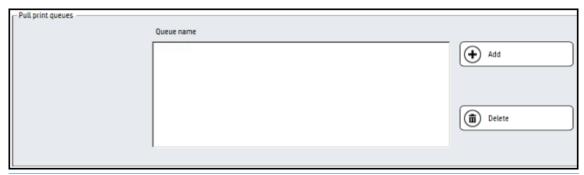
```
6/4/2014 7:28:19 PM - HPAC Secure Pull Print: Device setting saved
6/4/2014 7:28:19 PM - HPAC Agent: Device setting saved
6/4/2014 7:45:50 PM - HPAC-B-1.hpsolstr.com:631: Connection to spooler ok
6/4/2014 7:45:51 PM - HPAC-A-1.hpsolstr.com:631: Connection to spooler ok
6/4/2014 7:47:07 PM - Save successful
```

6.4.4 Adding pull print gueues on the server

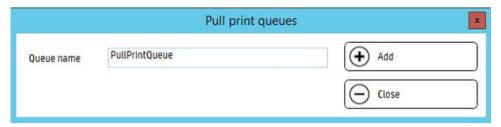
SPP Enterprise pull print queues will allow the server to receive jobs printed from client computers. When jobs are received from client computers, the jobs are stored in the Program Files\HP\HP Access Control\spoolroot \spool\Queue folder, where Queue is the name of the pull print queue. Each job is stored as two files, a DAT file and an INF file. To add a pull print queue, complete the following steps:

In the HP AC configuration utility, go to the **Settings** tile > **SPP Enterprise** tab.

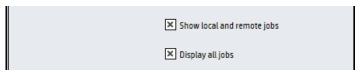
In the Pull Print Queues section, click **Add**.



- When a pull print queue is created from the HP AC configuration utility, a printer definition file is created in the Program Files\HP\HP Access Control\spoolroot\prtr folder. This printer definition file is required to allow the print queue to receive print jobs from client printers.
- In the Queue name field, enter any name for the pull print gueue. Click Add.



- To have all jobs from all servers display automatically on the front panel, select **Show local and remote** jobs. When disabled, the user will need to manually select the Remote Jobs button on the front panel to view all pull print queues. When enabled, there is an option to "Stop at first server with jobs". When this option is enabled, users will see jobs stored on the first server that was detected with stored jobs, instead of jobs from all SPP Enterprise servers.
- NOTE: With card authentication and Show local and remote jobs enabled, when a user presents his or her card at an HP single-function device, all jobs will be printed at once.



To have all jobs display in one job list, select Display all jobs. When disabled, the user will have to select the pull print queue first, prior to viewing the job lists.

6.4.5 Assured Job Delivery

HP AC Secure Pull Print Enterprise offers assured job delivery when using TCPIP/PJL as the communication protocol from the HP AC server to the print device.

Assured Job Delivery offers the following benefits:

NOTE:

- TCPIP/PJL is required.
- Not supported with encryption.
- This is supported only with HP AC Enterprise.

- The Enterprise spooler assures that the delivery of all the pages of the document are successfully sent prior to sending the next document to the print device.
- Validation of the delivery of each page is done, by verifying that each page has been successfully delivered to the output tray of the print device. Only after the validation that all pages have been delivered for the current document will the next document be sent for printing.
- Print data is immediately suspended if the print device reports an OFFLINE error before or during data delivery. Sending of the print data will not resume until the printer reports an ONLINE status.
- If a device fails during printing, HP AC will continue to print that document once the failure is cleared, unless the printer has been rebooted or the job has been canceled by the user.

Complete the following steps:

- Go to the Settings tile and select SPP Enterprise tab.
- 2. Under the options section change the protocol to TCPIP/PJL.
- 3. Click **Apply**.

6.5 Configuring devices for pull printing

In order to allow users to pull jobs from the pull print queue to a device, the device must be configured for pull printing from the HP AC configuration utility.

Prerequisites

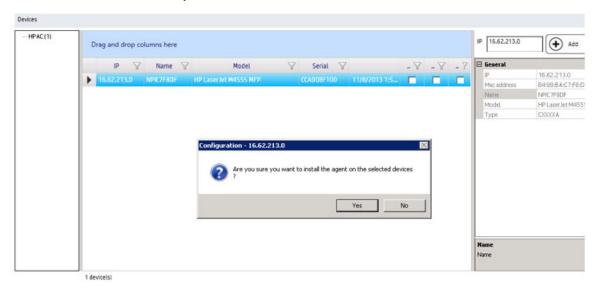
- HP Access Control (HP AC) Agent and HP Access Control (HP AC) Secure Pull Print must be installed on the server.
- Before installing any solution on HP devices, make sure the correct PRN installation file displays in the Installation file field in the **Settings** tile > **Agent** tab.
- The device has been configured for authentication. See Section 5.7, Configuring devices
- Make sure a device administrator password is set on MFPs and matches the device administrator name and password in the **Settings** tile > **Device** tab and the **IRM** tile > **AD Configurator** tab > **General** page.



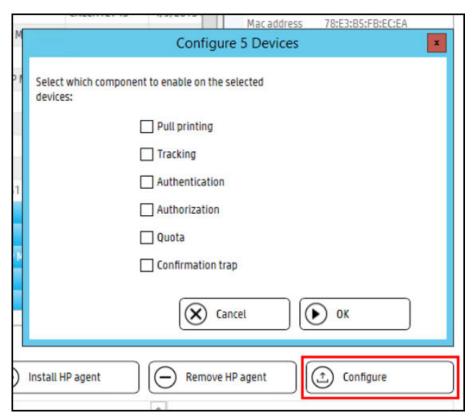
6.5.1 HP multi-function printers

- In the HP AC configuration utility, go to the **Devices** tile.
- 2. Do one of the following:
 - Select the device from the device list
 - Scan for devices on the network

- Enter the IP address of the device
- See Section 4.2.1, Adding devices
- Click Install to send the installation file to the device if the device has not already been configured for 3. authentication. See Authentication. The device may reboot during the installation process. Please wait for the device to return to the "Ready" state.



Select the device from the device list, then click Configure. In the Configure window, select Pull printing. If you want to use IRM authentication and rights management, also select Authentication and Authorization. Click OK.



NOTE:

- When configuring HP AC there may be a requirement to set the device to look at multiple IIS servers. When multiple IIS servers are in the Settings > IIS area, then the option to configure for a different IIS server will appear for the Pull Printing option in the Devices > Configuration window.
- When using multiple IIS servers ensure that the server certificates are configured properly. Refer to Section 4.2.4.3, Creating certificates in a multi-server installation.
- Configuration will be complete in about 30 seconds. Configuration results will appear in the message pane.



- Go to the device EWS to set the authentication method at the device.
 - For a FutureSmart device, go to the Security > Access Control page of the EWS. Click Access Control (HPAC IRM) on the left pane and enable the authentication method required.

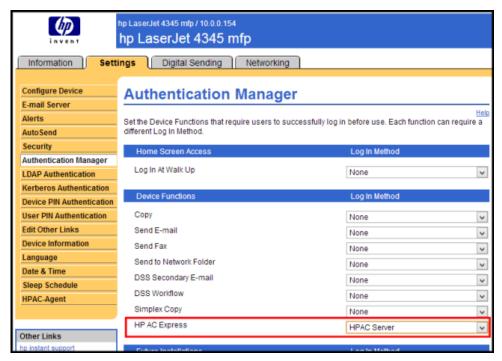


In the left pane, click on Access Control. Then scroll down to HP AC Secure Pull Print and choose the authenticator (I.e. HPAC – IRM Server). Set the HP AC authentication method for each device function to be controlled by HP Access Control.



- Set the lock icon in the Device Guest column for the chosen options.
- For a non-FutureSmart device, go to the Settings > Authentication Manager page of the EWS. In the HP AC Express row, select **HPAC Server** as the Log In Method. Click **Apply**.

Figure 6-8 Authentication manager

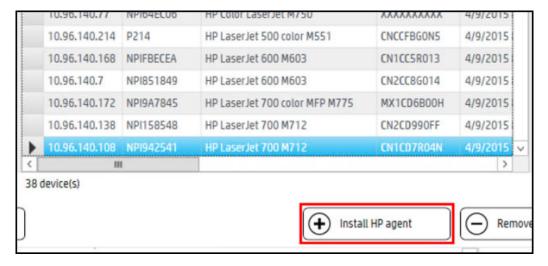


6.5.2 HP single-function printers

Complete the following steps:

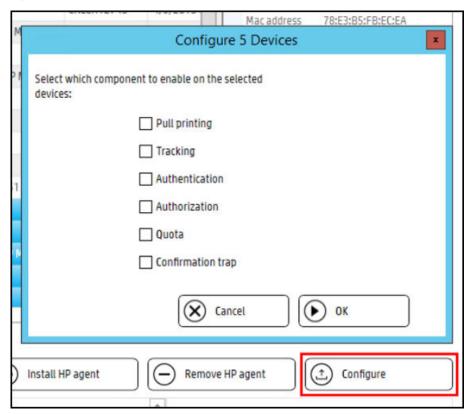
- In the **Devices** tile, select the device from the device list.
- Click Install to send the installation file to the device if the device has not already been configured for authentication. See Authentication. The device may reboot during the installation process. Please wait for the device to return to the "Ready" state.

Figure 6-9 Devices install



Select the device from the device list, then click Configure. In the Configure window, select Pull printing. If you want to use IRM authentication and rights management, also select Authentication and Authorization. Click OK.

Figure 6-10 Devices configure



6.5.3 HP Officejet printers

Prerequisites

These additional prerequisites are required for HP OfficeJet Pro devices:

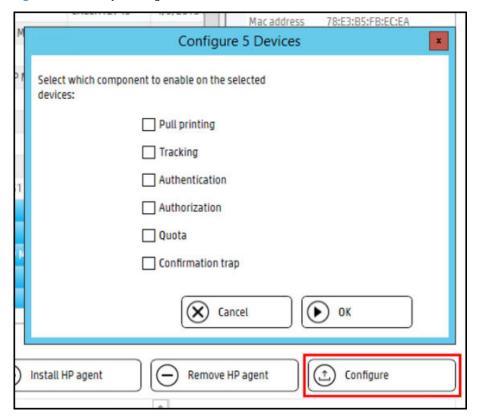
- Make sure the correct OPS certificate or customer certificate displays in the Certificate field in the Settings tile > Device tab.
- Ensure the correct username and password is entered that was specified during the installation of the OPS server. If the password needs to be changed, please refer to the Section 15.18, Reinstalling HP OPS section of this guide.
- If the device has been previously configured on a different server, to be able to configure the settings from the new server you must enable the following setting: Settings tile and under the Device tab check Override OPS setting. Click Test and Apply.



Complete the following steps:

Select the device from the device list, then click **Configure**.

Figure 6-11 Officejet configure



- In the **Configure** window, select the following components:
 - Select **Pull printing** to enable the Secure Pull Print Express app button.
 - Select **Authentication** to enable IRM authentication.
- 3. Click **OK**.

6.5.4 HP PageWide Pro devices

6.5.4.1 HP PageWide Pro

Prerequisites

- Device firmware 1629F (VR 1.2 release) or higher
- PageWide Pro devices will use OPS only if the firmware requires OPS and will prompt for installation
- User database/LDAP/Active Directory is properly configured
- In the IRM tile, rights are properly configured if authorization is required
- Agent and Secure Pull Print Express/Secure Pull Print Enterprise are installed and configured
- HTTP activation is enabled on the server (.NET 3.5.1)

Prerequisites

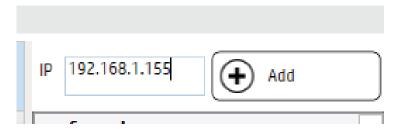
- Secure Pull Printing
- Authentication

- Card or Windows authentication
- Card or code
- Card and code (two factor)
- PIN/PIC
- Authorization for device functions
- Enrollment
- Job accounting
 - Print server tracking
 - Pull print tracking (via server)
 - Glass activity tracking
- NOTE: The following is currently unsupported:
 - Quota for glass activity
 - Allocation
 - Local list authentication

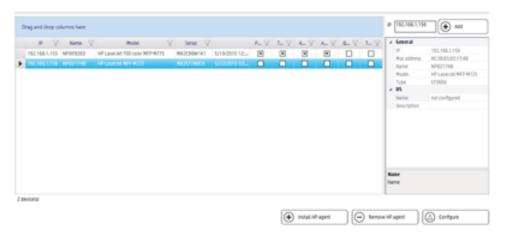
6.5.4.2 Configuring devices

To configure the device, complete the following steps:

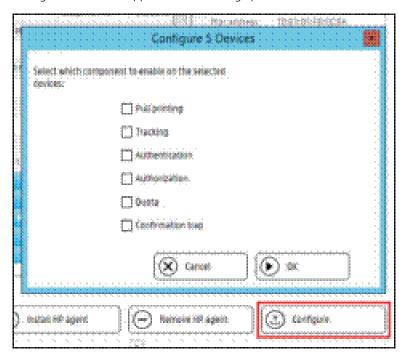
In the device tile, enter the IP or hostname into the IP field and click Add.



Select the device from the list and click **Configure**.



Select Pull printing and Authentication and click OK. Configuration will complete in about 30 seconds. Configuration results appear in the message pane.



6.5.5 XT devices

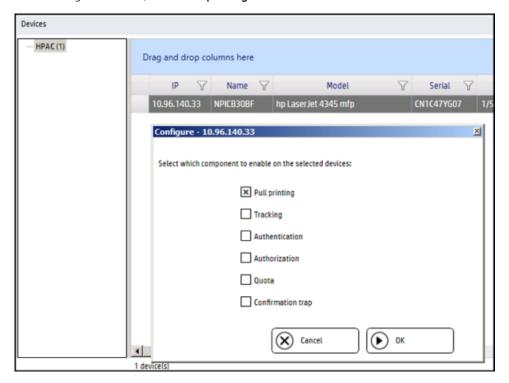
Prerequisites

- Make sure the XT device is connected to a printer and to the network.
- If your server has a firewall, make sure TCP 2000 is open to send configuration files.
- Make sure the IRM authentication method is set to Card Only.
- Make sure the IRM Proximity Reader settings and Card settings are correct. Also, make sure Card ID masking is enabled.
- NOTE: The XT device must be rebooted or power cycled after the card type configuration changes. To power cycle the XT device, unplug the power cord from the device and then re-plug the power cord. Or go to the **Devices** tile, right-click the XT device and select **Reboot device**.

Complete the following steps:

Select the XT device from the device list, then click **Configure**.

In the Configure window, select **Pull printing**. Click **OK**.



The device reboots and then beeps five times, indicating the device is configured.

6.5.6 HP S900 series devices

Prerequisites

Make sure IRM licenses are available on the HP Access Control server. An IRM license is required for each device to allow for walk-up authentication.

MOTE:

- Device configured for authentication. See <u>Section 5.7.7, HP S900 series devices</u>.
- If you change the IRM authentication method to Code Only, you must recycle the HPACWS application pool before authenticating at the device. If an error message displays on the front panel, power off and restart the device.
- By default, card readers are configured to read **HID** and **iClass** card types. If you want the card reader to read different card types, update the card reader before connecting to the printer. Specific parts/kits along with part numbers are required for HIP reader integration on the S900 devices.

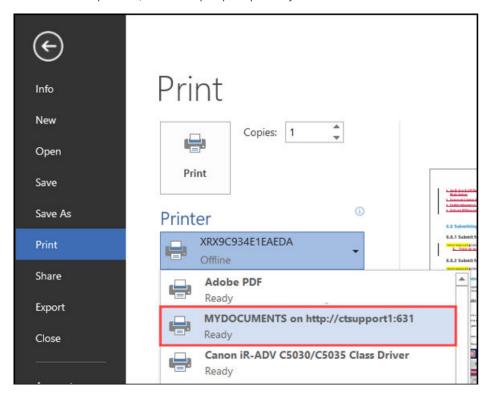
6.6 Submitting jobs for pull print

6.6.1 Submit from a PC

To submit pull print jobs from a PC, complete the following steps:

From an application, such as Microsoft Word or Adobe Reader, select **File** > **Print**.

From the list of printers, select the pull print printer you would like to use.



3. Click Print.

6.6.2 Submit from email

Prerequisites

- The HP AC SPPE Mail service is started.
- Microsoft Office is activated with each application installed and registered to the current user.
- For Adobe PDF documents, Adobe Reader must be installed on the server
- A local printer is installed with a PCL5, PCL6 or PS driver and set as the default printer.
- On a 64-bit server, validate the OS version of Microsoft Office. Open the Windows Task Manager with the Office application open. In the Processes tab, a 32-bit version application displays *32 in the name.
- The settings in the Email tab of the configuration utility are correct. See Section 4.2.2, Email for more information.

From the email client send an email to the email address of the HP AC server (as defined in the Settings tile >Email tab > POP3/IMAP login field.

NOTE: The following file types are supported for pull printing: DOC, DOCX, XLS, XLSX, PPT, PPTX, VSD, PDF, TXT, JPG, JPEG, BMP, GIF, PNG, TIF, and TIFF.

6.7 Pull Printing from the devices

The following sections describe methods to print stored jobs.

- IMPORTANT: When pull printing with SPP Enterprise, if a user has a mix of pull print jobs and shared delegated jobs, not all jobs will release at once if Print All is selected at the device. The user will have to select Print All to print all pull print jobs and then select Print All again to print all shared delegated jobs.
- NOTE: At a device front panel, when **Print All** is selected, jobs remain visible on the screen until all jobs are printed. Tap Refresh to refresh the job list.

6.7.1 HP single-function printers

Prerequisites

- The printer is configured for Pull Printing and Authentication.
- A user has pending jobs in the pull print queue.
- NOTE: On devices without a 4.2" display the user must have a card previously enrolled.

Complete the following steps:

- Present your registered card at the card reader. IRM identifies the registered card, authenticates the user, and locates your stored jobs in the spool folder. All of your stored jobs are then pulled from the spool folder, printed, and then deleted.
- Collect your printed documents.

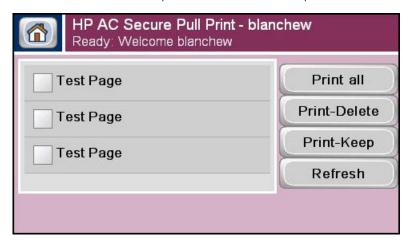
6.7.2 HP single-function printers with a 4.2" display

Prerequisites

- The printer is configured for Pull Printing and Authentication.
- A user has pending jobs in the Pull Print gueue.

Complete the following steps:

- Present your registered card at the card reader, enter your code or Windows credentials.
- Select the documents to be printed from the list and tap the desired **Print** button.



Collect your printed documents.



- When Print-Keep is selected, an "R" will display next to the job list to indicate that the job is retained.
- When all jobs in the list are retained, the Print All button is disabled.

6.7.3 HP multi-function printers

Prerequisites

- The printer is configured for Pull Printing and Authentication.
- A user has pending jobs in the pull print queue.



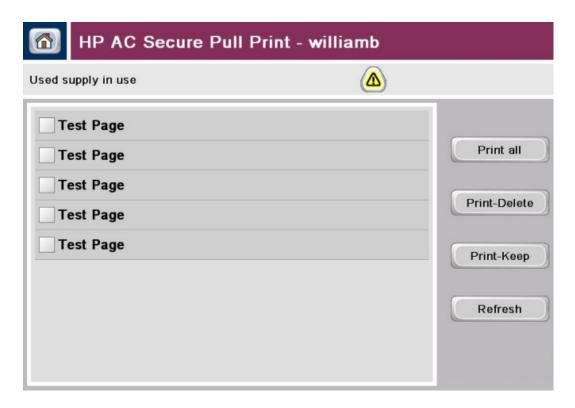
NOTE: The MFP front panel screen may vary, depending on the printer model.

Complete the following steps:

At the device front panel, tap the HP AC application.



- Authenticate at the device using either card, code, or Windows authentication.
- Select documents from the document list. Tap **Print-Delete** to print and then delete the document from the document list. Tap **Print-Keep** to print and keep the document in the document list.
- NOTE: When Print-Keep is selected, an "R" will display next to the job name to indicate that the job is retained.
- NOTE: When all jobs in the list are retained, the **Print All** button is disabled.



6.7.4 HP Officejet Pro printers

Prerequisites

- For users to pull print remote jobs, make sure the Show local and remote jobs checkbox is selected in the HP AC configuration tool > Settings tile > SPP Enterprise tab.
- A user has pending jobs in the pull print queue.
- The printer is configured for Pull Printing and Authentication.

Complete the following steps:

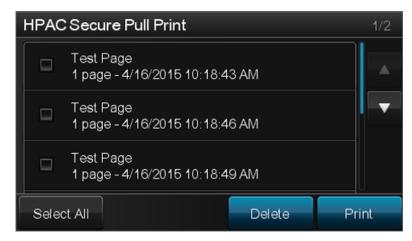
After authenticating at the printer, tap **Apps**.



Tap HP AC Secure Pull Print.



Select documents from the document list. Tap **Print**.



MOTE:

- Due to the limitation of HP Officejet Pro device front panels, the **Print-Keep** button is not available.
- Due to the limitation of HP Officejet Pro devices, no more than 50 jobs can be displayed in the job list. Also, due to a character limitation of the URL (a concatenation of print job URIs that is used to connect to the server), not all selected jobs may be printed or deleted. When using SPP Enterprise, and depending on the length of the server name and queue name, the maximum number of jobs that can be printed or deleted at one time is 10. When using SPP Express, the maximum number of jobs that can be printed or deleted at one time is 14.

6.7.5 XT card readers

Prerequisites

- The XT device is connected to a printer and the network.
- The XT device is configured for pull printing.
- Cards are registered to users.
- IRM authentication set to Card only.
- For users to pull print remote jobs, make sure that Show local and remote jobs is selected in the HP AC configuration tool > Settings tile > **SPP Enterprise** tab.
- A user has pending jobs in the pull print gueue.

Complete the following steps:

- 1. Present your registered card at the XT card reader. The XT device identifies the registered card, authenticates the user, and locates your stored jobs in the spool folder. All of your stored jobs are then pulled from the spool folder, printed, and then deleted.
- 2. Collect your printed documents.

6.7.6 HP S900 Series

Prerequisites

- The printer is configured for **Pull Printing** and **Authentication**.
- A user has pending jobs in the pull print queue.

Complete the following steps:

- 1. To log in at the device, present your card at the card reader or enter your PIC to authenticate.
- 2. Touch Apps. If more than one application is configured on the device, tap the pull printing application.



3. Select documents from the document list. Tap **Print All** to print all documents in the list. Tap **Print- Delete** to print and then delete the document from the document list. Tap **Print-Keep** to print and keep the document in the document list.

NOTE:

- If the IRM authentication method is set to Card + Code (two-factor) and you log out by presenting a proximity card at the card reader, the following message displays: "Authentication failed. Please confirm the card." Tap **OK** to log out.
- If you change the IRM authentication method, you must recycle the HPACWS application pool before authenticating at the device. If an error message displays on the front panel, power cycle the device.
- If a user is logged in and another user presents his proximity card at the card reader, the first user will be automatically logged out and the second user will be logged in.

6.7.7 Touch-to-Release

TTR (Touch-to-Release) is supported in all devices with HP AC Secure Pull Printing configured and licensed. On iOS devices, the identification of the printer is done through a QR code. Android devices can use either the QR code, NFC, IP address, or a previously used/selected printer.

Prerequisites

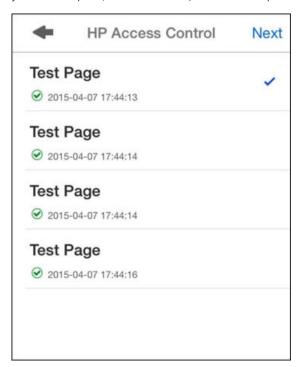
- HP Access Control server version 14.0 or higher installed and configured
- Mobile device connected to same network as the HP Access Control server
- HP ePrint Enterprise app version 1.11.0 or higher installed on the mobile device. QR code enabled on the MFP or Printer (if using QR code for job release)

Complete the following steps:

- 1. Open the HP ePrint Enterprise application on your mobile phone.
- 2. Tap the **HPAC** icon.



Once communication is established with the HP AC server, a list of print jobs will display. Select the ones you want to print, then scan the QR code on the printer or MFP. The documents will now print.



6.7.8 Releasing delegate jobs

Prerequisites

- The printer is configured for Pull Printing and Authentication
- A user has a delegate pending jobs in the pull print queue
- IRM must be set to use Database as the data storage
- NOTE: The MFP front panel screen may vary, depending on the printer model.

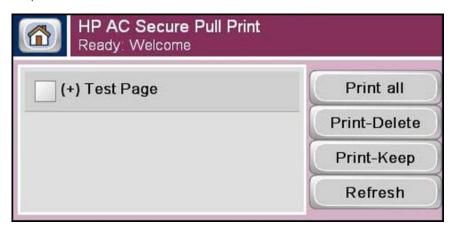
Complete the following steps:

At the device front panel, tap the HP AC application.



- Authenticate at the device using either card, code, or Windows authentication.
- Select documents from the document list. A delegate job is preceded with a (+) symbol. 3.

Tap Print-Delete to print and then delete the document from the document list. Tap Print-Keep to print and keep the document in the document list.



6.7.9 Releasing jobs from a web page

Complete the following steps to use the Secure Pull Print Web page to route jobs from the server to a printer or MFP:

- Open a Web browser and in the address field, enter the following URL, where server is the name or IP address of the server:
 - http://server/mydoc
- When prompted, enter the user name and password, with the user name in the following format: domain\username

Then click **OK** and the HP Access Control (HP AC) Secure Pull Print Express Web page displays:



- 3. Enter the IP address of the printer or MFP in the Address field.
- Click a job from the Jobs list and then click the **Print** button to direct the job to the printer or MFP. To delete a job from the Jobs list, click a job from the list and then click the **Delete** button.
- To refresh the Jobs list, click the **Refresh** button. 5.
- Select **Delete** to delete the job after it is printed. If **Delete job** is unchecked, the job will remain in the Jobs list after it is printed.

6.7.10 HP AC Enterprise — Releasing print jobs from remote print server — User requested

Prerequisites

- The printer is configured for Pull Printing and Authentication.
- For users to pull print remote jobs, make sure Show local and remote jobs is selected in the HP AC configuration tool > Settings tile > SPP Enterprise tab.



A user has pending jobs in the pull print queue.

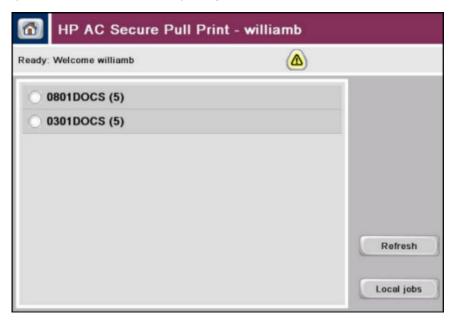
Complete the following steps:

At the device front panel, authenticate yourself and then tap the **HP AC Secure Pull Print** application.

If you have stored jobs in more than one pull print queue, select a pull print queue and tap Select. If there is only one pull print queue on the primary server, the document list displays.



Tap Remote jobs to view stored jobs from other servers. You can tap Local jobs to return to the pull print queues or document list on the primary server.



Select documents from the document list. Tap **Print-Delete** to print and then delete the document from the document list. Tap **Print-Keep** to print and keep the document in the document list.

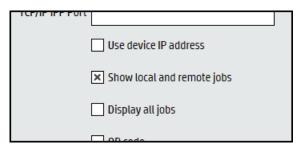
6.7.11 Pull Printing with HP AC Enterprise with Roaming

When users print from client computers to an SPP Enterprise print queue, jobs are stored on the server. Users can then go to any configured printer, authenticate and pull print jobs to the printer.

6.7.11.1 HP single-function printers

Prerequisites

- The printer is configured for Pull Printing and Authentication.
- Cards are registered to users.
- A card reader is connected to the printer.
- For users to pull print remote jobs, make sure Show local and remote jobs checkbox is selected in the HP AC configuration tool > Settings tile > SPP Enterprise tab.



A user has pending jobs in the pull print queue.

Complete the following steps:

- Present your registered card at the card reader. IRM identifies the registered card, authenticates the user, and locates your stored jobs in the spool folder. All of your stored jobs are then pulled from the spool folder, printed, and then deleted.
- Collect your printed documents.
- NOTE: When users first authenticate at a printer, all jobs in all pull print queues on the default server are printed. If the user authenticates again, and no jobs are on the default server, all jobs in all pull print gueues from remote job servers are printed.

6.7.11.2 HP single-function printers with a 4.2" display

Prerequisites

- The printer is configured for Pull Printing and Authentication.
- If you want to use proximity cards, make sure a card reader is connected to the printer.
- For users to pull print remote jobs, make sure Show local and remote jobs is selected in the HP AC configuration tool > Settings tile > SPP Enterprise tab.

TCF/IF IFF FOIL	
Use device IP address	
➤ Show local and remote jobs	
Display all jobs	
□ OD code	

A user has pending jobs in the pull print queue.

Complete the following steps:

- Present your registered card at the card reader. When users first authenticate at a printer, all jobs in all pull print queues on the default server are printed. If the user authenticates again, and no jobs are on the default server, all jobs in all pull print queues from remote job servers are printed.
- 2. A list of pending jobs will be presented. Select your job(s) and tap **Print**.
- 3. Collect your printed documents.

NOTE: When users first authenticate at a printer, all jobs in all pull print queues on the default server are printed. If the user authenticates again and no jobs are on the default server, all jobs in all pull print queues from remote job servers are printed.

7 High availability options

7.1 Network Load Balancing configuration

Network Load Balancing provides high availability for authentication, job accounting data, and releasing pull print jobs.

Prerequisites

- Certificates configured for virtual IP
- Network Load Balancing software configured on the HP Access Control servers
- IMPORTANT: Network Load Balancing is not supported for queues and requires Microsoft Cluster Service.
- NOTE: HP does not certify Network Load Balancing software, and it is the responsibility of the customer and is outside the support of HP Access Control.

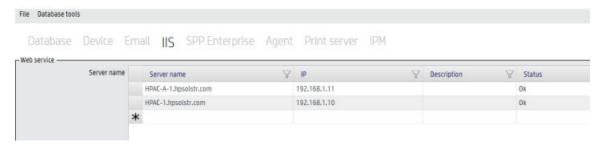
7.1.1 Configure HP Access Control for NLB

Prerequisites

• Network Load Balancing software configured on HP Access Control servers running IRM web services, etc.

Complete the following steps:

 Under the Settings tile, go to the IIS tab and add the virtual server FQDN in the Server Name field in the form.



- Click Test and Apply.
- 3. Do the same on the other server(s).

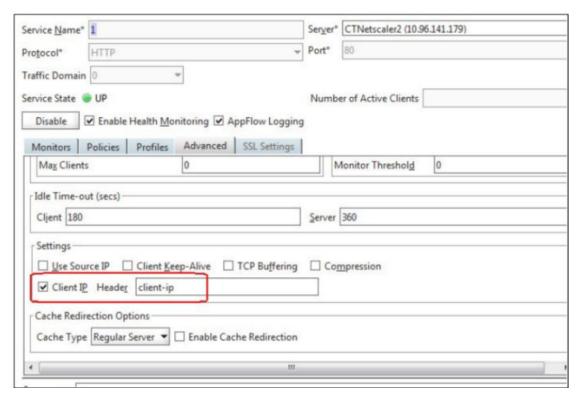
NOTE: If multiple servers have the same pull print queue name, users jobs will be merged into a single job list screen on device front panels, and the queue names will not be displayed. This is to resolve instances where NLB server do not have persistence enabled and jobs can be stored on any node.

7.1.2 Citrix NetScaler

The following steps are to be used with HP AC and Citrix NetScaler:

- 1. Go to Citrix NetScaler > Traffic Management > Load Balancing > Services. There should be two services: one using HTTP protocol, and another using SSL protocol.
- 2. Open one of the services and go to the **Advanced** tab.

- In the **Client IP Header** field, enter "client-ip".
- Open the other service and repeat step 3.

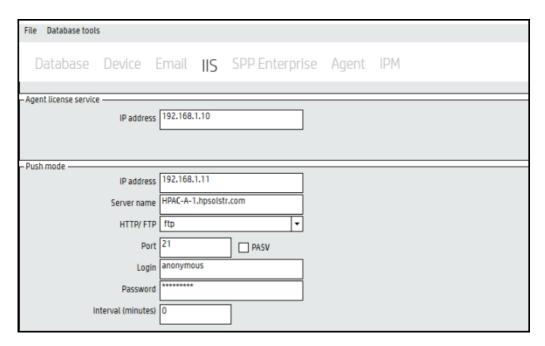


7.1.3 Configure Server Certificates

To create a self-signed certificate, see Section 4.2.4.2, Generating self-signed v3 Certificates.

7.1.4 Configure the License Service

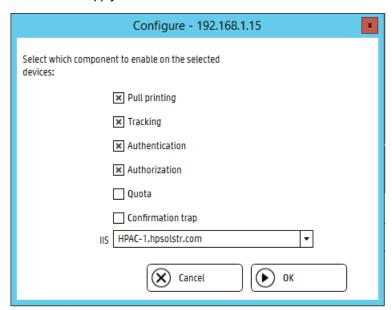
Navigate to the Settings tile > IIS. Under Agent License service, enter the virtual **IP address**.



- Click Test and Apply.
- 3. Repeat on all HP Access Control servers.

7.1.5 Configure devices

- Navigate to the Devices tile. Select the devices to be configured with the virtual server information.
- Click **Test** and **Apply**.



Ensure you import **Printer Definitions** on all servers.

7.2 Configuring HP AC Secure Enterprise for Pull Printing on a Cluster

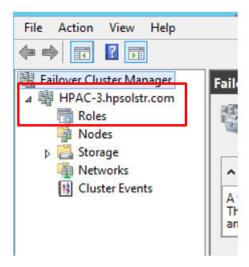
7.2.1 Preparing the Cluster Server for HP AC Enterprise

First you will prepare the server for the HP AC installation. You will create a Virtual Server (IP Address, Network Name, and physical disk resource that is accessible from both servers) with the SPP Enterprise Spooler service.

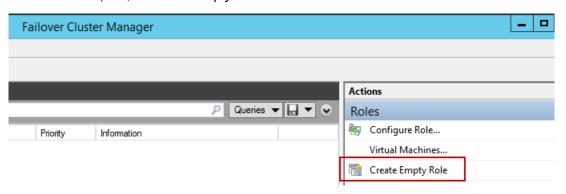
NOTE: Do not stop SPP Enterprise through services.msc when working on a cluster. The services are only to be managed from the Failover Cluster Management tool by bringing the services online or offline. Stopping a clustered component triggers a failover to the other node.

Create a Server Group (Virtual Server)

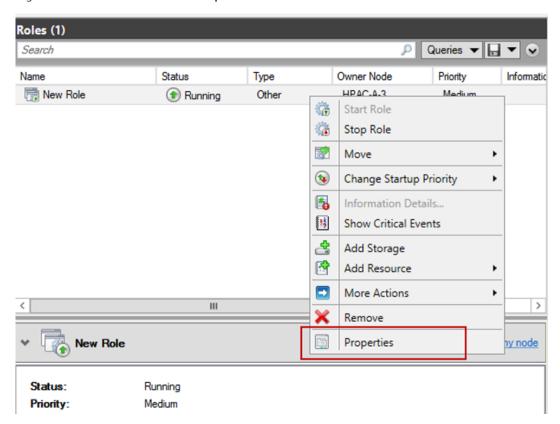
1. Launch Failover Cluster Management. Expand the cluster and click Roles.



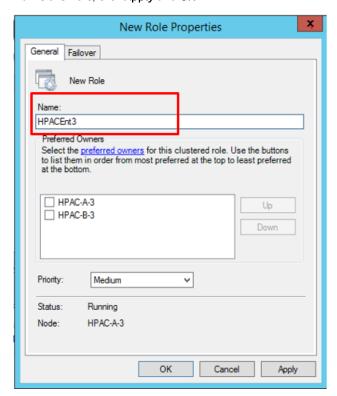
Under the Action pane, click Create Empty Role.



Right-click the New Role and click **Properties**.



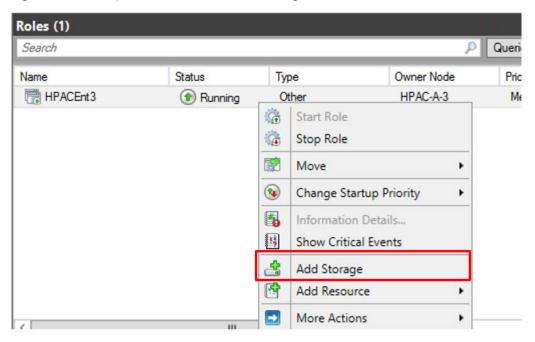
Name the Role, click **Apply** and **OK**.



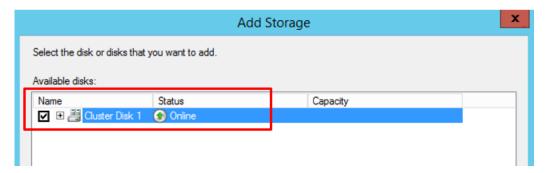
Add Storage

The storage is the location where the HP AC pull print jobs and printer definitions are stored and must be visible from both nodes.

Right-click the newly created role and click **Add Storage**.

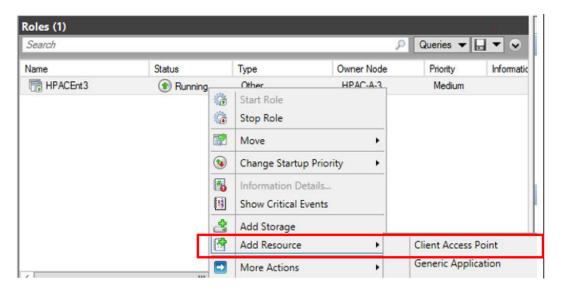


Select the physical disk and click **OK**.

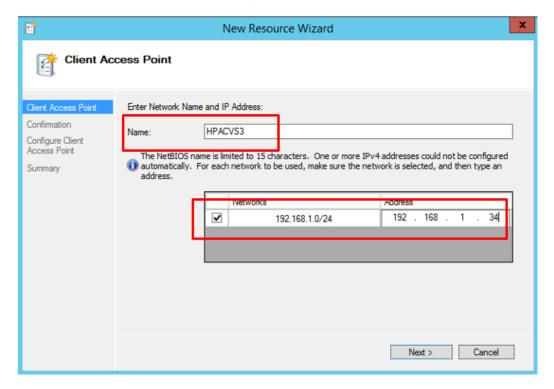


Add Client Access Point

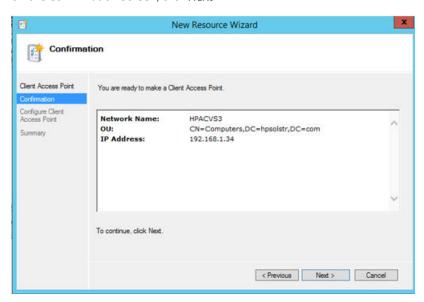
To assign it a virtual IP, right-click the role and choose **Add a Resource** > **Client Access Point**.



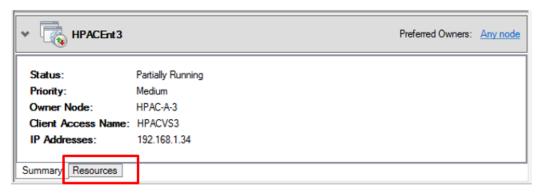
Enter Network Name and IP Address. Click Next.



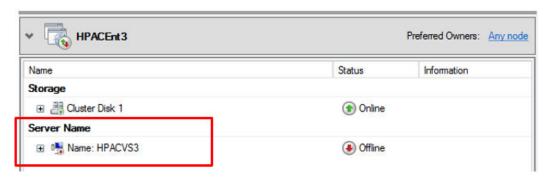
On the Confirmation screen, click **Next**.

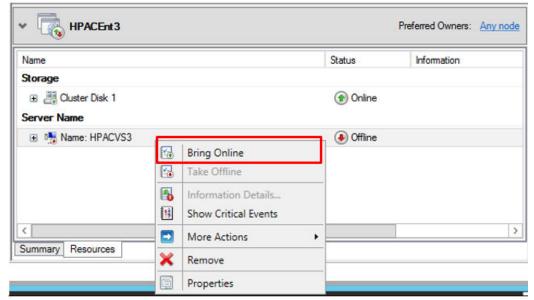


At the bottom of the screen, click **Resources** tab.



Select the Server Name. Right-click and select Bring Online.





IMPORTANT: Wait until the server is **Online** before proceeding



Wait until the server is **Online** before proceeding.

7.2.2 Installing HP AC Enterprise on Node 1

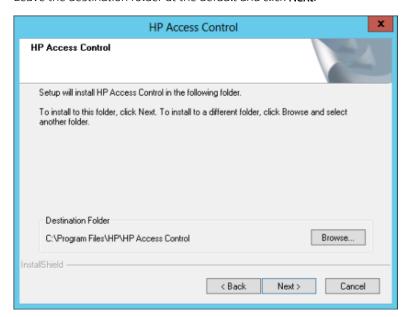
The following steps explain how to install HP AC Enterprise on the first Node in the Cluster.

IMPORTANT: The node must be the owner of the role in order to install the software – in other words it needs to be the Active node in the cluster.

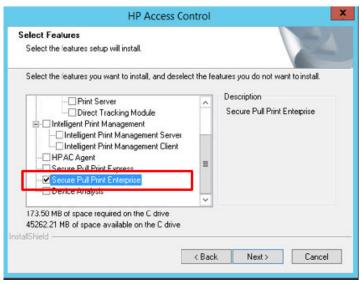
Install HP AC Enterprise

Run the installer as administrator.

Leave the destination folder at the default and click Next.



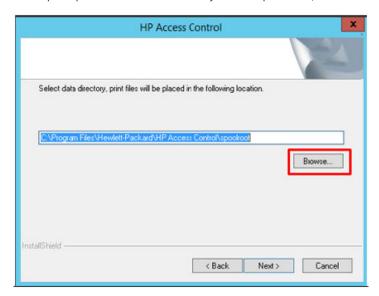
- Select **Server installation** and click **Next**. 3.
- On the Features page, scroll down to select **Secure Pull Print Enterprise** and click **Next**. 4.



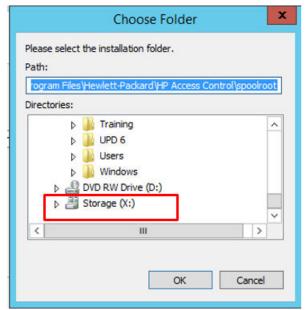
NOTE:

- Ensure you do not install any data collectors on the server in an environment where there are pull print servers only.
- It is not recommended to install the Job Accounting server in a clustered environment.
- If installing the HP AC Agent, ensure that the OPS server references the cluster's virtual IP. You would only install the agent if not using an Active-Active (NLB) cluster for authentication and authorization.
- When using multiple IIS servers ensure that the server certificates are configured properly. Refer to Section 4.2.4.3, Creating certificates in a multi-server installation.

When prompted for the data directory for the spool files, click **Browse**.

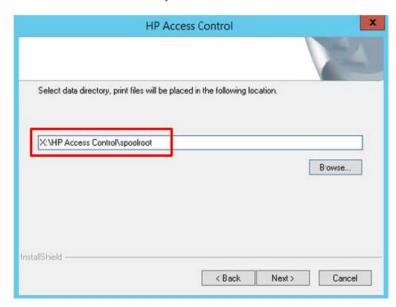


The spool directory must be on a folder that can be accessed by either node and resides on the physical Disk Resource that was previously created. Browse to the Storage disk on your local drive and click **OK**.

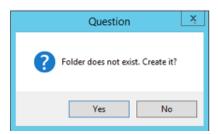


NOTE: This is a disk resource that will always be available only to the Active node

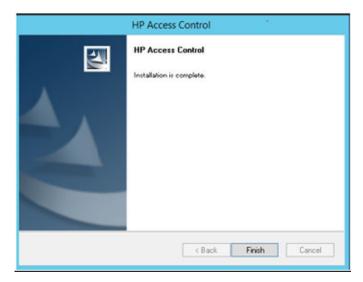
Enter a name for the directory to be created and click **Next**.



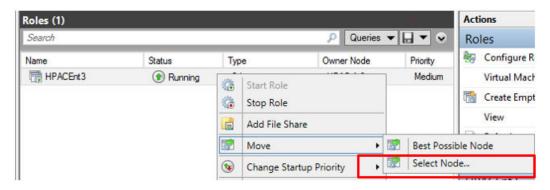
When prompted, click **Yes** to create the folder.



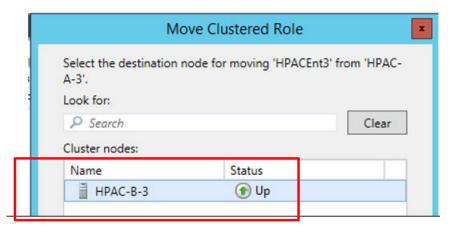
Complete the installation and click **Finish**.



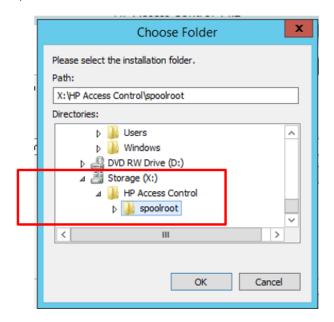
10. Expand the Cluster and go to Roles. Right-click the role and select Move > Select Node....



11. Move the role to the other node.



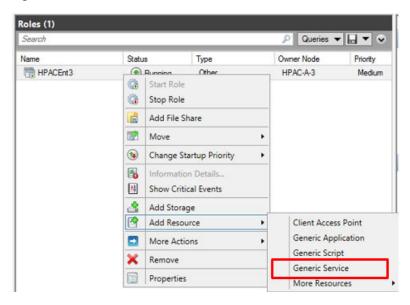
- 12. Run the installer as an administrator.
- 13. Do the same steps to install as you did on the first node ensuring you browse to the same location for the spool files. Click **OK** and then **Next**.



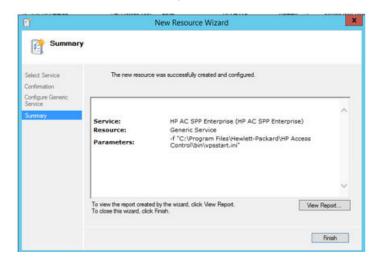
7.2.3 Adding the SPP Enterprise Service to the Virtual Server

Complete the following steps to add the SPP Enterprise service as a role and configure the dependencies for the role: physical disk, virtual IP, and virtual network name.

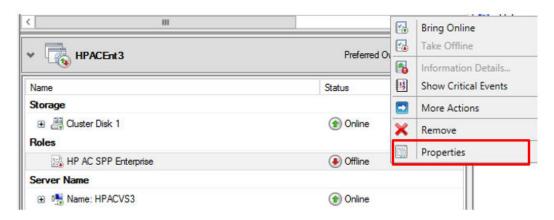
- MPORTANT: Creating dependencies ensures that the resources required are monitored by the cluster service and if a resource fails the cluster service will first attempt to restart the service or if unsuccessful will move the group to another node.
 - Right-click the Role and select **Add Resource** > **Generic Service**.



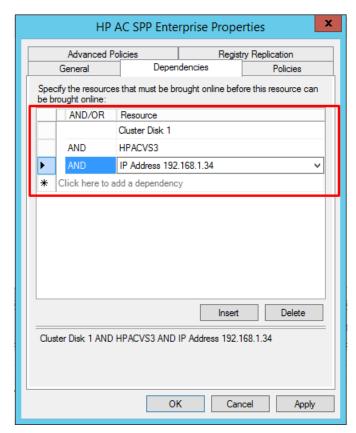
- Select HP AC SPP Enterprise and click Next. If you want to provide high availability for the HP AC SPP Mail Server or the HP AC SPP Purge service then you would add those as well.
 - HP AC SPP Mail: Used for printing mail and attachments
 - HP AC Purge: Deletes expired files and reports on same. Monitoring the HP AC SPP Purge server will ensure that if this service is down for an extended period that the disks don't become full.
- 3. Click **Next** and **Finish** once complete.



In the bottom pane on the Resources tab, right-click **HP AC SPP Enterprise** and go to **Properties**.

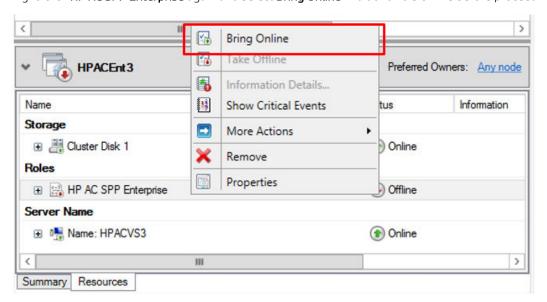


On the Dependencies tab click **Insert**. Add **Cluster Disk**, the server virtual name, and the **IP Address**.



Click Apply and OK.

Right-click HP AC SPP Enterprise again and select Bring Online. Wait until it is online before proceeding.



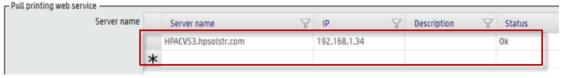
NOTE: Now that the HP AC Enterprise Spooler is a clustered service (monitored), we need to use Failover Cluster Manager to stop and start the service.

7.2.4 Configuring HP AC Enterprise Settings

Complete the following steps to configure HP AC to reference the virtual server. This must be done on both servers, as each server must be configured exactly the same.

- Launch the HP AC Configuration Utility, and go to the Settings tile.
- 2. Go to the **Device** tab and enter the device **Administration password**. Click **Apply**.
- Go to the IIS tab. Under Pull printing web service, modify the local server name by double-clicking an IP address. Enter the virtual server name and IP address and hit <enter> on the keyboard. Click Test and Apply.

SPP Enterprise Device Email IIS Login



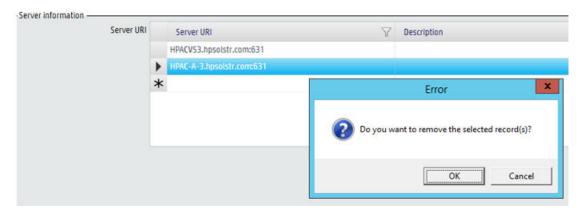
- NOTE: The local server cannot be deleted, but can be edited.
- Go to the **SPP Enterprise** tab. Under **Server information**:
 - Modify the local server name with the clusters virtual server name and hit <enter> on the keyboard.

SPP Enterprise Device Email IIS Login

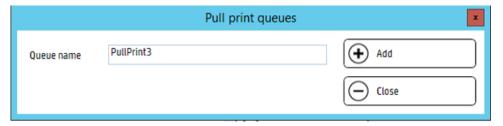


- NOTE: If the environment had additional print servers being used for remote printing, we would add those servers here as well.
- b. Click **Test** and **Apply**.
- Add the node name and hit <enter> on the keyboard.
- Select the node name you just entered and hit < Delete > on the keyboard. Click **OK**. 5.

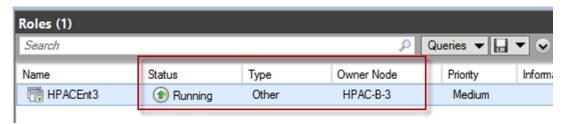
SPP Enterprise Device Email IIS Login



- Click Apply. 6.
- 7. Under Pull print queues, enter the Queue name and click Add.



The changes must be made on both nodes. Go to Failover Cluster Manager and right-click the role to move it to the other node.



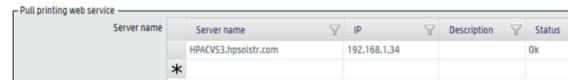
In the HP AC configuration utility, go to the **Device** tab and enter the Administrator password. Click **Apply**.

SPP Enterprise Database Device Email IIS Alias Agent Login

Device ——			
	Administrator user name	admin	
	Administrator password	****	
		Disable device ping	

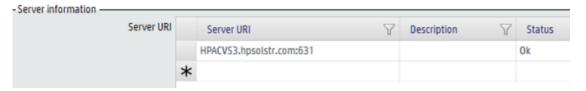
10. Go to the IIS tab and configure the Pull printing web service to point to the virtual server. Click Test and Apply.

SPP Enterprise Device Email IIS Login



11. Click the SPP Enterprise tab and modify the name by double-clicking the local server name with the clusters virtual server name. Hit <Enter> on the keyboard. Click **Test** and **Apply**.

SPP Enterprise Device Email IIS Login



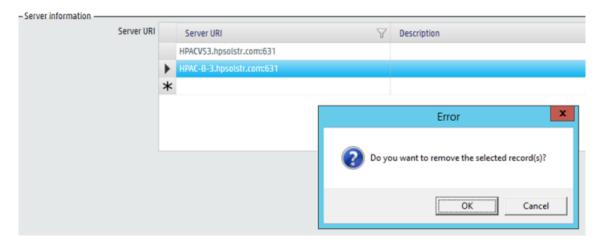
12. Add the node name and click **Apply**. Wait for the Save Successful message to appear before proceeding.

Device Email IIS SPP Enterprise

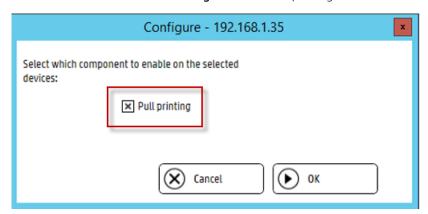


13. Delete the node name from the Server information section. Click **OK**.

SPP Enterprise Device Email IIS Login



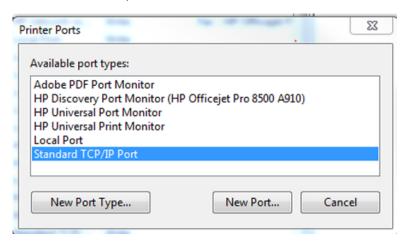
- 14. Click Apply.
- **15.** Go to the **Devices** and add devices. See <u>Section 4.2.1</u>, <u>Adding devices</u>
- 16. Click the device row and select **Configure**. Select Pull printing and click **OK**.



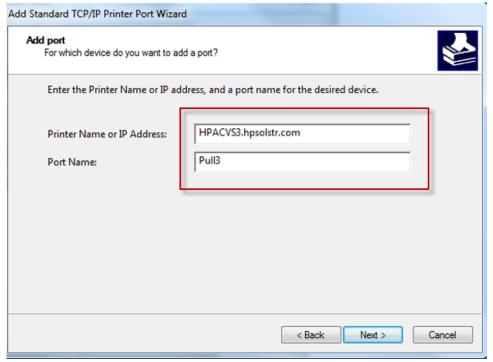
7.2.5 Install the Enterprise Pull Print Queue on the Client

- Install the printer with all the features required in your environment (i.e. color, duplex, etc.).
- After the printer is installed, right-click the printer and select **Printer properties**. Go to the Ports tab and click Add Port.

Choose Standard TCP/IP Port and click New Port.

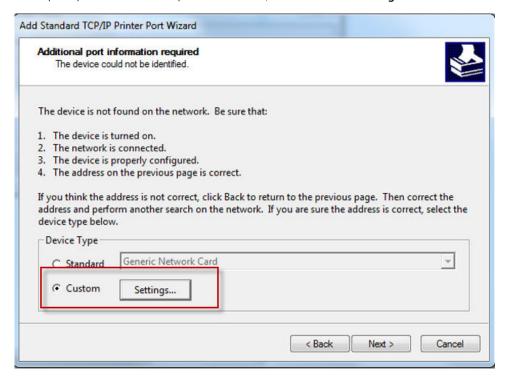


The Add port wizard will start. For Printer Name or IP Address enter the virtual IP of the cluster server. Click Next.



NOTE: The virtual IP or virtual server name is used so that the client will still be able to print when the role moves from one node to another. If the queue is pointing to a physical node, if the node is passive the printing will stop. This configuration is for both point-and-print queues and direct LPR queues on client PCs.

When prompted for additional port information, choose **Custom Settings**.

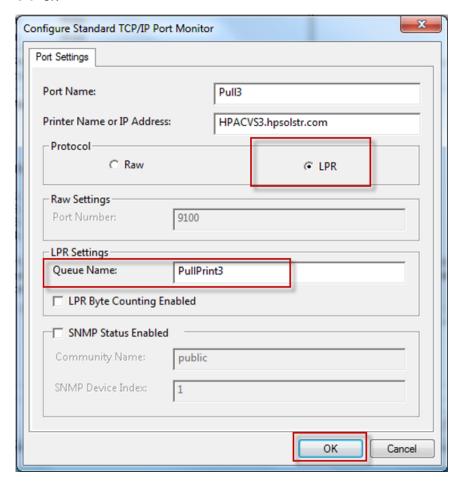


On the **Configure Standard TCP/IP Port Monitor** screen, do the following:

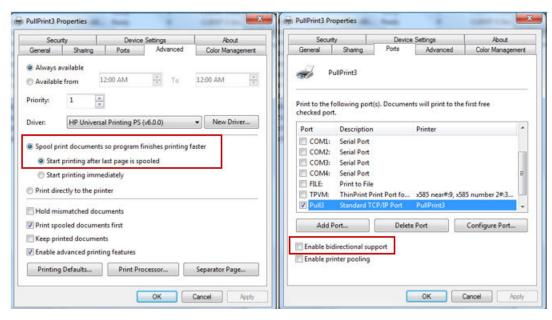
For **Protocol**, select **LPR**

For Queue name, enter the name of the queue created in the HP AC configuration utility (Settings tile > SPP Enterprise tab > Pull Print Queues).

Click **OK**.



- 7. Complete the port creation.
- Complete the installation. 8.
- 9. Change the Properties of the printer to start printing after the last page is spooled and disable bidirectional support.



NOTE:

- We are disabling bidirectional support because it is not communicating directly to a printer, but to the HP AC Enterprise spooler.
- We change to **Start printing after last page is spooled** because it is required when using HP AC IPM.

7.3 Installing HP Access Control (HP AC) Secure Pull Print Enterprise on a cluster for high availability and load balancing

7.3.1 Introduction

With Microsoft Cluster Service (MSCS) you can use a failover cluster to safeguard your SPP Enterprise stored jobs. A failover cluster is where two or more servers (nodes) are connected so one can take over for the other in the event of a hardware or software failure.

IMPORTANT: Make sure the server cluster is installed according to the best practices set forth by Microsoft. Also make sure the computers (nodes) in the cluster are identical in hardware and conform to the requirements for Microsoft Cluster Service.

NOTE:

- Start the nodes one at a time. Wait until the node is up and running before starting additional nodes. If you do not wait, the disk risks becoming corrupted.
- Make sure the NLB is installed according to the best practices set forth by Microsoft. Also make sure the servers (hosts) in the NLB cluster are identical in hardware and conform to the requirements for Microsoft NLB Service.

With Microsoft Network Load Balancing (MS NLB) you can use NLB servers (also called hosts) in a cluster communicate to provide key benefits on the web services such as scalability and high availability. With scalability, NLB scales the performance of a server-based program, such as a Web server, by distributing its client requests across multiple servers within the cluster. As traffic increases, additional servers can be added to the cluster, if needed. With high availability, NLB provide fault tolerance on the web services by automatically detecting the failure of a server and repartitioning client traffic among the remaining servers within ten seconds, while providing users with continuous service.

7.3.2 Installing HP AC SPP Enterprise using an existing MS Cluster and a MS NLB cluster

To set up SPP Enterprise on a pre-configured cluster installation, and then use NLB to host all its web services, perform all the steps provided below.

7.3.2.1 In the existing MS Cluster, create a service group (virtual server)

First you need to create a service group, also known as an application (virtual server). The server group consists of an IP address, a network name, a physical disk, and a number of services that it starts, stops, and monitors.

Create service group

- Go to Start > All Programs, Administrative Tools, and then click Failover Cluster Management.
- Expand the console tree under the cluster that you want to configure.
- NOTE: The cluster name cannot be the same as the computer name of either node. For example, the computer names of the two nodes are HPAC-N1 and HPAC-N2, and the Cluster Name is HPAC-CL.
- 3. Right-click Services and Applications, then click More actions and Create Empty Service or Application.
- In the center pane right-click **New service and application** and click **Properties**. 4.
- On the General tab type, in the Name field, enter the service group name. Click **OK**.

Add storage/physical disk

- 1. Right-click the service group and click **Add storage**.
- Check the physical disk needed and click **OK**.

The physical disk is now added to the service group.

Add network name and IP address

- Right-click the service group and click **Add a resource** and then click **1 Client Access Point**.
- 2. Configure Network Name and add IP Address resource of the Virtual server.
- 3. Click **Next.** Wait for Client Access Point confirmation. This may take a few minutes.
- 4. Click Next.
- 5. Click Finish.
- Use the Failover Cluster Management to bring the SPP Enterprise server online, and move the virtual server to the node where you want to install SPP Enterprise server.



7.3.2.2 Install SPP Enterprise on the active node

To install SPP Enterprise, complete the following steps:

- Copy the HPAC.exe installer in the active node, double-click the HPAC.exe file to start the installer. The installation must be **Run as administrator**.
- When the installation program is launched, select the language for the installation, and then click **OK**. 2.
- Read the end-user license agreement and then click **Yes** to accept. 3.

- On the Setup Type page, click **Server installation**. Click **Next**.
- 5. On the Select Features page, click **Secure Pull Print Enterprise**. Click **Next**.
- Select the location for the data directory. The folder must be one that can be seen by either node, that is, it resides on the Physical Disk Resource you created. Click Next.
- Follow the on-screen instructions, then click **Finish**.

7.3.2.3 Install SPP Enterprise on the second node

To install SPP Enterprise on the second node, complete the following steps:

- 1. Log on to the second node.
- Open the Failover Cluster Management program. If the console tree is collapsed, expand it. 2.
- Right-click your service group and move the service group to the second node.
- Install SPP Enterprise as described before on the second node. Specify the same location as you did before, for the data files.

7.3.2.4 Add SPP Enterprise service to the virtual server

To add the SPP Enterprise service to the virtual server, complete the following steps:

- Open Failover Cluster Management.
- 2. If the console tree is collapsed, expand the tree under the cluster that you want to configure.
- Expand Services and Applications.
- Right-click the service group you created, select **Add a resource** and click **4 Generic Service**. 4.
- 5. Select **HP AC SPP Enterprise** and click **Next**.
- 6. Click Next.
- 7. Click Finish.
- In the center pane, right-click HP AC SPP Enterprise and click Properties.
- On the **Dependencies** tab, Insert the Physical disk, IP Address, and Network Name.
- **10.** Click **OK**.

7.3.2.5 Bring the SPP Enterprise service online

- ⚠ CAUTION: NEVER use services.msc to start or stop the SPP Enterprise service when working in a cluster installation. These services are ONLY to be managed (started/stopped) from the Failover Cluster Management tool by bringing the services online or offline.
 - 1. Open Failover Cluster Management.
 - Expand Services and Applications, and then click the service group. 2.
 - Right-click **Bring this service or application online**.

As the service or application moves, the status is displayed in the center pane. Because of the defined dependencies this brings the SPP Enterprise service online.

7.3.2.6 Install HP AC on each server (host) of the NLB cluster

- Copy the HPAC.exe installer in the server, double-click the HPAC.exe file to start the installer. The installation must be **Run as administrator**.
- 2. When the installation program is launched, select the language for the installation, and then click **OK**.
- 3. Read the end-user license agreement and then click **Yes** to accept.
- 4. On the Setup Type page, click **Server installation**. Click **Next.**
- On the Select Features page, click HP AC Agent (NOT the one under Job Accounting) and Secure Pull Print Enterprise. Click Next.
- Keep the default location for the data directory. Click **Next**.
- Follow the on-screen instructions then click **Finish**.

Perform the steps above on every host of the NLB cluster.

7.3.2.7 Configure the Admin Console settings on each NLB host

- In the HP AC Admin Console go to the Settings tile > SPP Enterprise tab > Server Information section.
- In the Server URI field, double-click the local server address to edit the Server URI. Replace the local server address with the virtual server created in the MS Cluster before (Example: HPAC-CL.domain.com:631). Click Apply.

Perform the steps above on every host of the NLB cluster.

7.3.2.8 Configure the Admin Console settings on each node of the cluster

- 1. In the HP AC Admin Console in the active node, go to the Settings tile > IIS tab > Server Name section.
- In the Server Name field, double-click the local server address to edit the Server Name. Replace the local server name and IP with the virtual server name and IP created in the MS NLB. Click Apply.
- 3. In the Agent license service section, use the IP address of the MS NLB virtual server. Click Apply.
- In the HP AC Admin Console in the active node, go to the Settings tile > Device tab > Device section.
- 5. In the Administrator password field, enter the password used to enter the EWS of devices. Click Apply

Perform the steps above on every node of the MS Cluster.

⚠ CAUTION: The PullPrinthost in the \Bin folder should reflect the long and short name of every node in the MS Cluster and the MS NLB, this for every node in the MS Cluster configuration and the MS NLB configuration.

Testing the configuration:

- Add the SPP Enterprise printer on client computers and make sure printed jobs are stored in the spool folder on the shared drive.
- Make sure the user can release the job on a configured device.
- Stop one of the hosts in the NLB and make sure the user can still authenticate and release his jobs.
- Start the host and stop the other one, making sure the user can still authenticate and release his jobs.
- Move the group that contains the SPP Enterprise Service to the other node in the cluster and repeat the testing.

8 Configuring clients

8.1 HP AC Express

8.1.1 HP Access Control Express print client

See Section 6.1.2, Configuring a Pull Print printer with HP AC Express

The HP Access Control Express Print Client installs print server-less pull printing and enables encryption. The SPPE Print Client applies to all currently installed TCP/IP and LPD printers on the client computer.

8.1.1.1 Print server-less printing with HP AC Express

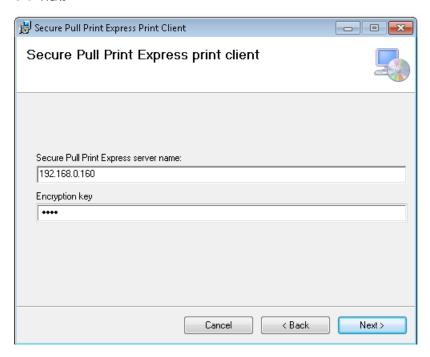
The print server-less pull printing feature eliminates the print server from your printing environment and reduces the number of overall servers. The SPPE Print Client application is installed on a client workstation, allowing the user's pull print jobs to be routed and stored in a shared network folder on the SPPE server.

Storing the user's jobs on a network folder allows for pull printing even if the client workstation is offline. This is different from client based pull printing with local job storage that is available with HP AC Enterprise only. Client based pull printing stores the job locally on the client PC. HP AC Express stores the job in a network folder.

Complete the following steps:

- Copy the HP AC Express Print client file from the server (located in the Program Files\HP\HP Access Control \client setup folder) to the client workstation.
- From the client workstation, right-click the installation file and select Run as administrator. Click Next.
- 3. Verify the selected installation folder and usage rights. Click **Next**.
- Enter the SPPE server name or IP address and the encryption key, if using.

5. Click Next.

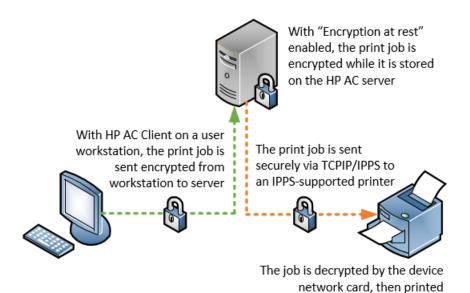


- Confirm installation and click Next. 6.
- 7. When installation is complete, click **Close**.
- Add a physical printer to the client workstation if one is not installed. It is recommended to add a printer that has the most features that will be used for printing, such as color, duplex, etc.
- Go to the Properties window of the physical printer and change the port to the HPACSPPE port. The HPACSPPE port allows all print jobs to be stored on the designated server.

8.1.1.2 Encryption

Prerequisites

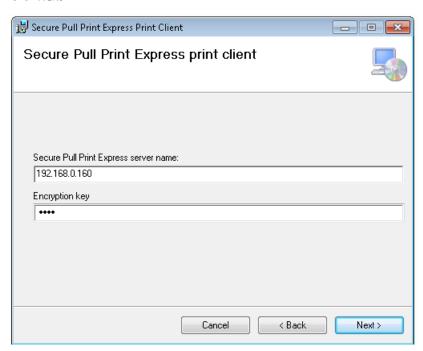
- Encryption at rest enabled on the HP Access Control server (Settings tile>SPPE/SPP Enterprise>Pull printing
- TCPIP/IPPS selected as the printing protocol on the HP Access Control server
- Devices support and have IPPS enabled



Installing the HP AC Express Print Client will enable end-to-end encryption form the user workstation to the printer using AES 256 encryption.

Complete the following steps:

- Copy the HP AC Express Print client file from the server (located in the C:\Program Files\HP\HP Access Control\client setup folder) to the client workstation.
- 2. From the client workstation, right-click the installation file and select Run as administrator. Click Next
- 3. Verify the selected installation folder and usage rights. Click **Next**.
- Enter the SPPE server name or IP address and the encryption key if using. 4.
- 5. Click Next.



Confirm installation and click **Next**. When installation is complete, select **Close**.

8.1.2 Adding a pull print gueue on the client PC

- Add a direct IP print queue:
 - Open Print Manager: select **Start** and type **Print Management** in the **Search program and files** box.
 - b. Expand **Print Servers**, right-click on the local server and click **Add Printer**.
 - c. Select Add a TCP/IP or Web Service Printer by IP address or hostname then select Next.
 - d. Select **TCP/IP Device** from the drop down.
 - Type the IP address of a LaserJet device. e.
 - f. Create a name for the port to reflect an HP AC Pull Print port.
 - Uncheck **Auto detect the printer driver to use**. q.
 - h. Click Next.
 - i. Select one of the driver options and click **Next**.
 - į. Locate your Universal Print Driver and complete the installation.
 - Be sure to share this printer with a name that reflects an HP AC Pull Print Queue. k.
- Create an Express port. Once the installation of the direct IP queue is complete, you will create a new Enterprise port that points to the HP AC print queue.
 - In Print Management, right-click **Ports** and select **Add Port**.
 - b. Select HP AC Secure Pull Print Express Port and click New Port.
 - c. Select **Next** on the wizard prompt.
 - d. Under Port Name, assign a name that will reflect a pull print port then select **OK**.
 - Close the printer ports window.
- Assign the Express port to the Pull Print gueue. Now that the port is created, it needs to be assigned to the print queue.
 - Right-click on the original TCP/IP printer that was created in the first section of this document and select the **Ports** tab.
 - b. Place a check mark next to the Enterprise port you created in section 2 then click **OK**.
 - Select the **General** tab and print a test page. c.
 - Verify the test page has printed by navigating to the HP AC SPP Express tile in the HP AC admin console.
 - Once again, verify that this print queue is shared.

8.2 HP AC Enterprise

NOTE: If encryption, rules based printing or delegate group printing is required then LPR must be used.

Add printers on client computers using the Internet Print Protocol (IPP) or Line Printer Remote (LPR) protocol to connect to pull print queues on the server.

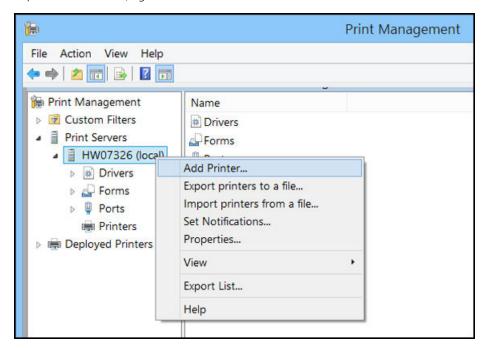
8.2.1 Adding a printer when using Client-based pull printing with local job storage

Prerequisites

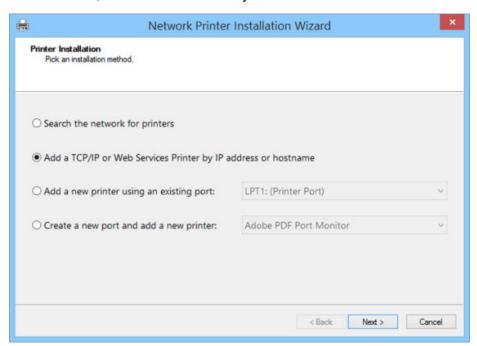
HP AC Enterprise Print Client installed and configured for local job storage.

When Local Job Storage is installed on the client workstation, a port with the name of the Enterprise pull print queue that was created in the HP AC configuration utility > Settings > SPP Enterprise > Pull Print Queue section is automatically installed. After the Enterprise Client with Local Job Storage is installed on a user workstation, complete the following steps to add a physical printer and then assign the installed pull print queue port to the physical printer.

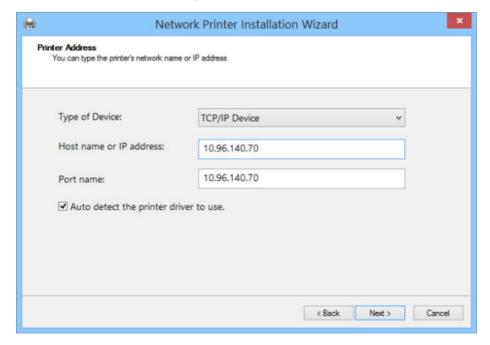
- Add a direct IP print queue
 - Open Print Manager: select **Start** and type **Print Management** in the **Search program and files** box.
 - b. Expand **Print Servers**, right-click the local server and click **Add Printer**.



Select Add a TCP/IP or Web Service Printer by IP address or hostname then select Next. c.

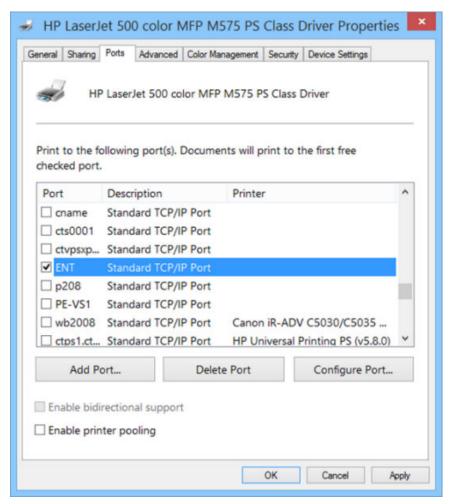


Select **TCP/IP Device** from the drop down. d.



- Type the IP address of a LaserJet device. e.
- f. Create a name for the port to reflect an HP AC Pull Print port.
- Uncheck Auto detect the printer driver to use. g.
- h. Click Next
- Select one of the driver options and click **Next**. i.

- Locate your Universal Print Driver and complete the installation. į.
- k. Be sure to share this printer with a name that reflects an HP AC Pull Print Queue.
- Assign the Enterprise port to the Pull Print queue. Now that the port is created, it needs to be assigned to the print queue.
 - In the TCP/IP printer properties window, select the Ports tab. a.
 - b. Place a check mark next to the Enterprise port named after the pull print queue then click OK.



- Select the **General** tab and print a test page. c.
- d. Verify the test page has printed by navigating to the Program Files\HP\HP Access Control Print Client \bin\pullsvc\spool folder on the client workstation. The spool folder is a hidden folder, so make sure to change the folder settings to view hidden folders. Also make sure the jobs display in the HPAC SPP Enterprise tile in the HPAC admin console on the server.
- NOTE: If Local Job Storage is installed along with Quota or IPM, after assigning the Enterprise port to the pull print queue, the port will automatically change to have "HPACJA:" at the beginning of the port name. This shows that the pull print gueue is also configured to use guota or IPM.

8.2.2 Adding a printer to use Internet Printing Protocol (IPP)

Prerequisites

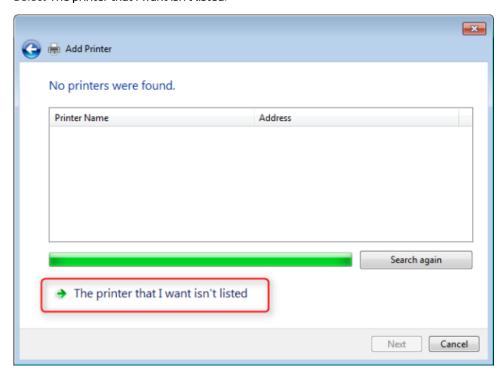
- NOTE: If you will be using double-byte characters in document names, it is recommended to print using the IPP protocol.
 - On the client desktop, make sure the Windows Component Internet Printing Client is enabled.
 - For use with the enterprise spooler
 - Ensure a queue has been previously created on the HP Access Control server under the Settings Tile > SPP Enterprise tab.
 - To add a printer, you must have local administrator rights.

Complete the following steps:

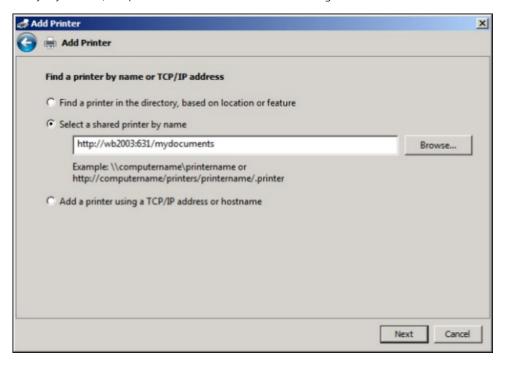
Go to **Devices and Printers** and click **Add a printer**.



- Click Add a network, wireless or Bluetooth printer. 2.
- 3. Select The printer that I want isn't listed.



In the **Select a shared printer by name** field, enter http://ServerName:631/QueueName, where ServerName is the name or IP address of the HP Access Control server, 631 is the port used to access the HP Access Control server, and *QueueName* is the name of the pull print queue added through the HP AC configuration utility. By default, the port used is 631 but this can be changed. Click **Next**.



- Select a printer driver with all features, such as color, duplex, etc., necessary for the printing environment. Click Next.
- After you've successfully added the printer, click **Next**. Then click **Finish**.

8.2.3 Adding a printer to use Line Printer Remote (LPR) protocol

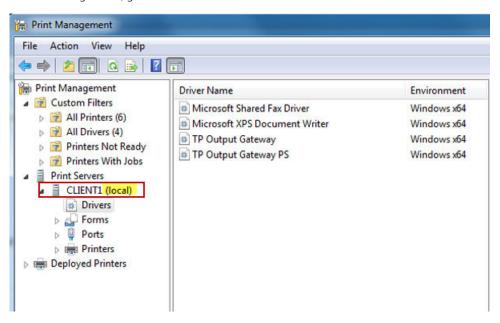
Prerequisites

- To add a printer, you must have local administrator rights.
- On the HP Access Control server, make sure the Windows Component Print Server for UNIX, which uses the LPR protocol, is disabled. The HP AC SPP Enterprise service must be the only service to use the LPR protocol. If you still want to use port 515 for regular Windows printing, port 515 can be changed in the SPP Enterprise settings.
- Ensure a queue has been previously created on the HP Access Control server under the Settings Tile > SPP Enterprise tab.

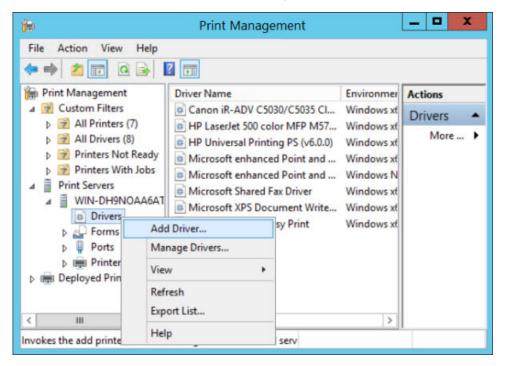
Complete the following steps:

Go to Control Panel > Administrative Tools and open **Print Management**.

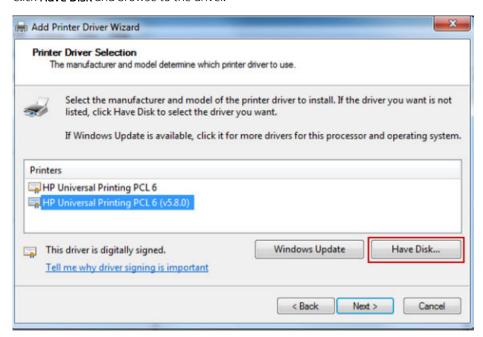
In Print Management, go to Print Servers > local machine.



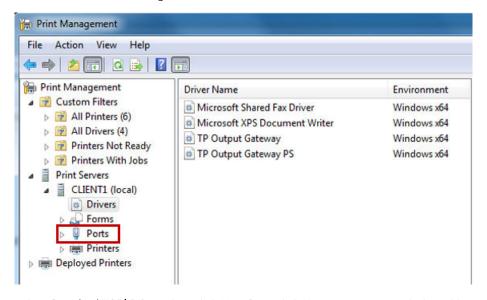
Right-click **Drivers** and choose **Add Driver**. The **Add printer driver** wizard starts.



Click Have Disk and browse to the driver.

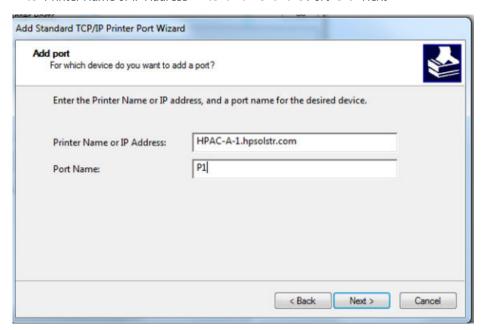


Go to the Ports node and right-click **Ports** and then click **Add Port**.

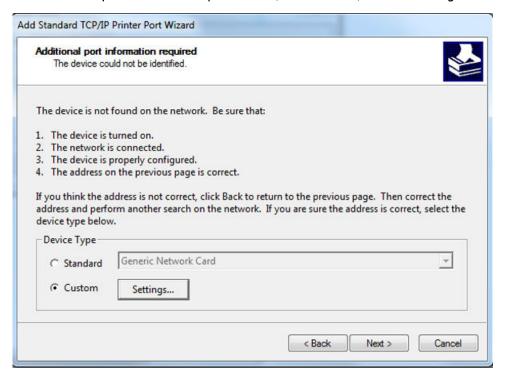


Select Standard TCP/IP Port, then click New Port. Click Next to continue with the Add Port wizard.

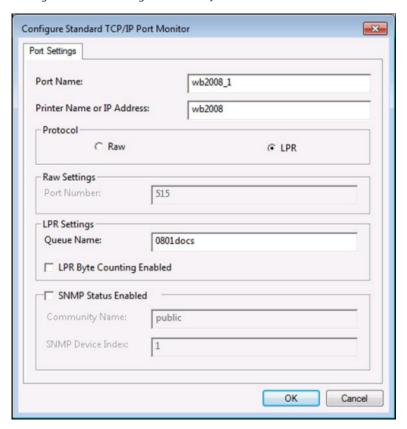
Enter Printer Name or IP Address. Enter a name for the Port. Click Next.



In the Additional port information required screen, select Custom, then click Settings

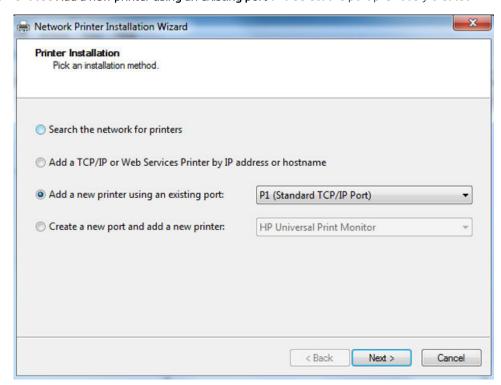


Under Raw Settings, select LPR. For Queue Name, enter the name of the pull print queue that was added through the HP AC configuration utility on the server. Click **OK**. Then click **Next**.

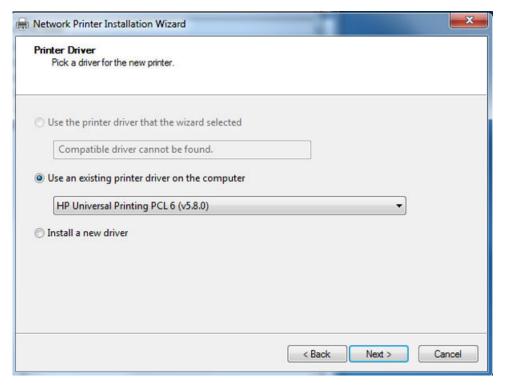


- 10. Click Finish.
- 11. Go to the Printers node and select **Add a printer**.

12. Choose Add a new printer using an existing port and select the port previously created.



13. Choose **Use an existing printer driver on the computer** and click **Next**.

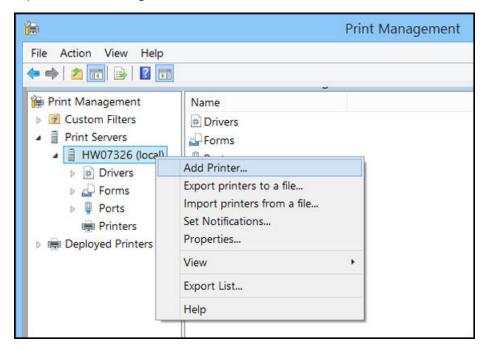


14. After you've successfully added the printer, click **Finish**.

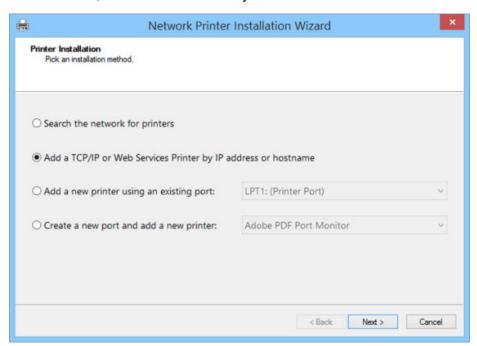
8.2.4 Add a traditional shared printer on the HP AC server

The purpose of this section is to outline the steps to utilize the HP AC Enterprise spooler in a point and print environment. This hybrid configuration is an option for customers who wish to utilize a standard Windows point and print queue vs. the Enterprise Print Queue. Implementing this method will restrict the number of supported devices to the number of devices supported by the Windows print server.

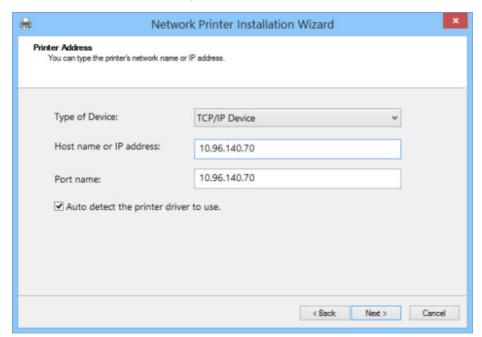
- NOTE: If encryption at rest is required use of the SPP Enterprise Port is required. Please review Section 8.2.5, <u>Installing a shared printer with the HP Enterprise Port</u>
 - Add a direct IP print queue.
 - Open Print Manager: select Start and type Print Management in the Search program and files box.
 - b. Expand **Print Servers**, right-click on the local server and click **Add Printer**.



Select Add a TCP/IP or Web Service Printer by IP address or hostname then select Next. c.

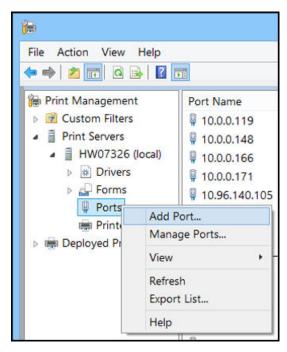


Select **TCP/IP Device** from the drop down. d.

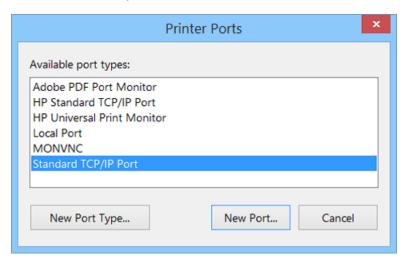


- Type the IP address of a LaserJet device. e.
- f. Create a name for the port to reflect an HP AC Pull Print port.
- Uncheck Auto detect the printer driver to use. g.
- h. Click Next.
- Select one of the driver options and click **Next**. i.

- Locate your Universal Print Driver and complete the installation. j.
- Be sure to share this printer with a name that reflects an HP AC Pull Print Queue. k.
- Once the installation of the direct IP queue is complete, you will create a new LPR port that points to the HPAC print queue.
 - In Print Management, right-click on Ports and select Add Port.

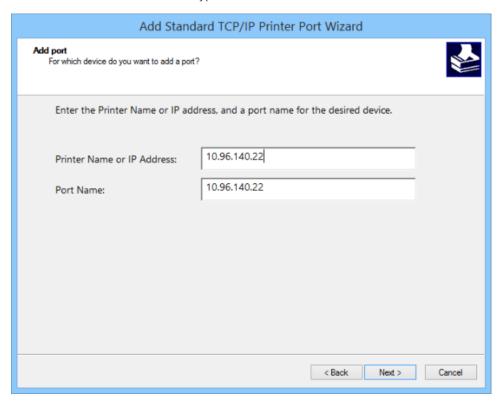


Select a Standard TCP/IP Port and click New Port. b.

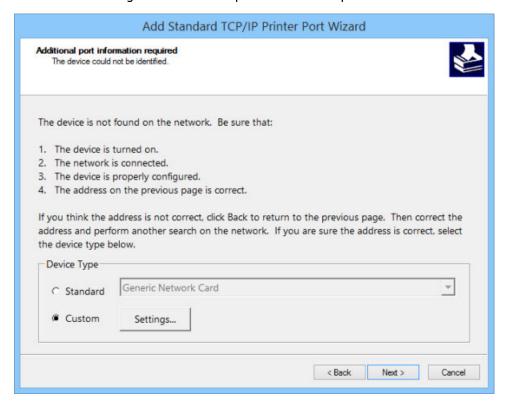


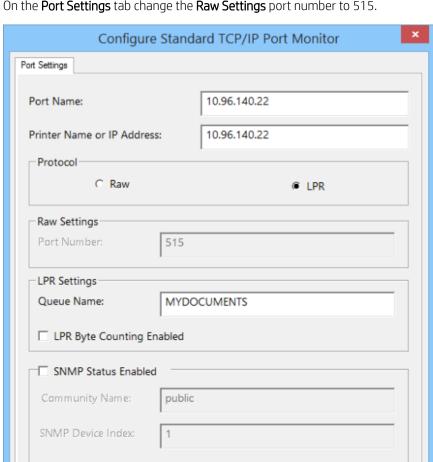
Select **Next** on the wizard prompt. c.

Under **Printer Name or IP address**: type the IP address of the HP AC server. d.



- Under Port Name, assign a name that will reflect a pull print port then select Next. e.
- f. Select Custom-Settings on the Additional port information required window.





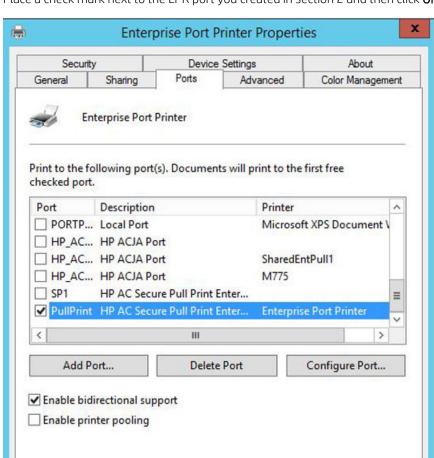
On the **Port Settings** tab change the **Raw Settings** port number to 515. g.

- h. Under **Protocol**, change to **LPR**.
- i. Under LPR settings, add the HP AC Enterprise queue name that is created in the HP AC Enterprise tile. Select **OK** to complete.

OK

Cancel

- Select **Next** on the **Additional port information required** window. j.
- k. Select **Finish** and close the printer ports window.
- Assign the LPR port to the Pull Print queue. Now that the port is created, it needs to be assigned to the print queue.
 - Right-click on the original TCP/IP printer that was created in the first section of this document and select the **Ports** tab.



Place a check mark next to the LPR port you created in section 2 and then click **OK**. b.

- c. Select the **General** tab and print a test page.
- d. Verify the test page has printed by navigating to the HP AC SPP Enterprise tile in the HP AC admin console.

OK

Cancel

Apply

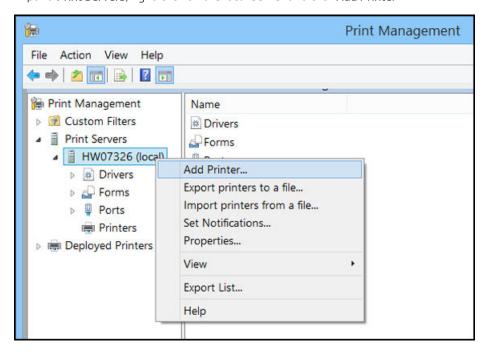
Once again, verify that this print queue is shared.

Now the queue is ready for clients to connect to. It will be up to administrators to decide on a particular option for client deployment.

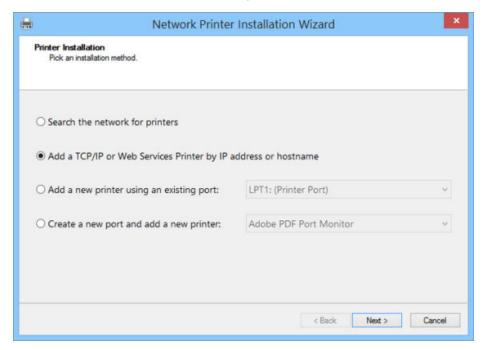
8.2.5 Installing a shared printer with the HP Enterprise Port

- Add a direct IP print queue on the HP AC server.
 - Open Print Manager: select **Start** and type **Print Management** in the **Search program and files** box.

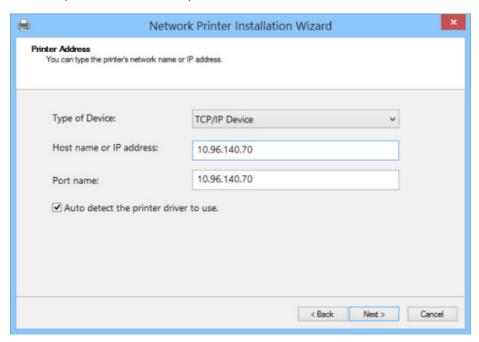
b. Expand **Print Servers**, right-click on the local server and click **Add Printer**.



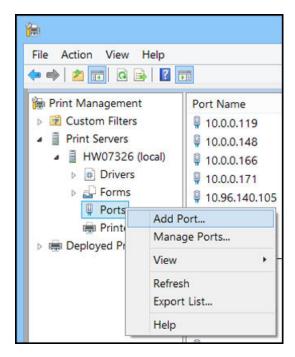
Select Add a TCP/IP or Web Service Printer by IP address or hostname then select Next.



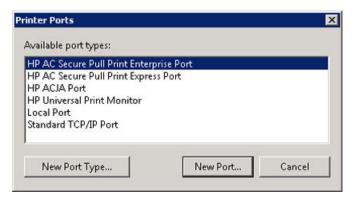
Select **TCP/IP Device** from the drop down. d.



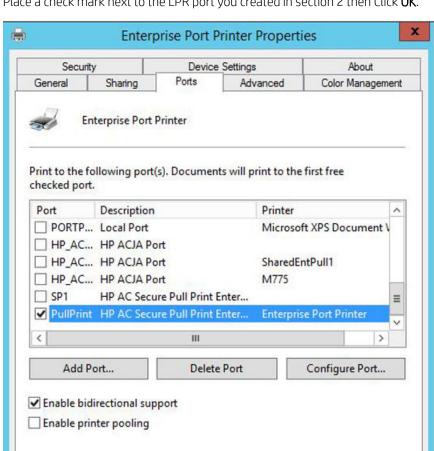
- Type the IP address of a LaserJet device. e.
- f. Create a name for the port to reflect an HP AC Pull Print port.
- Uncheck Auto detect the printer driver to use. g.
- h. Click Next.
- Select one of the driver options and click **Next**. i.
- j. Locate your Universal Print Driver and complete the installation.
- k. Be sure to share this printer with a name that reflects an HP AC Pull Print Queue.
- Create an Enterprise port. Once the installation of the direct IP queue is complete, you will create a new Enterprise port that points to the HP AC print queue.
 - In Print Management, right-click on **Ports** and select **Add Port**.



b. Select HP AC Secure Pull Print Enterprise Port and click New Port.



- Select **Next** on the wizard prompt. c.
- Under Port Name, assign a name that will reflect a pull print port then select **OK**. d.
- Close the printer ports window.
- Assign the Enterprise port to the Pull Print queue. Now that the port is created, it needs to be assigned to the print queue.
 - In the Printer Properties window, select the **Ports** tab. a.



Place a check mark next to the LPR port you created in section 2 then Click OK. b.

- c. Select the **General** tab and print a test page.
- d. Verify the test page has printed by navigating to the HP AC SPP Enterprise tile in the HP AC admin console.

OK

Cancel

Apply

Once again, verify that this print queue is shared.

Now the queue is ready for clients to connect to. It will be up to administrators to decide on a particular option for client deployment.

8.2.6 HP Access Control Enterprise Print Client

Prerequisites

New client to install the following features on end-user client PCs:

- Intelligent Print Management (IPM) for rules-based printing
- Delegation
- Encryption
- Local job storage for client-based pull printing

The Enterprise Print Client can be installed on client computers to automatically configure installed printers to use IPM rules, quota, delegate printing, local job storage, and encryption with an Enterprise server. The server requires IPM. Job Accounting, and/or Pull Printing to be installed. The Print Client applies to all currently installed TCP/IP and LPD printers on the client computer. With Local Job Storage, jobs are stored locally (in the Program Files\HP\HP Access Control Print Client\bin\pullsvc\spool folder) on client workstations and metadata regarding the job is sent to the server.

NOTE: If Encryption at rest is enabled on the server, the encryption key will be automatically copied to the client registry upon installation of the Enterprise Print Client.

IMPORTANT:

- If Local Job Storage will be installed, it is required that an SSL certificate is selected in HTTPS bindings. Go to the HP AC server > IIS Manager > Default Web Site > Bindings > HTTPS.
- If Encryption at Rest is enabled on the server, Client Passcode and Client Encryption Key are entered on the server, and Local Job Storage is installed on the client, the Client Passcode and Client Encryption Key will be used to secure job data, and the Encryption at Rest key will not be used.
- The install will convert all existing Standard TCP/IP ports to be compatible for IPM. Only install the client after the ports required to be monitored have been created on the PC clients.
- Ensure that Skip rules if network failure is enabled if you want to allow printing in the event that the network fails between the client PC and the server the HP Access Control IPM web service is running (Settings tile > IPM tab > IPM Web Service).

Prerequisites for IPM

- Intelligent Print Management must be installed on a HP Access Control Server.
- The client will convert Standard TCP/IP ports (LPR). IPP is not supported.

Prerequisites for Quota

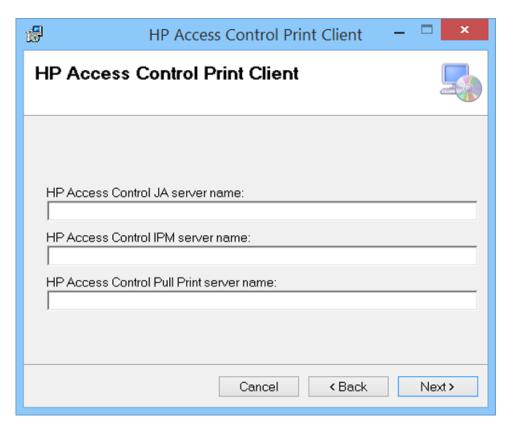
- HP Access Control server configured for guota.
- The client will convert Standard TCP/IP ports (LPR). IPP is not supported.
- For guotas to be tracked, devices must be enabled for Tracking.
- Quota for print is enabled on the HP AC Job Accounting Server
- Device is configured for authentication to use quota limits for glass activities (copy and scan)
- Print driver installed as a traditional printer object. If using the HP Universal Print Driver, Dynamic mode is not supported as the print client cannot configure the print port for quota and will not know where jobs as sent as users choose the output device "on the fly"

NOTE:

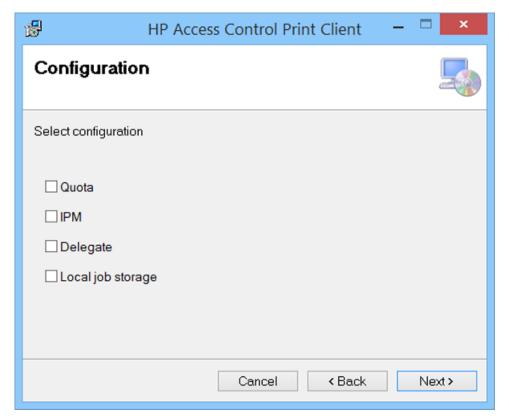
- Ensure that messages are configured in the Settings tile>Agent tab. The message field will display the message on the front panel of the device when a user reaches their quota limit. The error message field will display on the front panel of the device when there is a communication error with the IRM quota webservice.
- The port will change to an HP_ACJA port in the queue.
- Ensure Skip Quota Control if network failure is enabled (Settings Tile>Print Server>Print Server Quota Web Service), otherwise users will not be able to print if communication between the device and the HP Access Control server is unavailable.
- Quota is checked at the beginning of a print job and not at every page and only updates after the printer has sent the job accounting information for the job to the HP Access Control Job Accounting server for processing. This means that users may at some point reach a negative quota status, for example when the amount of pages in a print job is bigger than the amount of pages in the remaining quota.
- When a user's quota is exceeded it will require manual intervention to reset if it happens before the quota period is reached.
- If you want to use delegate printing, SQL Server must be used for the IRM database. SQL Compact Edition is not supported with delegate printing. To create an IRM database in SQL Server, see Section 5.5, Database storage. Also, in order to add delegate users, the users must be in the IRM database.
 - Copy the Print Client setup file from the server (located in Program Files\HP\HP Access Control\client setup \Enterprise) to the client computer, then run the Print Client setup file.
 - Follow the instructions in the setup wizard. Enter the name(s) of the server(s) in the appropriate field. To use quota, enter the Job Accounting server name. To use IPM rules, enter the IPM server name. To use delegate printing, enter the Pull Print server name. Click Next.

NOTE:

- JA Server name: used for QuotaIPM Server name: used for IPM (rules) Pull Print Server name: used for delegate printing.
- In the server name fields, it is recommended to use the Fully Qualified Domain Name (FQDN) of the servers. This is recommended to avoid any issues with DNS resolution or if there are identical server names on different domains. If the FQDN is not used and there are communication issues between the client and server, the Enterprise client will need to be reinstalled using the FQDN.



On the Configuration screen, select which components you want to configure on installed printers. Click Next.



After the installation is complete, click **Close**.

NOTE:

- Delegate applies to all currently installed LPR printers on the client workstation. Before installing delegate on client workstations, make sure LPR pull print queues are installed.
- If you want to add or remove features in the Print Client later, the Print Client must be reinstalled.
- If the encryption key on the server is changed, the Print Client must be reinstalled and the new encryption key must be entered.
- The Print Client will automatically install Microsoft .NET Framework 4.0 on the client workstation.
- If Delegate is selected and installed on client workstations, users must log off and then log back on in order for the Delegate popup to work.
- ☆ TIP: The error message that displays on the delegate web page when a user is not registered in the database can be edited. On the pull printing server, go to the Program Files\HP\HP Access Control\DelegateWS folder and open the web.config file to edit. On the key="UserError" line, change the value to your preferred message.

8.2.6.1 Delegate printing / Group printing

With delegate printing, users can print to a specified printer and have all print jobs be released by a different user. You add delegates through the delegate web page, and select who you want to delegate documents to at the time of printing.

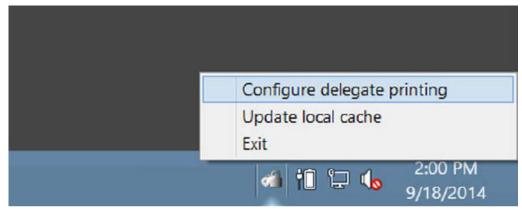
8.2.6.1.1 Configuring the Client for Delegate and Group printing

Prerequisites

- HP AC Print client installed on the client workstation. See Section 8.2.6, HP Access Control Enterprise Print Client.
- The user must have been previously enrolled before they can be designated as a delegate.
- IRM must be set to use Database as the data storage.

Complete the following steps:

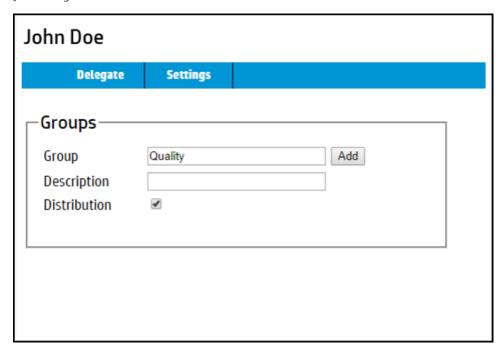
After the HP AC Print Client is installed on your workstation, the Secure Pull Print icon displays in the task bar. Right-click the icon and select **Configure delegate printing** to go the Delegate web page.



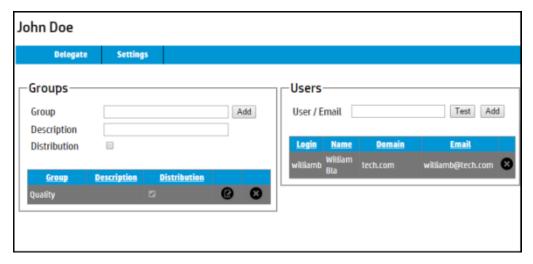
Before you can add a user for delegate printing, a group must be created. Groups allow for distribution to every member of the group, or sharing a copy amongst members of the group - which means the first user who deletes the document makes it no longer available to other members of the group.

Follow the steps below to create a group and assign users. In the **Group** field, type a name for the group. In the **Description** field, enter a description to identify the group.

Select the Distribution checkbox if you want every member of your group to receive their own copy of your delegated documents.

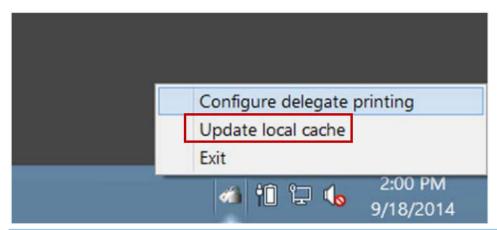


b. If Distribution is not selected, all members of the group will share your delegated documents. For example, if it's not selected and you delegate a document to the group, as soon as one user deletes the document, the document is no longer available to the rest of the members. Click Add.



After a group is created, the Users section displays. In the User / Email field, enter the name or email address of the user you want to add to the group. Click **Test** to verify the user exists in the database. Click **Add** to add the user to the selected group.

Right-click the Secure Pull Print icon (in the taskbar), and click **Update Local cache**.

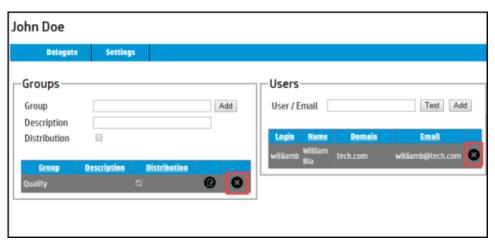


NOTE: Group information can be changed at any time. Click the Edit icon next to the group to edit the group name, description, and/or distribution setting. Right-click the Secure Pull Print icon in the taskbar, then click **Update local cache**.

8.2.6.1.2 Deleting a delegate user or group

To delete a user or group, complete the following steps:

Select the user or group you want to delete and select the delete icon.

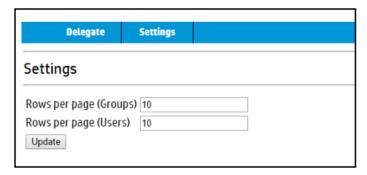


Right-click the Secure Pull Print icon in the task bar and click **Update local cache**.

8.2.6.1.3 Managing the Display of the delegate web page

Click Settings to manage the display settings on the delegate web page. The Rows per page (Groups) field determines the number of group names you want to display per page. The Rows per page (Users) field determines the number of user names you want to display per page.

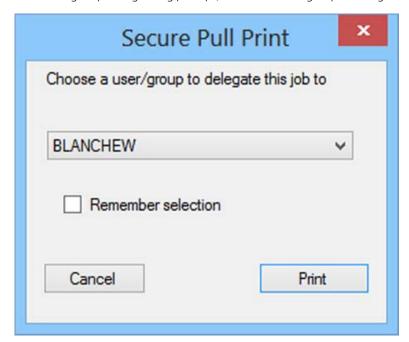
Click Update.



8.2.6.1.4 Delegating documents

Once you have assigned users, it is easy to delegate documents:

- 1. Click **Print** to print your document.
- 2. Select a printer recommended by your administrator.
- 3. Click **OK**.
- In the delegate printing dialog prompt, select a user or group to delegate to and then click **Print**.



- The user or group you selected can now collect your document at the printer.
- NOTE: When the Cancel button is selected, the job will be cancelled and will not print.
- NOTE: If a user does not have a delegate group, the popup will not display.

☆ TIP:

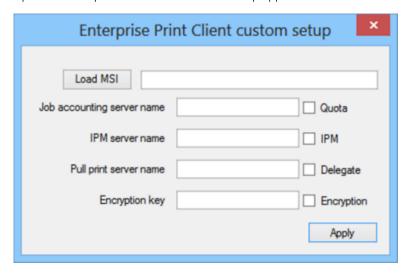
- Enable the **Remember selection** option if you want the dialog to appear with the last selected user or group the next time you print.
- When pull printing with SPP Enterprise, if a user has a mix of pull print jobs and shared delegated jobs, not all jobs will release at once if Print All is selected at the device. The user will have to select Print All to print all pull print jobs and then select Print All again to print all shared delegated jobs.

8.2.7 Silent installation

To install HP AC Print Client in silent mode, use the Enterprise Pull Print Custom Setup application located in the Program Files\HP\HP Access Control\client setup folder.

Complete the following steps:

Open the Enterprise Print Client Custom Setup application.



- Click Load MSI button to locate the HP AC Print Client.msi file. Click Open. 2.
- 3. To use quota, enter the Job Accounting server name and select the **Quota** box. To use IPM rules, enter the IPM server name and select the IPM box. To use delegate printing, enter the Pull Print server name and select the **Delegate** box. To store jobs locally on the client workstation, select the **Local job storage** box.
- Click **Apply**. The HP AC Print Client.msi file can now be deployed to client computers with the fields prefilled with server information.
- To test the notification on the HP AC server > Settings tile > IPM tab under desktop notification client enter the title for the test rule and enter the FQDN or IP address of the client you want to send a notification too. Click **Apply** and Test.

8.2.8 Quota Notification

Notification for end users on their quota status is either through the Quota Client or the MyQuota website. The quota client will display a printer icon on the system tray on the client PC to show the quota limit for the currently logged in user. The MyQuota website will show remaining quota for the user.

8.2.9 Quota Notification with Quota Client

Prerequisites

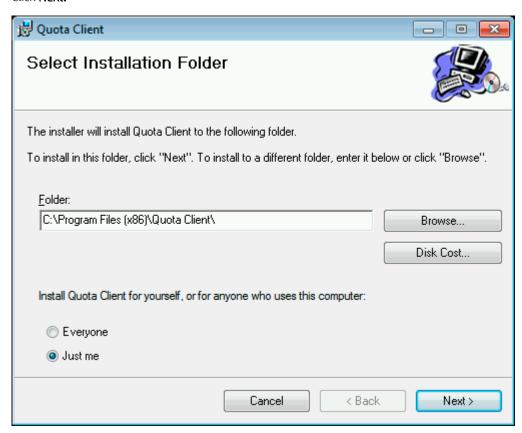
- HP Access Control server configured for quota, see Section 4.2.9.4, Quota management
- HP Access Control Print client installed and configured for Quota

Complete the following steps:

Install the HP AC JA Quota Client located in \Program Files\HP\HP Access Control\Client Setup with administrator privileges.



Select the installation folder and if the client is for use for everyone, or just the currently logged in user. Click Next.



Enter the server name or IP address where the HP Access Control Job Accounting Quota web service is installed. Click Next.



- Click Close. 4.
- When a user exceeds quota for print the system tray icon will change to show that there are no remaining pages, and the user will not be able to print.



8.2.10 MyQuota

Prerequisites

- HP Access Control server configured for quota
- HP Access Control Print client installed and configured for Quota

Users can check their remaining quota limits by accessing the server where the HP Access Control Job Accounting quota web service is running – http://<servername>/myquota

Quota

	Print	Сору
User name ue1		
Total pages remaining	0	4
Color pages remaining	0	2

8.3 Macintosh Clients

8.3.1 Adding a printer using LPR protocol

Prerequisites

Make sure a pull print queue is created in the HPAC admin console > Settings > SPP Enterprise tab.

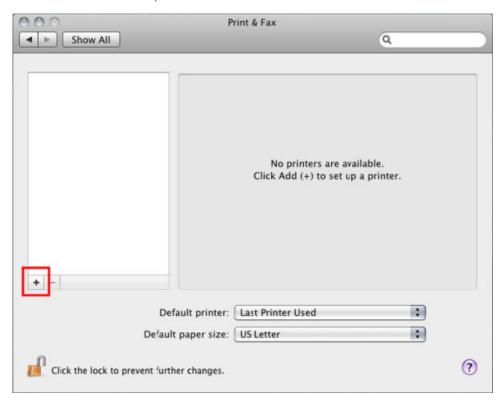
Local gueues for pull printing is supported with HP AC SPP Enterprise only. Complete the following steps:

On the Mac computer, choose **System Preferences** from the Apple menu.

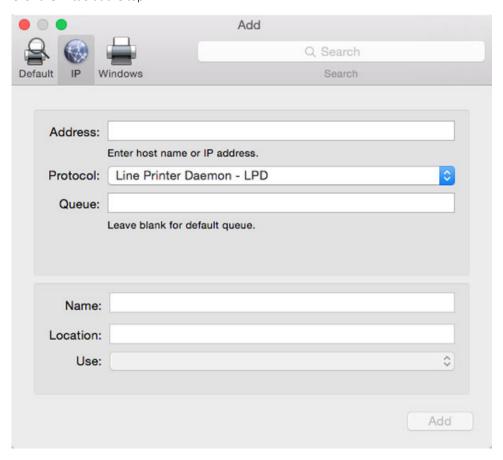
Choose **Print & Fax** from the View menu.



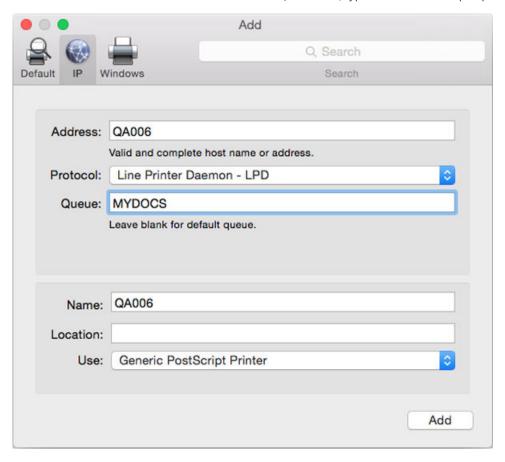
Click the + button to add a printer.



Click the IP tab at the top.



In the Protocol field, select Line Printer Daemon – LPD from the drop-down menu. In the Address field, type the name or IP address of the HP AC server. In the Queue field, type the name of the pull print queue.



Click Add. A window of installable options for the printer may display. Check these as appropriate for the printer.

8.3.2 Adding a shared pull print queue

Prerequisites

- Mac OS 10.6.5 or newer.
- From the HP AC server, make sure the printer is configured for Add tracking PJL attributes in the HP AC tile (required to be enabled for the HP Enterprise bundle only. Not required with HP AC Express.).
- On the HP AC server, go to the Printer Properties window > Advanced tab and make sure **Start printing after last page is spooled** is selected.
- Use a printer driver that most closely matches the printer's capabilities. It is recommended to conduct tests before deployment to make sure job information is tracked correctly.

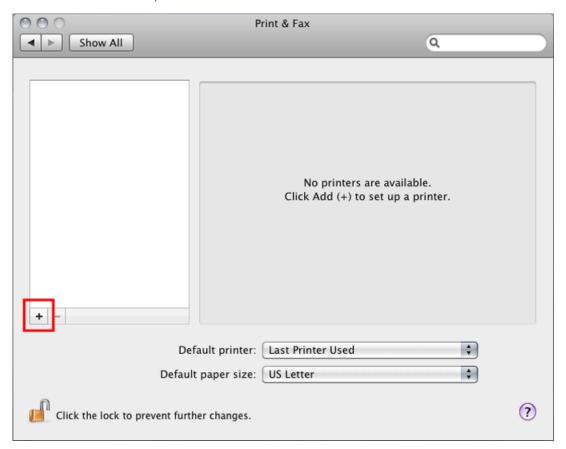
Complete the following steps:

1. On the HP AC server, do one of the following, depending on the pull print method:

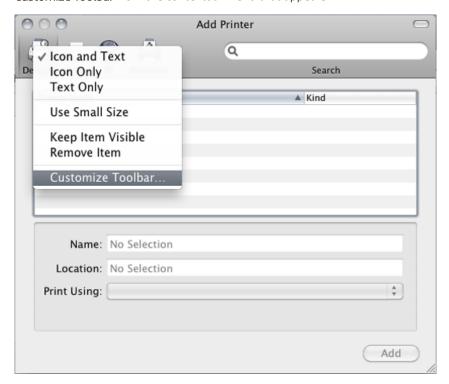
- Secure Pull Print Express: Add a printer on the server according to Section 6.1.2, Configuring a Pull Print printer with HP AC Express. Make sure the printer is shared.
- Secure Pull Print Enterprise: Add a printer on the server according to Section 6.4.4, Adding pull print <u>queues on the server</u>. Make sure the printer is shared.
- 2. On the Mac computer, choose **System Preferences** from the **Apple** menu.
- 3. Choose **Print & Fax** from the **View** menu.



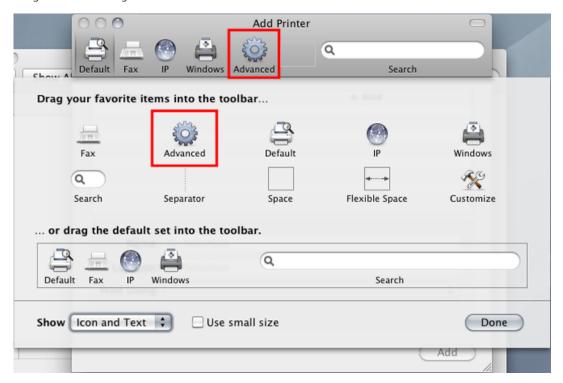
Click the + button to add a printer.



Press the Control key while clicking the "Default" icon (or any other icon on the toolbar), then choose **Customize Toolbar** from the contextual menu that appears.

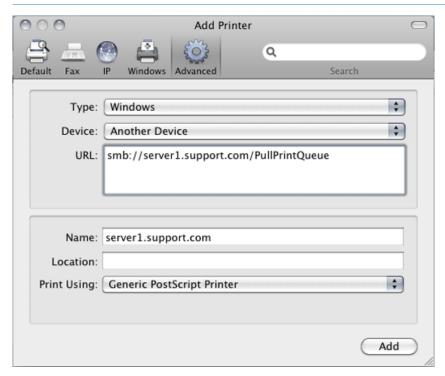


Drag the Advanced (gear) icon to the toolbar.



- Click Done. 7.
- 8. Click the **Advanced** icon that was added to the toolbar.
- 9. Choose **Windows** from the Type pop-up menu.

- 10. In the URL field, type the printer's address in one of the following formats: smb://server/sharename
 - NOTE: "server" is the name of the server sharing the printer (or its IP address). "sharename" is the shared printer's share name. If the share name contains spaces, replace each space with "%20" (without quotation marks).



- 11. In the Name field, type the name you would like to use for this printer in Mac OS X.
- 12. Choose the appropriate PPD or printer driver from the "Print Using" pop-up menu.
- 13. Click Add.

8.3.3 Mac encryption

Prerequisites:

- 1 HPAC server with IIS
- 1 HPAC pull printing only server with HTTPS disabled in IIS. This is because printing from a Mac computer requires the use of port 443. Therefore, IIS cannot also use port 443.
- The Mac machine has the certificate installed into the system Keychain.

Mac computers will print to the HPAC pull print only server and then will be redirected to another HP AC server (running IIS) to be stored in a pull print queue on that server.

On the pull print only server, open IIS manager and for the default web site, disable HTTPS.



On the pull print only server, in HPAC > Settings > SPP Enterprise, add a new print queue to receive IPPS jobs from Mac computers.



- On the pull print only server, copy the Encrypt.exe file to the Program Files\HP\HP Access Control\bin
- On the pull print only server, go to the \Program Files\HP\HP Access Control\spoolroot \prtr folder and open the pull print previously created queue in Notepad (e.g. PullPrintIPPS). Replace the contents of the file with the following text, where TCPHOST is the name of the main HPAC server, TCPPRTR is the name of the pull print queue on the HPAC server, and FILTER1 is the path of the filter.

COMMTYPE = TCPIP/LRSQ

TCPHOST = server.domain.com

TCPPRTR = PullPrintQueue

TCPRPORT = 5500

VPSX2VPSX = YES

ENCRYPT = YES

PRTROPTS = 80

FILTER1 = C:\Program Files\HP\HP Access Control\bin\Encrypt.exe

F1DTYPE = all

F1ARGS = "&infile" "&outfile"

On the Mac computer, add an IPPS printer to connect to the HPAC pull print only server via port 443 and enter the previously created gueue name (e.g. PullPrintIPPS).



When the user prints from the Mac computer, the job will be sent to the PULLPRINTIPPS queue (as shown in this example), and the filter in the printer definition file will route the job to the HPAC server and be stored in the pull print gueue, where users can retrieve the job and release at a printer.

8.4 HP Access Control Card Enrollment application

Prerequisites

See Section 2.8, Card Masking utility requirements

Install the Card Enrollment application to allow users to enroll their cards from a client PC.

Complete the following steps:

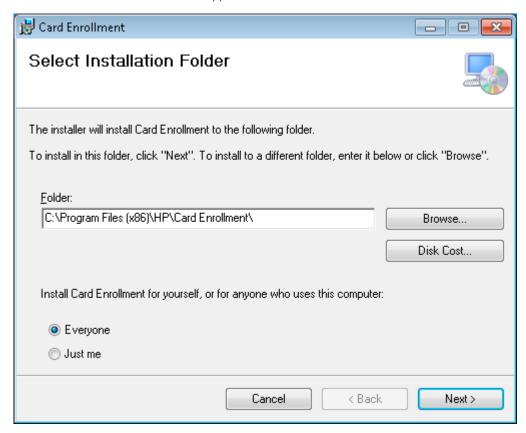
- Copy the Card Enrollment installation file from \Program Files\HP\HP Access Control\client setup to the client PC.
- Run the Card Enrollment.msi file from the client PC.

On the welcome screen, click **Next**.



- On the Card Enrollment setup screen, enter the FQDN or IP address of the server that has IRM installed and click next.
- NOTE: Connecting to an IRM server is required to save user card data.

On the Select Installation Folder screen, verify the information is correct and select **Everyone** to allow all users to access the card enrollment application. Click Next.



When complete, click Close.

8.5 Job Accounting clients

Table 8-1 Job Accounting Client Notifications

	Client Notifications		
	IPM	JA Quota Client (systray)	Overview
HP AC Print Client (local IPM/ Quota)	/	✓	The HP AC Print Client can be installed on client computers to automatically configure installed printers to use IPM rules, quota, delegate printing, and/or encryption (see Note 4) with an Enterprise server. The HP Access Control server requires IPM, Job Accounting, and/or Pull Printing to be installed. The HP AC Print Client applies to all currently installed enterprise queues using TCP/IP using LPR protocol printers on the client computer.
HP AC JA Allocation Client	✓	✓	The HP AC JA Allocation Client can be installed on client computers to allow input and collection of allocation (metadata) for HP AC Job Accounting. The HP Access Control server requires HP AC Job Accounting to be installed.
HP AC JA Print Client	See Note 3, below	See Note 3, below	To track local printers connected to client desktops via USB, LPT1 or Standard TCP/IP port, install the Job

Table 8-1 Job Accounting Client Notifications (continued)

Accounting Print Client. The Job Accounting Print Client is installed on client desktops where local print activity is tracked and then sent to the Job Accounting Database Server. SPPE Print Client See Note 3, below See Note 3, below The SPPE Print Client can be installed on client computers to use encryption (see Note 4) and to allow the user's pull print jobs to be routed and stored in a shared network folder on the Secure Pull Print Express server. The HP Access Control server must have Secure Pull Print Express installed. NOTES: 1 To use client applications, client desktops must have one of the following operating systems: Microsoft Windows Vista (32-bit or 64-bit), Microsoft Windows 7 (32-bit or 64-bit), or Microsoft Windows 8 (32- or 64-bit). 2 Print Stream Clients are NOT designed to be installed or used together on a single workstation. 3 Not applicable unless you have server-based and client-based tracking and server-based IPM/Quota + client-based pull printing on different queues, then ✓					
computers to use encryption (see Note 4) and to allow the user's pull print jobs to be routed and stored in a shared network folder on the Secure Pull Print Express server. The HP Access Control server must have Secure Pull Print Express installed. NOTES: 1 To use client applications, client desktops must have one of the following operating systems: Microsoft Windows Vista (32-bit or 64-bit), Microsoft Windows 7 (32-bit or 64-bit), or Microsoft Windows 8 (32- or 64-bit). 2 Print Stream Clients are NOT designed to be installed or used together on a single workstation. 3 Not applicable unless you have server-based and client-based tracking and server-based IPM/Quota + client-based pull printing on different queues, then ✓			installed on client desktops where local print activity is tracked and then sent to the Job Accounting Database		
 To use client applications, client desktops must have one of the following operating systems: Microsoft Windows Vista (32-bit or 64-bit), Microsoft Windows 7 (32-bit or 64-bit), or Microsoft Windows 8 (32- or 64-bit). Print Stream Clients are NOT designed to be installed or used together on a single workstation. Not applicable unless you have server-based and client-based tracking and server-based IPM/Quota + client-based pull printing on different queues, then ✓ 	SPPE Print Client	See Note 3, below See Note 3, be	computers to use encryption (see Note 4) and to allow the user's pull print jobs to be routed and stored in a shared network folder on the Secure Pull Print Express server. The HP Access Control server must have Secure		
Windows Vista (32-bit or 64-bit), Microsoft Windows 7 (32-bit or 64-bit), or Microsoft Windows 8 (32- or 64-bit). 2 Print Stream Clients are NOT designed to be installed or used together on a single workstation. 3 Not applicable unless you have server-based and client-based tracking and server-based IPM/Quota + client-based pull printing on different queues, then ✓	NOTES:				
3 Not applicable unless you have server-based and client-based tracking and server-based IPM/Quota + client-based pull printing on different queues, then ✓		Windows Vista (32-bit or 64-bit), Microsoft Windows 7 (32-bit or 64-bit), or Microsoft Windows 8 (32- or			
client-based pull printing on different queues, then 🗸	7	Print Stream Clients are NOT designed to be installed or used together on a single workstation.			
4 Delegate printing and/or encryption is available in HP AC 14.2 and above.	5				
	,	4 Delegate printing and/or encryption is available in HP AC 14.2 and above.			

8.5.1 Cost Allocation

Prerequisites

- All allocation printers need to be shared on the Print Server.
- All allocation printers need to use Port Monitor on the Print Server.

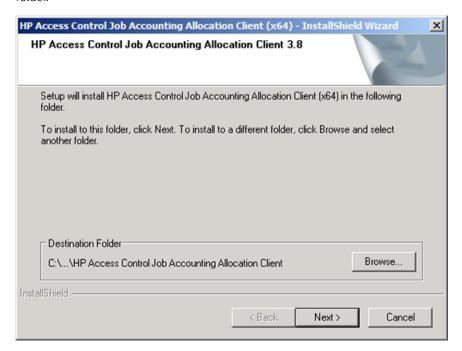


- Use a Domain User with Local Administrator Rights to install and configure the printer and software. For Windows Vista and Windows 7 users, make sure that you run the installer using the Option Run as administrator.
- The Job Accounting Allocation Client cannot be used on the same PC that has the HP AC Print Client installed.

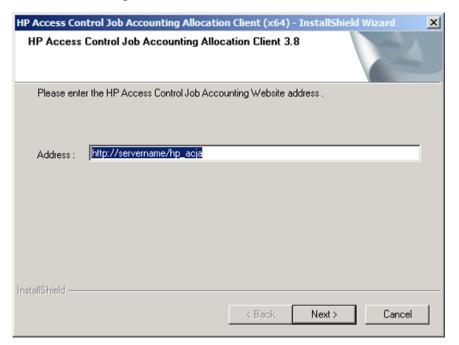
8.5.1.1 Installation of the Allocation Client

- Run the HP AC JA Allocation Client file. The InstallShield Wizard will guide you through the installation 1. process.
- Read through the License Agreement and click **Yes** to confirm, and **No** to abort the installation.

Select the installation directory or click Next to keep the default. Click Next to keep the default programs folder.



When prompted, provide the Web address of the HP Access Control Job Accounting Web Server. This is typically http://servername/hp acja, where 'servername' is the name of the physical server where Job Accounting is installed.

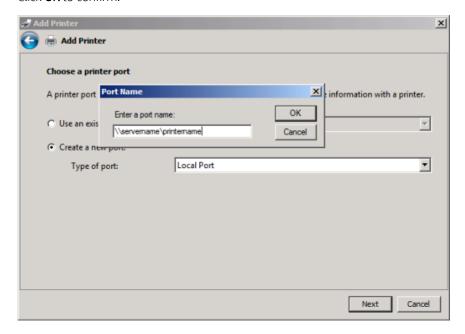


Click **Finish** to complete the installation process.

NOTE: After installation is complete, log off and log back on. When the user logs on, the alloc.exe file, required for the allocation pop-up, is started.

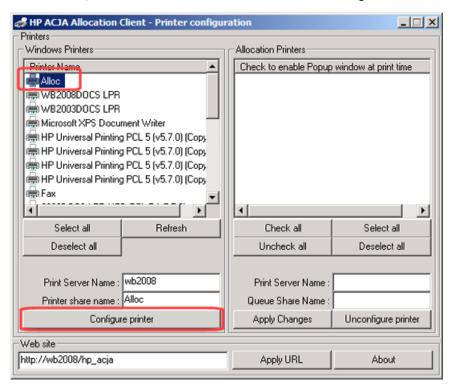
8.5.1.2 Installation and Configuration of the Allocation Printer

- Open the Printers and Faxes folder and run the Add Printer wizard.
- 2. Select Local printer and click Next (Uncheck Automatically detect...).
- Select Create a new port, choose Local Port, and click Next.
- NOTE: Do Not Use the Allocation Port. This is a Port extension that the Local Port will be using.
- For the port name, enter \printserver\printername where "printserver" is the name of the server running the JA Print Server and "printername" is the share name of the allocation printer shared on the print server. Click **OK** to confirm.

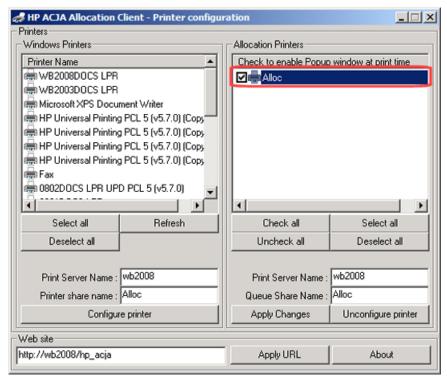


- Select the appropriate driver for the printer and continue to finish the remaining steps in the Add Printer wizard.
- NOTE: Repeat these steps for each allocation printer to be used on the workstation.

Go to Start > All Programs > HP AC JA Allocation Client, and select Allocation Queue Configuration. Highlight the allocation printer in the Windows Printers Pane and click **Configure Printer**.

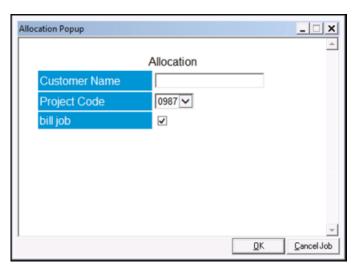


The allocation printer configured will move to the Allocation Printers Pane.



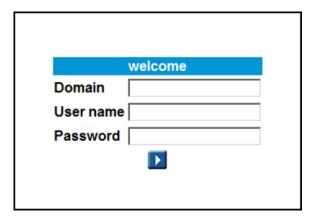
NOTE: Repeat these steps for each allocation printer to be used on the workstation.

- Open the **Properties** of the Allocation Printer that you have added in the steps above, and click **Print Test** Page.
- 9. The Allocation popup window appears displaying an allocation profile created on the Job Accounting Server. Click **OK** to continue with the test.



8.5.1.3 Viewing jobs in the Allocation Job Browser

Go to Start > All Programs > Allocation Client > Allocation Job Browser. Enter your Windows Domain, User name, and Password, then click the arrow button.



Leave all the parameters as default in the New Query screen and click the arrow button at the bottom.



You will see the test page you printed in the Result Display screen.

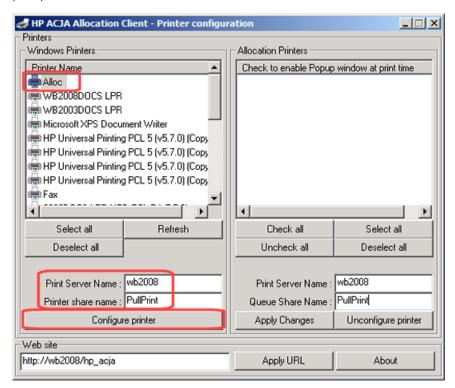
NOTE: The job information will be inserted in the database at the next scheduled job retrieval. You will not see this result if you run this query before the job has been processed.

8.5.1.4 Configuring a Shared Pull Print Printer for Allocation

When configuring a shared pull print printer from the Server with Allocation Client, please follow the steps below to ensure that the correct document name will be displayed on the pull print window:

- Share the pull print printer from the server.
- Install a new printer and point it to a physical printer that will be commonly used by the user, using Standard TCP/IP as the port type. If possible download and use the same driver as the shared pull print printer from the server.
- 3. Open the Allocation Client Queue Configuration and select the newly created printer from Step 2.

Enter the name of your pull print server into the Print Server Name field. Enter the share name of the pull print printer into the Printer Share Name field.



Click Configure.

8.5.2 Job Accounting Print Client

The Job Accounting Print Client tracks printers connected to client desktops via USB, LPT1 or Standard TCP/IP ports. The print activity from the client is tracked and then sent to the Job Accounting Database Server.

Prerequisites

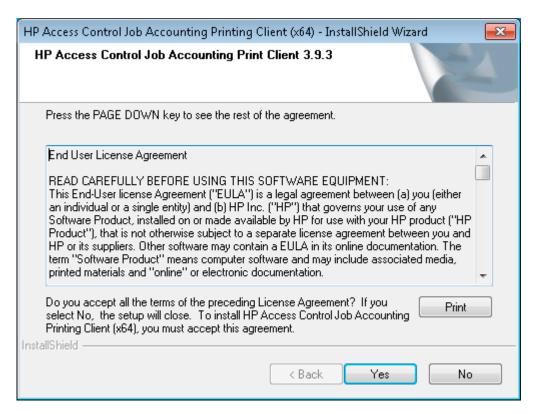
HP Access Control Job Accounting Server



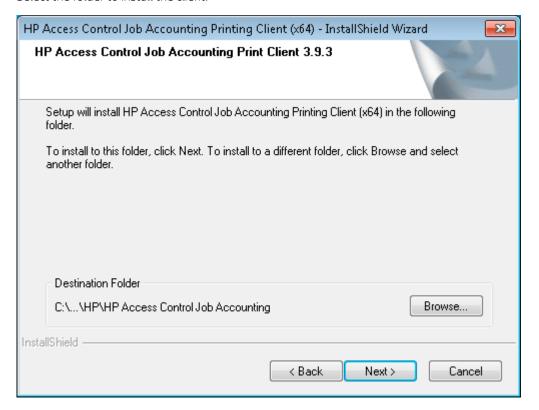
The Job Accounting Print client is not compatible with any other print clients.

Complete the following steps:

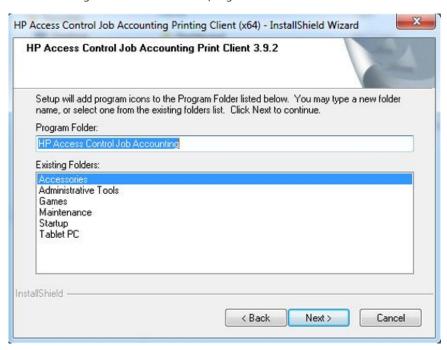
Run the HP Access Control Job Accounting Print client with administrative rights.



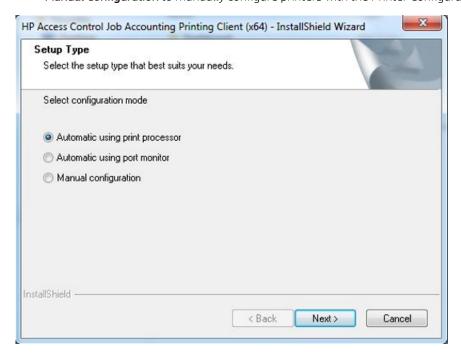
Select the folder to install the client.



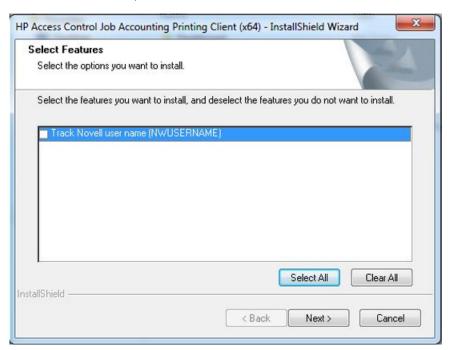
Select the Program Folder to add the program icons to.



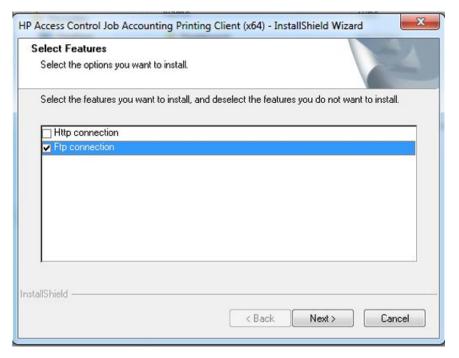
- On the Setup Type screen, select one of the following configuration modes:
 - **Automatic using print processor** for USB printers
 - **Automatic using port monitor** for local connected or Standard TCP/IP ports
 - Manual Configuration to manually configure printers with the Printer Configuration Tool



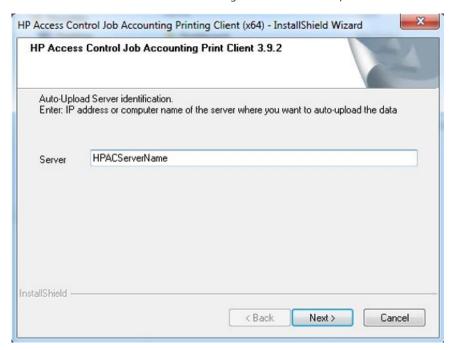
For Novell environment, select to **Track the Novell user name**.



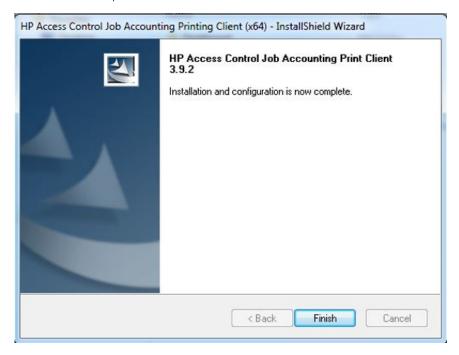
Choose the connection method to push the job accounting information to the HP Access Control server running the Job Accounting Server.



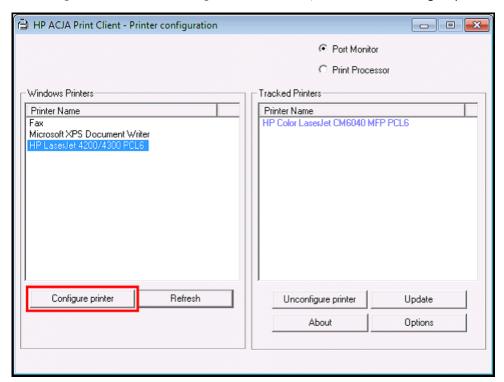
Enter the IP address where the accounting data will be auto-uploaded to.



8. Click **Finish** to complete the installation.



If during the installation you chose Manual configuration, go to Start >All Programs > HP Access Control Job Accounting and choose Printer Configuration. Select the printer, and click **Configure printer**.



Manage users and jobs

9.1 Managing access to the Admin console

The Login tab allows you to control access to the HP AC admin console. With this feature enabled, user credentials will be required at the time of starting the HP AC admin console

Users belong to groups, and the groups define the permissions that determine what features are available to that group.



- The Power User can view the same settings as the Admin user, but does not have the same permissions to make changes.
- By default, the Settings section does not appear under the Admin account to prevent being locked out of the console completely.

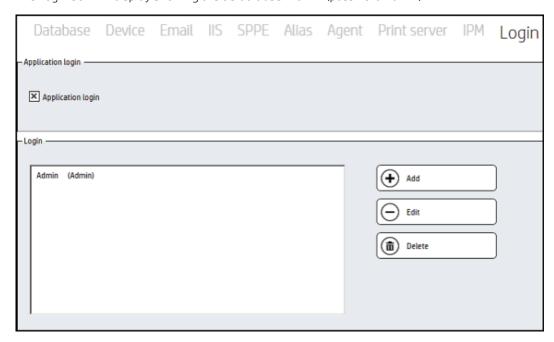
Permission	Admin	Power User	User
SPP Express/Enterprise	✓	✓	
Delete User	✓	✓	
Delete Job	✓	✓	
View Job	✓	✓	
Intelligent Print Management (IPM)	✓	✓	
Device Analysis	✓	✓	
Job Accounting	✓	✓	✓
IRM	✓	✓	
AD Configurator (View)	✓	✓	
AD User Editor (View)	✓	✓	
DB User Editor (View)	✓	✓	
AD Group Manager (View)			
User List Editor (View)			
Device	✓	✓	
Add (Apply)	✓	✓	
Delete (Apply)	✓	✓	
Install/Remove (Apply)	✓	✓	
Configure (Apply)	✓	✓	
Move Devices (Apply)			
Manage Device Grouping (Apply)			
Settings	✓	✓	
Database (View/Apply)	✓	✓	

Device (View/Apply)	✓	✓	
Email (View/Apply)	✓	✓	
IIS (View/Apply)	✓	✓	
SPP Enterprise (View/Apply)	✓	✓	
Alias (View/Apply)	✓	✓	
Agent (View/Apply)	✓	✓	
Print Server (View/Apply)	✓	✓	
IPM (View/Apply)	✓	✓	
Login (View/Apply)			
Print Server	✓	✓	
Configure	✓	✓	
Server Information	✓	✓	
License	✓	✓	
Key Update (Apply)	✓	✓	

Click the Settings tile and go to the **Login** tab. Select **Application login** to enable.



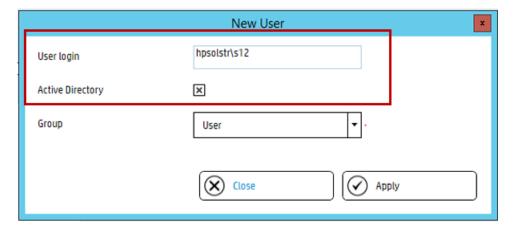
The Login box will display showing the default user Admin (password Admin).



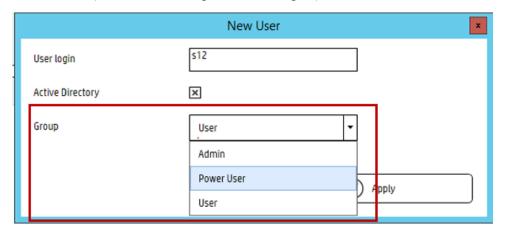
- Enter information for the **New User**. You can create a new user, or use an existing user from Active Directory.
- NOTE: To create a user within HP Access control, enter a User login and password and assign the group it will belong to.



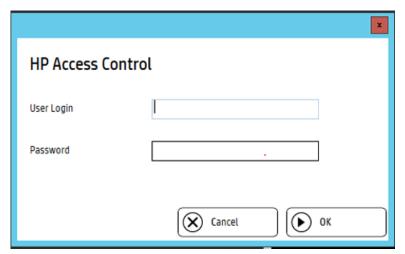
NOTE: To add a user from Active Directory, enter User login (sAMAccountName) and select Active Directory.



Select the Group the user will belong to. The default groups are Admin, Power User, and User.

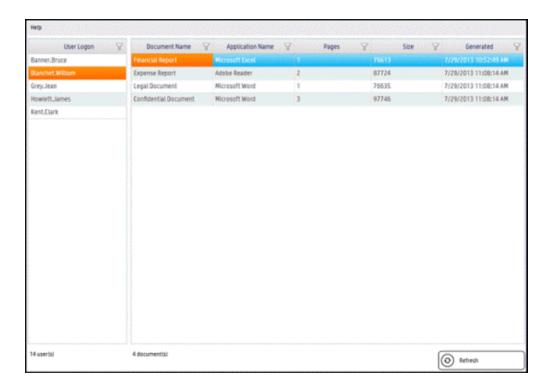


- NOTE: The Admin group has full access to view and change all features within the HP AC admin console. The Power User group has limited access to the HP AC admin console features.
- 5. Click Apply.
- 6. When the HP Access Control admin console is launched it will prompt for a user name and password. Enter your User Login and Password and click **OK**.



9.2 Managing users

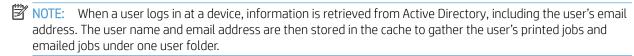
Go to the SPPE tile or the SPP Enterprise tile to view Secure Pull Print users and to manage user print jobs.



9.2.1 Clearing the Cache

When a user logs into a device, information is retrieved from Active Directory. This information includes the user's name and email address. This is stored in the cache on the HP Access Control server to enable storing of the users printed jobs and emailed jobs in one user folder:

- Go to the Settings tile and click the SPPE tab.
- 2. Click Clear cache to delete the cached information linking the user's login with the user's email address.



9.2.2 Alias

For users printing from non-Windows printing, alias printing allows print jobs submitted from the non-Windows system to be linked to your user name in Windows.

Prerequisites

- IRM must be set to use Database as the data storage.
- The user must have been previously enrolled in the system.

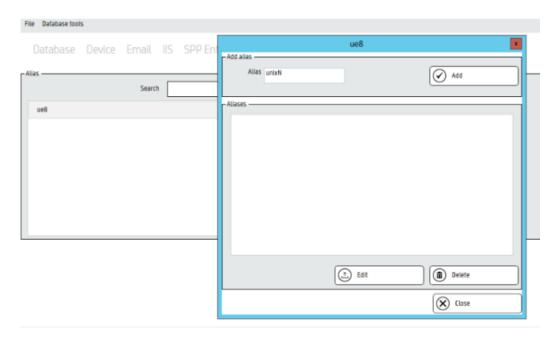
Complete the following steps:

Open the HP Access Control Configuration Utility and select the Settings tile.

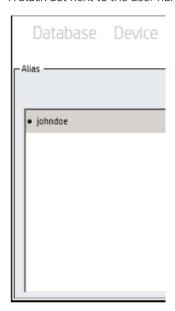
Select **Alias** on the top menu.



- Search for your user name (i.e User1) in the search field and click the **Alias** button.
- Add the new alias (i.e. unixN). The alias name must be unique to other user aliases and logons. Any number of aliases can be entered.



A black dot next to the user name indicates the user has an alias.



Jobs submitted by either User1 or unixN will grouped under the same user name in the user's spool folder.

9.2.3 Deleting users

The AD User Editor is not intended as a replacement or substitute for the standard AD user management tools. As such, it works only with users that already exist in the domain. Also, it cannot delete users from the domain. Use the standard Microsoft tools to add and delete users in the domain. After a user exists, Agent PIC and feature rights can be assigned as described in the following sections.

9.2.4 Look up a user

Complete the following steps to find a user:

Go to the **IRM** tile and open the **AD User Editor**.



Select **Username**, **Email**, or **Code** from the drop-down list, and click **Find**.





The upper portion of the screen displays information for the user specified, or an error message displays if the user cannot be found.

9.2.5 Auto purge inactive users

```
In order to delete inactive users in the IRM database, run the following SQL script in SQL Management Studio:
```

```
USE [IRM] --Change the value [IRM] to match your database IRM name
GO
IF EXISTS(SELECT 1 FROM sysobjects WHERE type='P' AND name
='P DeleteInactiveIRMUser')
BEGIN
DROP PROC P DeleteInactiveIRMUser
END
GO
```

CREATE PROCEDURE [dbo].[P DeleteInactiveIRMUser](@InactiveDate datetime) AS

BEGIN

delete from ALIAS where UserId in (select UserId from IRM where ADate < @InactiveDate)

delete from IRM where ADate < @InactiveDate

END

GO

After the script is executed, a new P_DeleteInactiveIRMUser procedure is created in the IRM database that can be called with one line. For example:

```
Exec P DeleteInactiveIRMUser '2016-11-17'
```

If SQL Server Standard or Enterprise edition is used, you can create a SQL Agent job calling this line in the job steps, specifying the date. You can specify a fixed date and change it every once in a while manually, or you can use the DATEADD function for the parameter to have a dynamic date value. For example:

```
DECLARE @Date date = dateadd(month, -1, getdate())
```

Exec P DeleteInactiveIRMUser @Date



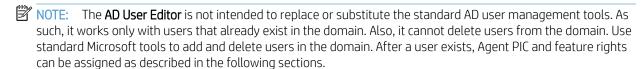
NOTE: The line dateadd (month, -1, getdate ()) is taking the current date and decreasing 1 month. So if you want to delete inactive users in the last 3 months, just change the value to be -3.

9.3 AD User Editor

Use the HP Access Control AD User Editor to review or change user PIC, card, and device feature rights.

IMPORTANT: You cannot view the AD User Editor page from the Configuration Utility if you are using a 64-bit server, or from a 64-bit Web browser. The AD User Editor page can only be viewed from the Configuration Utility on a 32-bit server or from a 32-bit Web browser.

User information displays in the upper portion of the page, and information to find a user is entered at the bottom. All fields in the upper portion of the page are read-only until a user is located using the Find function. When a user is located, the code and/or device attributes can then be changed.



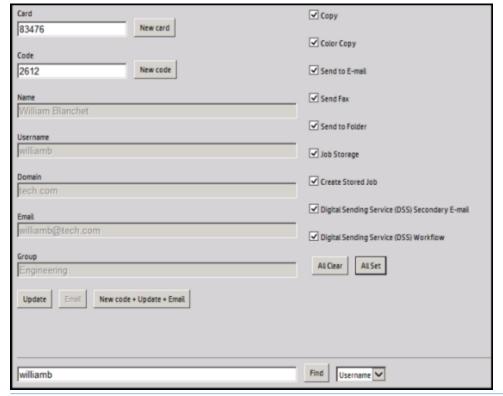
9.3.1 Change User Card or Code Parameters

To change a Card or Code parameter, complete the steps provided here.

Prerequisites

- To email users new code information, SMTP must be configured
- Click the **IRM** tile and select the **AD-User Editor** tab. 1.
- Enter the username, email, or code and click **Find**. 2.

- Click **New card** or **New code** to change the attribute.
- Click **Update** to save. To email the user of the new code (if applicable), select **New code + Update + Email**. 4.



NOTE:

- If the code is in use by another user, a message will display.
- If the AD-Authenticator was configured so that a user's PIC is not visible, the only way to update the code is through the New code + Update + Email.

9.3.2 Change a user's device feature rights

Complete the following steps to change a user's device feature rights. For more detailed information, see

- 1. Check the box to the left of a named device feature to enable or disable a user's right to use that feature.
- 2. Click **Update** when all features are specified correctly.
- 3. Click **All Clear** or **All Set** to clear or set all function rights at once.

9.3.3 Email a user's PIC and rights information

Click Email to email PIC and device feature rights to a user. The email is sent to the user's address stored in AD and displayed in the Email box.

NOTE: Only information stored in AD can be emailed. If changes have been made, but not committed, the Email button is disabled.

9.4 AD Group Manager

The HP AC Active Directory Group Manager performs operations on an entire group of users. It can be used to set PIC and device feature rights for an entire group of users. The members of each group are selected by an LDAP query.

Figure 9-1 Group Manager



The following group operations are available:

- Assign new random PICs to a group of users.
- Assign the same device function rights to a group of users.
- Email a group of users their PIC and device function rights information.
- Download a CSV file containing the AD-Authenticator information for a group of users.
- Encrypt PICs stored in AD for a group of users.
- Decrypt PICs stored in AD for a group of users.

🗥 CAUTION: The **Group Manager** is powerful; it can alter the PIC and device function rights of all users. The Group Manager can be configured so it is available only to a select group of highly qualified personnel.

Groups are defined using LDAP filters in the file AD-Authenticator-Configuration.xml. The groups are generally defined upon installation of the AD-Authenticator and do not need to be changed again. Two groups, ActivatedUserList and CandidateUserList are defined by default.

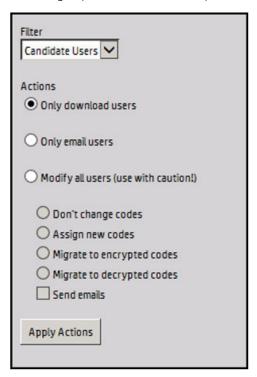
- The ActivatedUserList group filter selects only those users who have been assigned a PIC and device function rights.
- The **CandidateUserList** selects those users who have not yet been assigned a PIC or device function rights.

9.4.1 Download User AD-Authenticator information

The Group Manager automatically downloads a CSV file containing the current information for a Group's users following any operation that modifies that group.

Use the following steps to download the information without modifying the group:

Click the group name in the **Filter** drop-down box.



- Select Only download users. 2.
- Click Apply Actions.

9.4.2 Email PIC and device function rights information

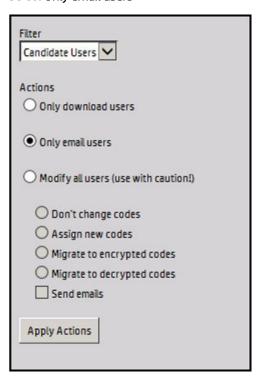
Prerequisites

See Section 4.2.2.2, Configuring for email notification

The Group Manager can send all users of a group an email containing their current PIC and device function rights. To email PIC and device function rights, complete the following steps:

Click the group name in the **Filter** drop-down box.

Select **Only email users**.



Click Apply Actions.

9.4.3 Assign new PIC and device function rights

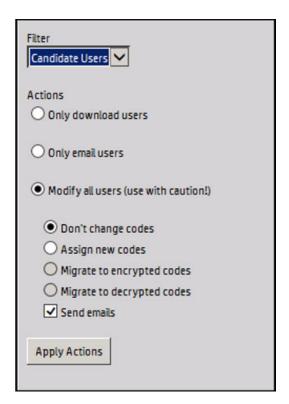
Prerequisites

See Section 4.2.2.2, Configuring for email notification.

The Group Manager can assign new random PIC values and/or device function rights to all users in a group. This feature is especially useful for establishing the initial user settings during AD-Authenticator installation. This feature can also be used to assign new PICs on a periodic basis, or if a number of new users have been added to the AD.

Complete the following steps:

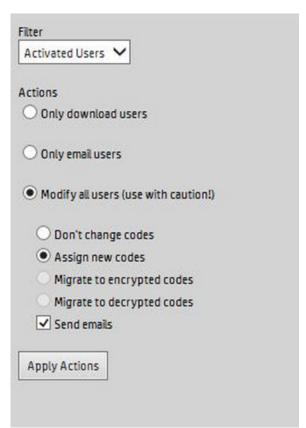
Select the group name in the Filter drop-down box.



Select **Modify all users**. 2.

To assign new PIC values, select **Assign new codes**.

Select **Send emails** to send each user an email containing their new information.



9.4.4 Encrypt or decrypt user PICs

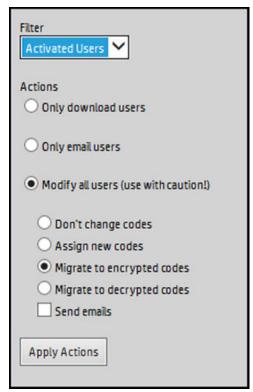
At installation, AD-Authenticator may be configured to use either encrypted or unencrypted PIC values in AD. Use the **Group Manager** to migrate between encrypted and decrypted PIC storage. This can be useful if an external tool was used to generate unencrypted PIC codes and they now need to be encrypted, or if the PIC codes need to be decrypted for use by an external tool. To change the encryption passphrase, decrypt the stored codes and then re-encrypt them using a different passphrase.

NOTE: Migrate to encrypted codes and Migrate to decrypted codes are available only if the code Passphrase has been set in the AD-Authenticator configuration. For more details, see Section 5.4.1, Configure the AD-Authenticator.

AD-Authenticator stores the PIC values in AD in a way that it can determine whether the code is encrypted or decrypted. When changing between encrypted and decrypted codes, it only changes those codes that are not already in the correct state (for example, it does not re-encrypt already encrypted codes, rendering them indecipherable).

Use the following steps to change between encrypted and decrypted PIC value storage:

- Click the group name in the Filter drop-down box.
- 2. Select Modify all users.
- 3. Select Migrate to encrypted codes OR Migrate to decrypted codes.
- Click Apply Actions.



NOTE: To change from encrypted code storage to decrypted code storage, immediately clear the code passphrase value from the AD-Authenticator configuration. If the passphrase is not cleared, AD-Authenticator is unable to authenticate against the decrypted codes and all new codes added are stored encrypted. Should this occur, run the Migrate to decrypted codes process again and then immediately clear the code passphrase.

9.5 Manage users AD Group Manager

The Active Directory Group Manager performs operations on an entire group of users. It can be used to set PIC and device feature rights for an entire group of users. The members of each group are selected by an LDAP query.

Filter Activated Users	Сору
Actions	☐ Color Copy
Only download users	Send to E-meil
Only email users	Send Fex
Modify all users (use with caution!)	Send to Folder
Don't change codes Assign new codes	☐ Job Storage
Migrate to encrypted codes Migrate to decrypted codes	Create Stored Job
✓ Set permissions ☐ Send emails	Digital Sending Service (DSS) Secondary E-mail
Apply Actions	Digital Sending Service (DSS) Workflow
	All Clear All Set

The following group operations are available:

- Assign new random PICs to a group of users.
- Assign the same device function rights to a group of users.
- Email a group of users their PIC and device function rights information.
- Download a CSV file containing the AD-Authenticator information for a group of users.
- Encrypt PICs stored in AD for a group of users.
- Decrypt PICs stored in AD for a group of users.

IMPORTANT: The Group Manager is powerful; it can alter the PIC and device function rights of all users. The Group Manager can be configured so it is available only to a select group of highly qualified personnel.

Groups are defined using LDAP filters in the file AD-Authenticator-Configuration.xml. The groups are generally defined upon installation of the AD-Authenticator and do not need to be changed again. Two groups, ActivatedUserList and CandidateUserList are defined by default.

- The ActivatedUserList group filter selects only those users who have been assigned a PIC and device function rights.
- The CandidateUserList selects those users who have not yet been assigned a PIC or device function rights.

9.6 DB User Editor

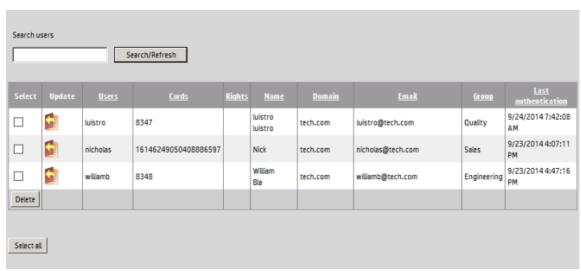
DB User Editor is used to manage users when the user information is stored in a database.

Prerequisites

Database is selected as the data storage location in the IRM tile > AD Configurator tab.

The DB User Editor tab allows you to edit user card/code numbers and view the last time a user authenticated at a device.

Figure 9-2 DB User Editor



To change a Card or Code parameter, complete the following steps:

- Click the IRM tile and select the AD-User Editor tab. 1.
- Enter the username and click **Find**.
- 3. Click the Edit icon.
- Enter a new card or code number for the user by selecting the card or code. Click **Update** to update the database with the new user data.

9.7 Review and change User Code and device feature rights with DB **User Editor**

9.7.1 Add users to the database

Users can be added automatically by authenticating at a device, or they can be added from Active Directory using the AD User Editor.

- In the AD User Editor tab, find the user you want to add to the database.
- Enter a new code or card number for the user. Click **Update** to update the database with new user data.
- In the DB User Editor, click the **Search/Refresh** button. The user data displays.

9.7.2 Modify user codes

- Click the Edit icon.
- Under the Codes column, edit the user code.
- Click the Save icon. 3.

9.7.3 Modify user cards

- 1. Click the Edit icon.
- 2. Under the Cards column, edit the user card number.
- 3. Click the Save icon.

9.7.4 Delete users from the database

- Under the Select column, click the checkbox on the row of the user(s) you want to delete.
- Click **Delete**.

9.7.5 Search for users

- 1. In the Search users field, enter any part of a user's name, card number, or code number.
- Click Search/Refresh.

9.8 Device-based User List management

9.8.1 User List Editor

HP AC can be configured to have user information stored locally on the device, so that querying a SQL or AD server does not happen at the time of user authentication.

Prerequisites

- HP SF or MFP
- In-printer agent installed and configured

Enter user information in the rows and columns of the editor. Each row represents a user and each column represents the information for a specific user. The column definition is as follows.

Table 9-1 User List Editor details

Item	Description
Full Name	User's full name (for example, <i>John Smith</i>). This value is used to associate an entry with a user.
Username	User's login (for example: jsmith). This value may be displayed by HP ACJA in certain reports. This field must be unique and usually matches the user's Windows login ID.
Domain (optional)	User's Windows domain (for example: HP.com). This field may be displayed by HP ACJA in certain reports.
Password/PIN	User's password/PIN. This value is used by the user to authenticate. This field must be unique.
Email	User's email address (for example: jsmith@hp.com). This value is used to set the From address field when HP AC IRM is used to authenticate email use. This field must be in the form of a valid email address.
Group	An arbitrary group that the user may belong to (for example: Account Log). This value may be displayed by HP AC Job Accounting in certain reports.
Allow Color Access	If this box is selected and HP AC IRM Color is correctly configured, users are allowed to make color copies on a HP Color LaserJet MFP.

When information is completed on a line, click the asterisk on the next line to save the information or begin a new line.

9.8.2 Manually enter user information

The User List Editor can be used to manually enter user information. In this mode, the editor operates similar to a spreadsheet program.

- Go to the **Settings** tile and select the **User List Editor** tab.
- Click on a row and enter the user's information

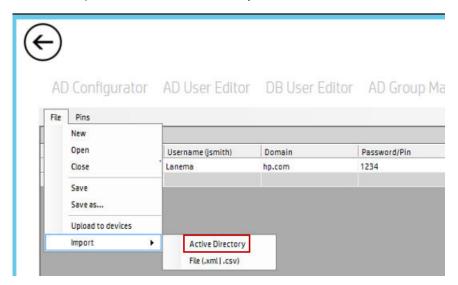


- Click on the empty row below (designated with the asterisk) to save the information and begin a new line.
- Upload user list to a device. See

9.8.3 Import users from AD

Users can be imported from an existing AD. This allows for rapid creation of user lists. Complete the following steps to import users:

- Go to the **IRM** tile and select the **User List Editor** tab.
- Click File > Import, and select Active Directory.



Supply the LDAP Server login information. If the server is authenticated on the domain you are importing from you do not need to enter any information. The logged on user requires the appropriate privileges to read from AD.

Figure 9-3 User List Editor – Import Users

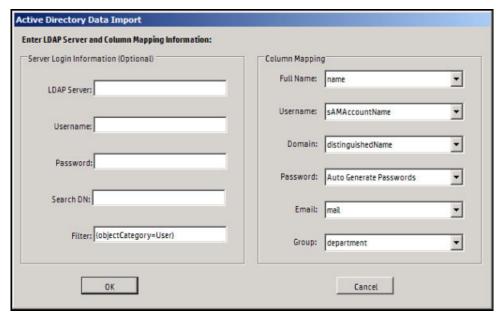


Table 9-2 User List Editor – LDAP Server login information

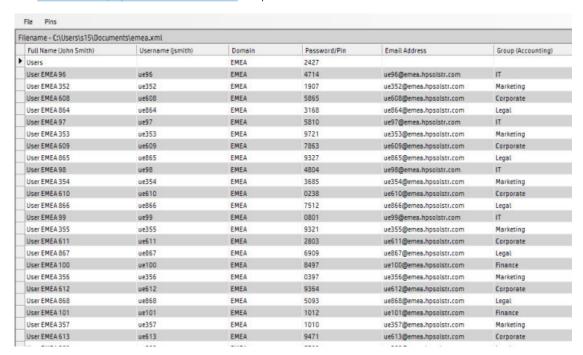
ltem	Description	
LDAP Server	Host name or IP address of the AD server	
Username	The Windows User ID of an account with privileges to read the AD. If logging into a separate domain, the user name takes the form DOMAIN\username (for example: YOURBUSINESS\Administrator).	
Password	Password associated with the Username.	
Domain	A special field. It will pull the domain value from the users distinguishedName by using the first DC= attribute listed in the value. For example: CN=User, CN=users, DC=americas, DC=hpsolstr, DC=com. It would pull the DC=americas as the domain name.	
Filter	Used to restrict users that are imported by the tool. For example, if only users from the support department are imported, a filter (& (objectCategory=User) (department=support)) can be specified. This field follows the standard A String Representation of LDAP Search Filters (RFC2254).	
	TIP: A filter may be so restrictive that it results in no users being imported.	

Select **Column Mapping**.

This mapping defines which attribute in the AD maps to which column in the user list. In most cases, the defaults suffice. However, in some cases, a different AD attribute may be appropriate. For example, if the employeeID attribute in AD is to be used for the Password column, this can be selected or entered into the Password selection box.

- To have a password (Code) generated for each user, select Auto Generate Passwords. Auto Generate Password is a special option that causes passwords to be generated for each of the users. A Password Option page displays after the import succeeds. For more information, see Section 9.8.5, Generate PINs
- 6. Click **OK** to begin the import.

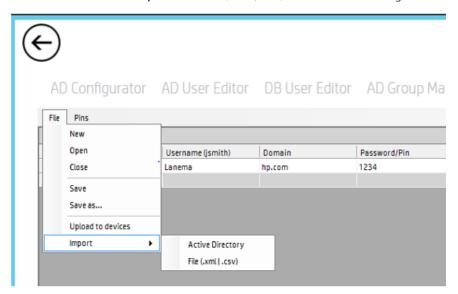
7. See Section 9.8.7, Upload a list to a device to upload a user list to the device.



9.8.4 Import users from a CSV file

Users can be imported from a CSV file, allowing for rapid creation of user lists.

- 1. Go to the **Settings** tile and select the **User List Editor** tab.
- 2. Click **File** and then click **Import**. Click **File** (.xml | .csv) and select an existing CSV file.



3. The CSV file should have the following column definition:

pwd-enc,username,password,domain,alias,email,group,allow-color,jsmith, 012345,YOURBUSINESS,John Smith, support@yourbusiness.com, group1, True, admin, 01234, YOURBUSINESS, admin, admin@yourbusiness.com, group2, False

Upload user list to a device. See Section 9.8.7, Upload a list to a device to upload a user list to the device 4.

9.8.5 Generate PINs

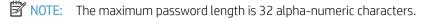
The User List Editor can generate a unique password/PIN for each user in the list. Use the following steps to generate PINs. Click **PINs**, and then click **Generate** to access the Generation Options dialog.

9.8.5.1 Alphanumeric Password

This option allows the selection of the types of characters to include in a password. If **Alphanumeric Password** is deselected, only [0–9] passwords are generated. If **Alphanumeric Password** is selected, both lower-case [a-z] (Include, upper Case Letters) characters can be chosen.

9.8.5.2 Password length

This option defines the length (number of characters) of the passwords to be generated.

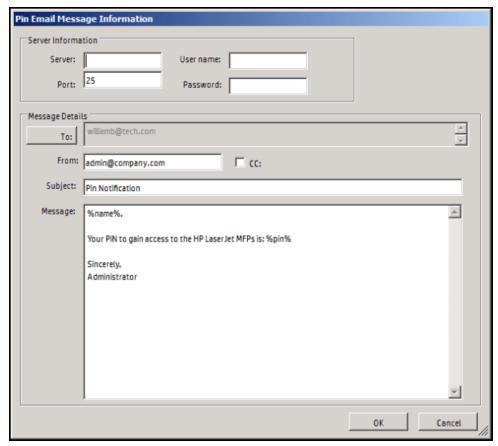


9.8.5.3 Reset All

Select this option to reset and regenerate all passwords.

9.8.6 Email PINs

The User List Editor can email generated PINs to users in the list with valid email addresses.



Use the following steps to email the PINs to each user.

- Click PINs, and then click Email.
- NOTE: Only users with a valid email address are added to the To: list.
- Supply the SMTP Server login information. This information is optional if the PC running the editor has been configured with an email server (click Control Panel > Mail). Otherwise, the server information must be supplied.

Table 9-3 User List Editor — SMTP Server login information

Item	Description
Server	Host name or IP address of the SMTP server.
Username	The Windows User ID of an account with privileges to log in to the SMTP server. This field is required only if the SMTP server is protected with a username and password.
Password	Password associated with the username. This field is required only if the SMTP server is protected with a username and password.
Port	Port number for the SMTP protocol associated with the server.

Supply the message details. This allows the details of each email message to be customized.

Table 9-4 User List Editor — Message details

Item	Description
То	A list of user email addresses that will have their PIN emailed to them. To delete or view users in the list, click To .

Table 9-4 User List Editor — Message details (continued)

From	Email address displayed in the From: address of each email.
СС	If CC is selected, the email address defined in the From: field receives a convenience copy of all emails sent. For example, if there are ten users, ten convenience copies are sent to the email address defined in the From: field.
Subject	The subject of the email sent to the users.
Message	This is the message body of the email being sent to the users.
	There are two special fields: %pin% and %name% .
	The user PIN is substituted in the %pin% field. The user's full name is substituted in the %name% field. These two fields can be used, along with other text, to customize the message.

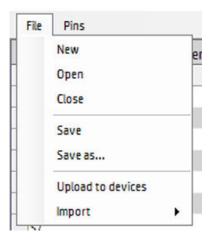
9.8.7 Upload a list to a device

Prerequisites

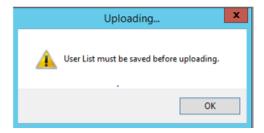
- HP AC Job Accounting In-Printer Agent must be installed.
- HP MFP or HP SF devices
- Must have either Section 9.8.2, Manually enter user information, Section 9.8.3, Import users from AD, or Section 9.8.4, Import users from a CSV file.

After the user list is created, it must be uploaded to the device(s).

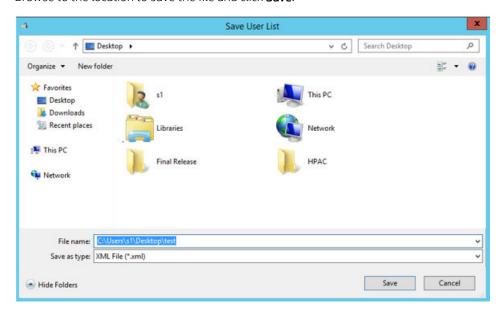
- Go to the **Settings** tile and select **User List Editor** tab.
- Click File > Import and select Upload to devices.



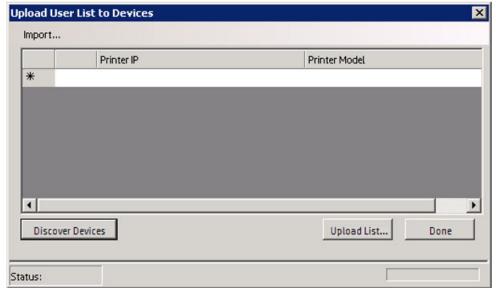
You will be prompted to save the user list. Click **OK** if not already saved.



Browse to the location to save the file and click **Save**.



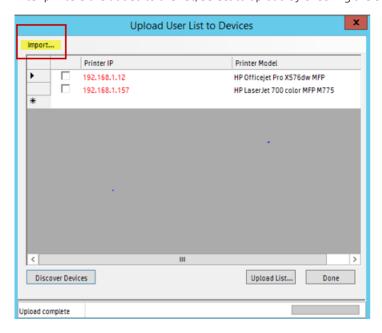
The **Upload User List to Devices** window displays. 5.



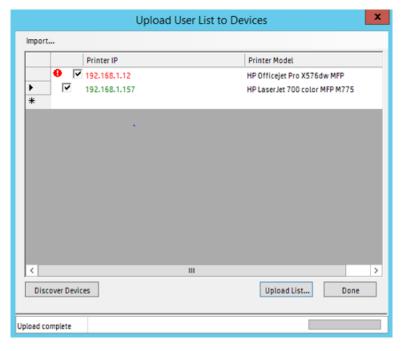
Use any of the following methods to add printers to the list:

- Discover Devices: Uses SNMP discovery on the network. All devices discovered on the network are automatically populated into the list.
- Manually enter devices.
- Import devices from Web Jetadmin export file: Click Import and select Web Jetadmin file.
- Import devices from text file: Devices can be imported from a text file. Click Import and click Text File. The editor reads a single IP address from each line (delimited by <cr><lf> of <lf> of the file.

After printers are added to the list, select to upload by checking the box in front of the IP address.



- Click **Upload List** to initiate upload to device. If device is password-protected, enter the device credentials. These credentials must match the administrator password of the device. The status at the bottom will change to "uploading."
- After upload completes, the status of each device displays. If the IP address is green, the upload succeeded. If there is an error icon in front of the IP address the upload failed. Retrieve a description of the error by hovering over the error icon.



Click Done.

MOTE:

- To remove a list from a device, perform a partial clean on the device.
- The user list can also be uploaded through the device's EWS by navigating to the Security tab > HP Access Control (IRM) and under Configuration, browse to the list and click **Upload**.

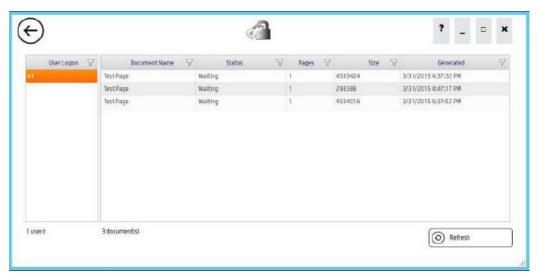
Once the upload completes, perform the following steps:

- Go to the IRM tile > AD Configurator and verify that **HPAC-IPA** is enabled.
- Go to the devices tile and configure the device for authentication.
- Go to the device's EWS and under the Security tab > HP Access Control (IRM) under Authentications select **HPAC-Local List** and click **Update**.
- NOTE: Under the Configuration section you will see the userlist.xml that was previously created and downloaded to the device.
- Go to the Access Control menu and change the sign-in method to HPAC-Local List for the features you want to have the users authenticate for. Ensure the guest user is locked out.

9.9 Managing jobs

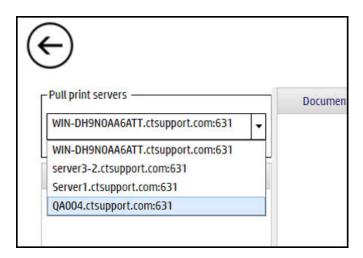
9.9.1 Deleting jobs

Click the user name to view information about the user's stored jobs in the document list on the right. To delete a print job, right-click the job and select **Delete**.



With HP Access Control Enterprise when there are multiple servers participating in roaming then the job lists of users from those other servers can be viewed from the SPP Enterprise tile.

- Go to the **SPP Enterprise** tile.
- Click the **Pull print servers** drop-down list to view the users and job lists stored on other SPP Enterprise servers.



9.10 Using myCode

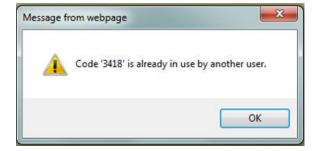
This website will allow users to change their codes.

Prerequisites

- Must have enabled in the IRM tile>AD Configurator>codes:
 - For users to view:
 - Users can view own codes.
 - To allow users to email codes:
 - Users can email own codes.
 - To allow users to change or choose own codes:
 - Users can change own codes.
 - Users can choose own codes.
- On the PC enter http://<servername>/AD-authenticator/MyCode.aspx.



- Click the **New Code** button to change the code.
- 3. To manually change the code, enter the code and click the **Update** button.
 - If the code is already in use the following message will display:



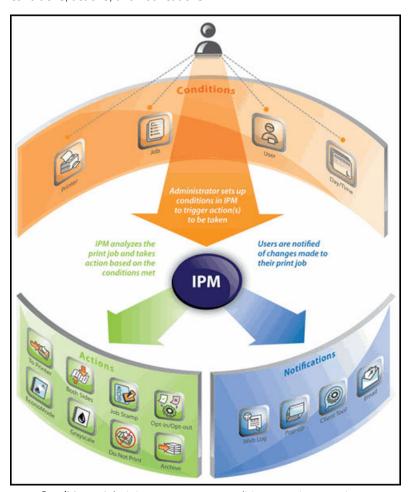
10 Intelligent Print Management

10.1 Introduction

This chapter provides detailed explanations and procedures for installing, configuring, and using HP's Access Control Intelligent Print Management system (HP AC IPM).

HP Access Control (HP AC) Intelligent Print Manager is a solution product that allows you to implement real action plans to meet your corporate initiatives, without being intrusive to the end user community. Intelligent Print Management, or rules based printing is bundled with HP Access Control Enterprise software.

Use HP Access Control (HP AC) Intelligent Print Manager to create and control printing processes by setting conditions, actions, and notifications.



- **Conditions**: Administrator sets up conditions to trigger actions
- **Actions**: IPM analyzes the print job and takes action based on conditions met
- **Notifications**: Users are notified of changes made to their print jobs

10.2 General configuration

Before setting up and creating rules, we will first configure the HP Access Control server's default options for IPM for the following:

- Failover
- Notification
- Testing
- Activity logging
- Cost per page assignments
- **User Grouping**

Prerequisites

IPM installed and configured on the HP Access Control Enterprise Server.

10.2.1 Failover

In the HP Access Control configuration utility go to the Settings tile and select the IPM tab.



To allow users to print if the client loses connection to the IPM web server, select **Skip rules if network** failure. If not selected, then rules are unable to be checked against the server and all rules-based printing will stop.



Click **Apply**.

10.2.2 Desktop notification settings

Desktop notifications can be sent from the server to the end-users desktop for notifications such as defined printing costs or opt-in/opt-out.

Prerequisites

- IPM installed and configured on the HP Access Control server.
- Clients configured for IPM and IPM Notification
- Ports open for communication between the HP AC IPM web service to the client PCs

Complete the following steps:

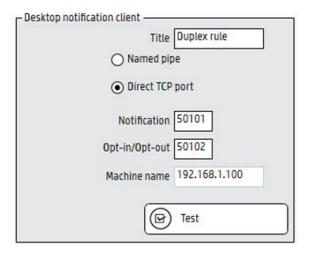
In the HP Access Control configuration utility go to the Settings tile and select the IPM tab.



- Under the Desktop notification client, enter the parameters to send notifications from the server to the desktop when the IPM Notification Desktop client is installed on the end users PC. The notification will display to the user when the rule is applied.
 - **Title**: What will appear in the notification window on client desktops.
 - Choose Named Pipe or Direct TCP port as the communication method between the server and the client desktops.
 - Machine Name: Enter the FQDN or IP address of a user's desktop to test the connection between the server and the desktop.

MOTE:

- If the TCP port is different than the default port, select **Direct TCP port**.
- If the Opt-in/Opt-out rule is enabled in IPM, select **Direct TCP port**.



- Click **Apply** and **Test** to send a message to the client PC. 3.
- On the client PC, a notification will appear in the system tray.



10.2.3 Installing the IPM desktop notification client

Run HP AC IPM Notification Desktop Client x64.msi.

Leave the ports set at the defaults and click Next. Do not check No icon in system tray, as this is the only way to turn off the client. If that is checked, then in order to turn off the client you must uninstall it.



- Click Close.
- NOTE: This is only the Notification client this is not required if there are no desktop pop-up notifications required.
- If prompted, click **Allow Access** to allow the client to communicate through the firewall.



An icon will be added to the system tray.



10.2.3.1 Do not show IPM pop-up if rule is followed

This feature applies to the IPM actions "Print in grayscale" and "Print on both sides". If either or both of the two rules are followed at the time of print, the Opt-in/Opt-out pop-up will not display. For example, if the IPM rule contains the actions "Print in grayscale" and the "Opt-in/Opt-out" pop-up, and if a user prints a document in grayscale, the Opt-in/Opt-out pop-up will not display, because the "Print in grayscale" rule is already followed. However, if the user prints a color document, the Opt-in/Opt-out pop-up displays, giving the user the option to apply the "Print in grayscale" rule.

NOTE: If any other actions are included in the Opt-in/Opt-out action, such as "Job Stamp" or "Economode", the pop-up will always display, regardless if "Print in grayscale" or "Print on both sides" are followed at the time of print.

By default, this feature is disabled. To enable the feature, complete the following steps:

- Go to the Program Files\HP\HP Access Control\IPMWS folder and open the web.config file with Notepad started with **Run as Administrator**.
- On the <add key="HidePopup" value="false" /> line, change the value from false to true.
- 3. Save the file.

10.2.3.2 Use client IP address instead of host name for IPM notification pop-up

If there are DNS issues on the network and client host names cannot be resolved, use client IP address for IPM pop-ups, instead of using client host names. By default, this feature is disabled. To enable the feature, complete the following steps:

- Go to the Program Files\HP\HP Access Control\IPMWS folder and open the web.config file with Notepad started with **Run as Administrator**.
- On the <add key="UseClientIP" value="false" /> line, change the value from false to true.
- Save the file. 3.

10.2.3.3 Enable HTML/Rich Text Box for IPM pop-up

With this feature, the Opt-in/Opt-out pop-up message that displays on user workstations at the time of print can be customized to include various font sizes, font types and images. Complete the following steps to edit the message text:

- In the Opt-in/Opt-out action properties, double-click in the "Message" text field.
- In the text editor window, modify the font type, text alignment, or insert an image.



- NOTE: The "Size=" field is the size of the message in bytes. The maximum size allowed is 64,000 bytes.
- When users print, they will see the customized message in the Opt-in/Opt-out pop-up window.



10.2.3.4 Show savings in pop-up when rules are followed

Prerequisites:

- Costs specified in the HPAC > Settings > IPM > Cost per page section.
- Configure a printer for IPM and IPM cost in the HPAC > Print Server tile, or install the Enterprise Client with IPM on a client workstation.
- Create an IPM rule with the Opt-in/Opt-out action and the desktop client notification.
- Install the IPM Notification Client on a client workstation.

When a user prints, the Opt-in/Opt-out pop-up window shows the cost of the print as well as savings if the IPM rule is applied.

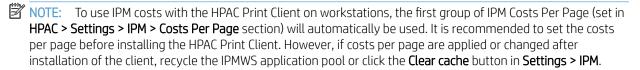


10.2.4 Cost per page

The cost per page feature to set estimated costs for different features within a print job. The Desktop Notification Client uses this data to notify the end user of the cost of a print job. If the Opt-in/Opt-out action is used, the user can modify the job to meet an estimated target cost.

Prerequisites

- IPM installed and configured on the HP Access Control Server.
- Clients configured for IPM and IPM Notification.



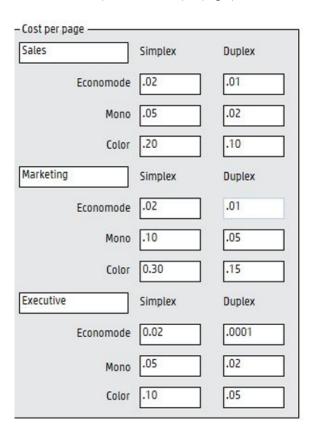
Complete the following steps:

In the HP Access Control configuration utility go to the Settings tile and select the IPM tab.



Under the Cost per page feature you can set estimated costs for different features within a print job. The Desktop Notification client uses this data to notify the end user the cost of a print job, and if the rule was created with an Opt-in/Opt-out action, the user can modify the job to reduce the estimated costs.

You can define up to three cost per page profiles to set different cost models to different print queues.



- 4. Click Apply.
- ∵ TIP: Values for duplex printing should always be lower than those for simplex printing.

10.2.5 User grouping for Job Stamps

User grouping is applied when the cost center option of an IPM job stamp rule is used. When configured, the name of the user's cost center is printed on all printed pages.

Prerequisites

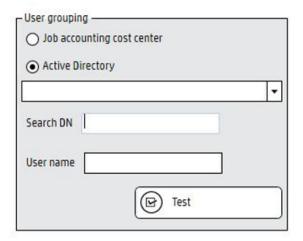
- IPM installed and configured on the HP Access Control server.
- Clients configured for IPM and IPM Notification.
- HP Access Control Job Accounting server if using job accounting cost centers.
- Rule created using a job stamp.

Complete the following steps:

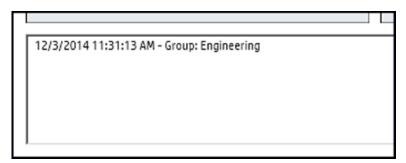
In the HP Access Control configuration utility go to the Settings tile and select the IPM tab.



Choose the Job accounting cost center if you want costs centers previously defined within HP Access Control Job Accounting, or select **Active Directory** if you want to use groups defined in Active Directory.



- If using Active Directory, click the drop-down list to select an AD field that contains the group names you want in the jobs stamps.
- NOTE: The **Search DN** field displays the domain your server belongs to.
- To test the connection to either Job Accounting cost centers or AD, enter a network username in the **User** name field and click Test. The name of the group the user belongs to will display in the status bar at the bottom.



Click Apply.

10.2.6 IPM Authentication

IPM authentication contains the credentials to allow the IPM web service to retrieve user grouping information and for notifications.

Prerequisites

- IPM installed and configured on the HP Access Control server.
- Clients configured for IPM.
- Device configured for IPM.
- Print driver configured to Start Printing after last page is spooled.

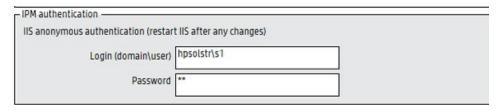
- User Grouping information configured in the Settings tile > IPM tab > User Grouping section.
- For notifications, a domain account or local account is required with administrative privileges. To send email notifications requires a domain account.

Complete the following steps:

Go to the Settings tile and select the IIS tab.



Under the IPM authentication enter the username and password of a domain user in the form of domain \username.



Restart IIS and click Apply.



Messages will appear in the bottom pane confirming the settings are saved and the service has restarted.

```
10/31/2014 1:12:59 PM - Save successful
10/31/2014 4:12:41 PM - IPM data saved
10/31/2014 4:53:45 PM - HPAC IPM: Settings saved
10/31/2014 4:53:48 PM - IIS service restarted
```

10.2.7 Email notification

If using email notification to notify end-users regarding IPM rules, the SMTP server must be configured.

Prerequisites

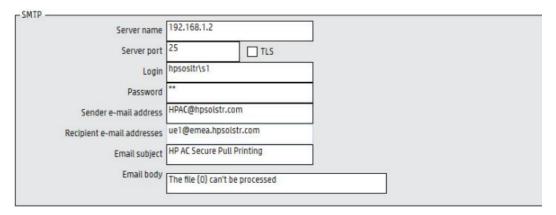
- IPM installed and configured on the HP Access Control server
- IPM Rule configured for email notification.

Complete the following steps:

Go to the Settings tile and choose the Email tab.

File Database tools Database Device Email IIS SPP Enterprise Alias Agent Print server

- In the SMTP section, enter the following information:
 - **Server Name**: Enter the FQDN or IP address of the email server.
 - Server Port: type the email server port. The default port is 25. Check TLS to enable Transport Layer Security protocol to encrypt and securely deliver the email.
 - **Login and Password**: Enter the username and password that has access to the email server.
 - Sender Email Address: Enter the email address that will appear in the "from" field of the email sent to users.
 - Recipient email: Enter an email address to test the connection between the email server and the recipient. Click **Test** to send the email.
 - **Email Subject**: Enter the subject of that will appear in the notification email.
 - **Email body**: Enter what will appear in the body of the notification email.



3. Click Test and Apply.



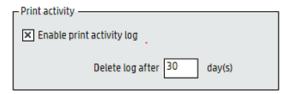
10.2.8 Activity logging

The Print Activity log provides a report of jobs printed with defined rules.

On the HP Access Control server select the Settings tile and go to the IPM tab.



Under Print activity, select **Enable print activity log**. Choose how long to keep the log before deletion.



Click Apply.

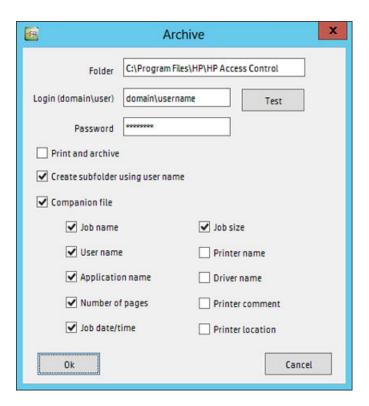
10.2.9 Configuring the Intelligent Print Management (IPM) Archive action

NOTE: Archive is only supported using a shared queue with the SPP Enterprise port and IPM configured on the server. Using IPM with the HP AC print client is not supported as jobs cannot be redirected from the client PC.

HP Access Control (HP AC) Intelligent Print Management (IPM) software can be used to create a print policy to archive print jobs. Intelligent Print Management generates companion files, which are XML files containing print job information.

To generate the companion file in Intelligent Print Management, complete the following steps:

- In the Intelligent Print Management software, open the Archive preferences window.
- For **Folder**, type the archive folder location, or double-click the text field to browse for the archive folder location. If the login information is not entered, the folder must allow write access for the "Everyone" account.
- Select **Print and archive** to send the job to the printer and the archive folder. If the box is not checked, the print job is archived but not printed.
- Select Create subfolder using user name to create a subfolder within the archive folder. 4.
- Select Companion file. As shown in the graphic below, the following Companion file sub-items must be selected to generate the companion file that can be used by Secure Pull Print Express.

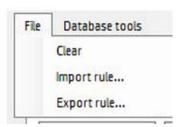


10.3 Using IPM to create rules

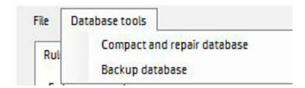
The IPM tile is where you define rules and policies to be applied to your printing environment.

The File menu allows you to import/export rules and clear rule processes.

- Click **Import rule** to import an XML file of rule processes.
- Click **Export rule** to save the current process as an XML file.



The Database tools menu allows you to repair or backup the database of information in case the server or application needs to be reinstalled.



10.3.1 Create a rule

To create a rule, complete the following steps:

Go to the IPM tile and under the Rules tab enter the name for the new rule.

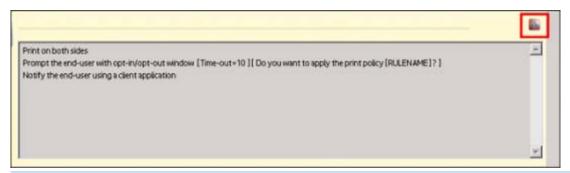


- Click Create.
- NOTE: When multiple rules are listed, use the up and down arrows to rearrange the order of the rules. Rules are checked in the order they are listed. The first rule that matches the print job properties is applied. If no rule matches the print job properties, nothing will happen.
- 3. Select a rule from the Rules list.



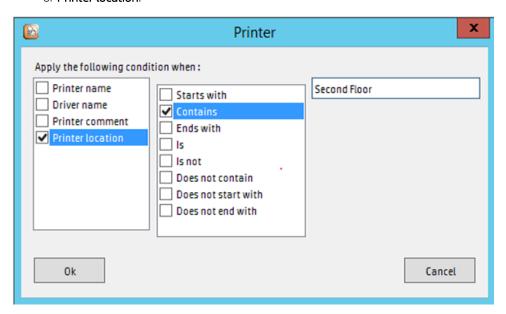
- Click the **Process** tab.
- Click and drag icons from the Conditions, Actions, and Notifications sections to the process design window 5. on the right.

Moving the cursor over icons to view a description display in the help window at the bottom. Click the expansion arrow to display a list of parameters of the current rule process.

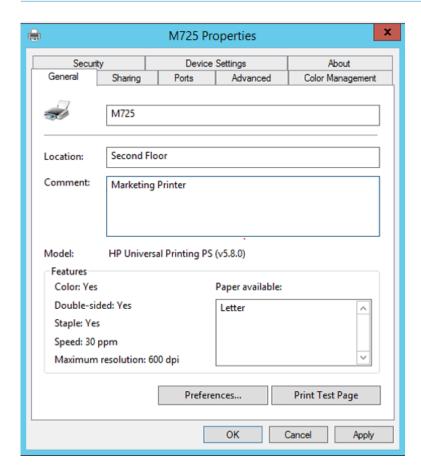


NOTE: To delete a process element, right-click the icon and select Remove. Click OK to confirm the deletion.

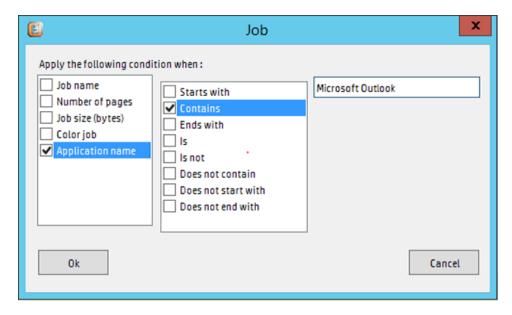
- Under Conditions, choose what condition is required to trigger the rule by dragging the icon to the process design window. Right-click the icon to view the Condition properties.
 - Printer Condition: You can create a condition based on Printer name, Driver name, Printer comment, or Printer location.



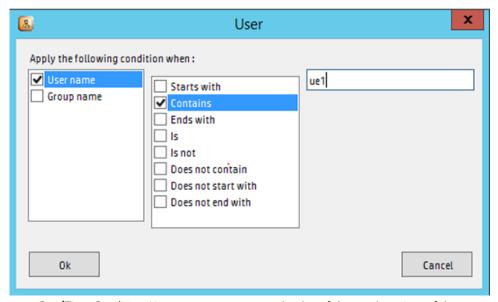
NOTE: Go to the General tab to see printer driver Properties **Location** and **Comment** information.



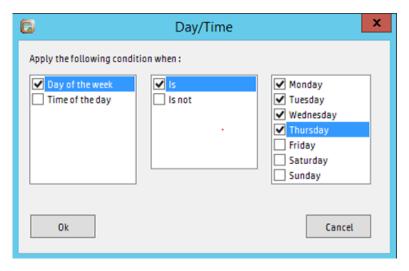
- Job condition: The following parameters are configurable and choosing one of these parameters will allow for additional configuration options (i.e. number of pages is greater than 2):
 - Job name
 - Number of pages
 - Job size (bytes). Job size is measured in bytes and usually varies, depending on the printer driver that is used when the job is spooled.
 - NOTE: When the Equal to parameter is selected, the job size must be the exact size of the spooled job. If the job size entered does not match the actual job size the condition will fail. To view the actual size of a spooled job, pause the print queue and right-click the print job and click **Properties**. The job size will be displayed.
 - Color job
 - Application name. To determine the application name print the document to a file and open the file with Wordpad. Search for the line @PJL SET JOBATTR-"JobAcct6=" where the application name will be located. Use this application name to define the condition or use the following application names listed below when using a HP print driver:
 - 0 Microsoft Word
 - Microsoft Excel
 - Microsoft PowerPoint
 - Microsoft Outlook 0
 - Microsoft OneNote 0
 - WordPad 0
 - Notepad 0
 - Paint 0
 - Adobe Reader
 - Adobe Acrobat 0
 - Internet Explorer



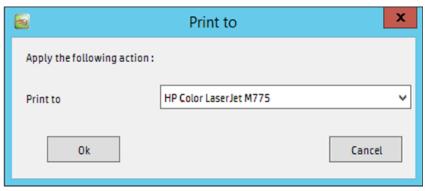
User condition: The possible parameter is User name and, if HP AC Job Accounting server is installed, you will also have Group name.



Day/Time Condition: You can set a parameter by day of the week or time of day.



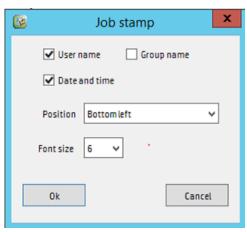
- Under Actions, you can specify what actions to apply to the job:
 - Print to a different printer: Sends the print job to a different queue installed locally on the print server.



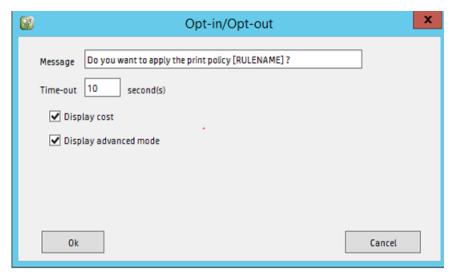
- **Print on both sides**: Creates duplex jobs.
- **Economode**: Prints the job in economode, thereby utilizing less toner.
- **Print in Grayscale**: Prints the entire document in grayscale.
- **Do not print the job**: Cancels the print job.
- Job stamp: Stamps the User name, Group name, and/or Date and time. Group name is the group name defined in HP AC Job Accounting . You can also specify the Position and Font size on this page.

MOTE:

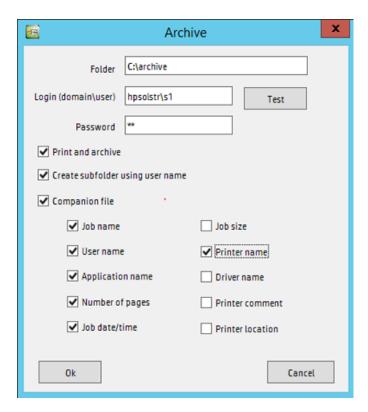
- Only available on HP LaserJet printers when using PCL5, PCL XL 3.0, or PS drivers. PCLXL 2.and PCL6 drivers are not supported.
- Only available on HP Officejet Pro and HP S900 devices when using PCL 5 or PS drivers.
- Double-byte languages are not supported.



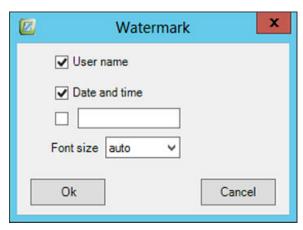
Opt-in/Opt-out: Marks the process as optional to the end user. When included in a rule, the Opt-in/ Opt-out action provides a message to users, giving them an opportunity to decline.



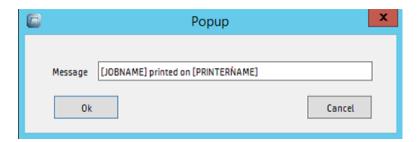
- Archive: Archives all print jobs to a folder. The folder must be in the form of drivename\foldername (i.e. c:\archives) or a UNC path (i.e. \\servername\sharename). Enter the location of the archive folder, and make sure the folder has write access for "everyone."
- NOTE: Archive is only supported with HP AC Enterprise when using a shared print queue.
 - **Print and Archive**: When not checked, the job will be archived and not printed.
 - Create subfolder using username: Creates a subfolder in the archive folder based on the User name who printed the job.
 - **Companion file**: Creates an XML file containing the information selected.



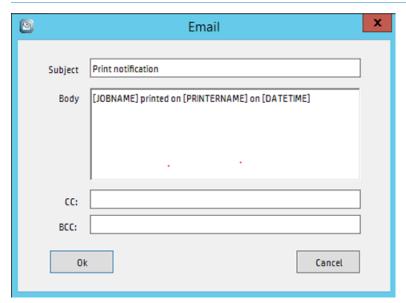
Watermark: Prints a watermark on every page. In the Properties window, select if you want to print the user name who printed the job, the date and time the job was printed, or custom text.



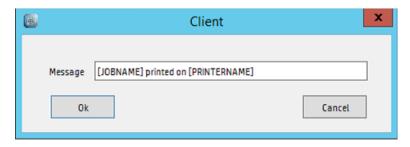
- In the Notifications, you can configure how users will be notified that a rule has been applied to their job. Any combinations can be used to notify a user of rules that affect a job.
 - **Pop-Up**: Requires messenger service to be started on the server and the end-users desktop to receive pop-up notifications. If the Messenger service is not available, the Notification client may be used.



- Email: Sends a notification email to the user. The user email is obtained automatically from Active Directory.
- NOTE: The email server must be configured to send email notifications.



- Web log: Updates the user log when the rule is used to initiate a print job. The Web log provides the user with a view/list of the print jobs that HP AC IPM has processed. To see the list of print jobs, connect to http://<HP AC IPM Servername>/myprint where <HP AC IPM Servername> is the name of the server where HP AC IPM is installed.
- Client application: Sends a message using the Notification Desktop Client. The Client must be installed on the end user desktop to receive notification.



When all the icons have been placed in the Process design window, click Auto-arrange button to align them.

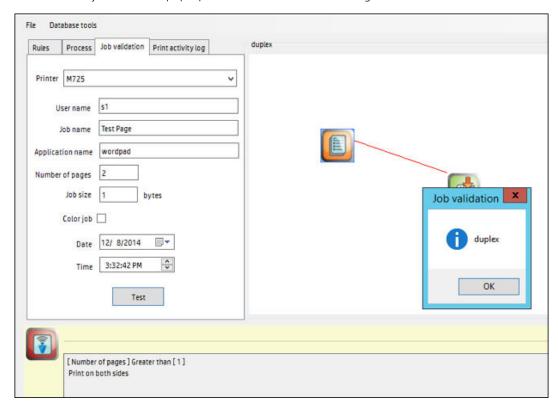


10. To determine that the conditions, actions, and notification options are valid for the rule you created, click the Check button. A message will display indicating that the rule is valid or invalid. If the rule is invalid, the icon representing the part of the process that needs correction or completion will blink. Correct the parameters and run the Check function again.



11. To test the rule, go to the **Job validation** tab. From here you can test the rules without actually creating the print job with the specific attributes to trigger the rule.

12. Select a printer from the drop-down list and enter the parameters for testing. For example, to test a rule where number of pages greater than 1 will force duplex, you would enter 2 in the Number of pages and click **Test**. The job validation pop-up will confirm the rule is working.



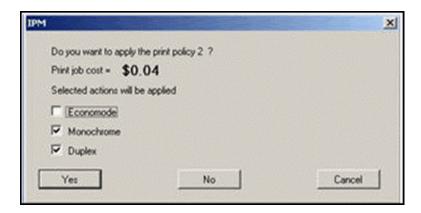
10.3.2 Notifying users of Cost per page

Prerequisites

- HP AC IPM installed and configured on the HP Access Control server.
- Rule defined using opt-in/opt-out with display cost enabled.
- Cost per page setup in Setting tile > IPM tab > Cost per page section.

The user can set the cost per page in the Cost per page section of the Settings tile > IPM tab. If the Cost per page setting is enabled in the Notification Desktop Client application, the user can see the estimated cost impact of a rule using the Opt-in/Opt-out feature. This setting is reflected in the Print job cost (the cost per page multiplied by the number of pages in the job).

Example: The administrator sets a rule for Economode, Monochrome, and Duplex. The Opt-in/Opt-out feature allows the user to override the rule by clicking any or all of the restrictions. When the user clicks a restriction, the change is reflected in the **Print job cost**.



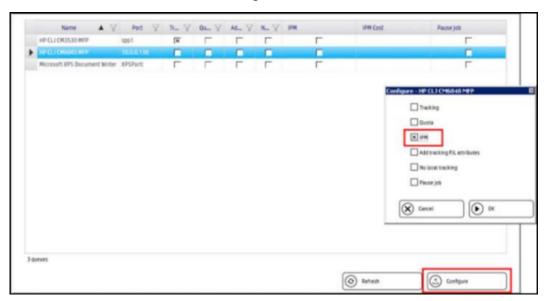
10.3.3 Configure IPM on a printer

Prerequisites

- IPM installed and configured on the HP Access Control server.
- Rule(s) configured and tested on the IPM server.
- Print driver installed on the server (required for validation and testing of the rules)
- If you will be configuring an HP Officejet Pro device, a PCL5 driver is required. PCL6 and PostScript drivers are not supported with IPM rules and HP Officejet Pro devices.

Before applying rules to a printer, you must configure the printer for IPM. Complete the following steps:

- Go to the **Print Server** tile. 1.
- Select a device from the device list. Click **Configure**.



- 3. In the Configure window, select **IPM**. Click **OK**.
- An X displays under the IPM column, indicating the printer is configured for IPM and is ready to receive 4. printing rules.

10.3.4 Print activity log tab

Prerequisites

- IPM configured on the HP Access Control server
- Print activity log enabled (Settings tile > IPM tab > Print Activity)
- Rules defined
- Devices configured for IPM
- Print jobs sent and rules applied during the last x amount of days (where x is the number of days the log is kept for before deletion).

Complete the following steps:

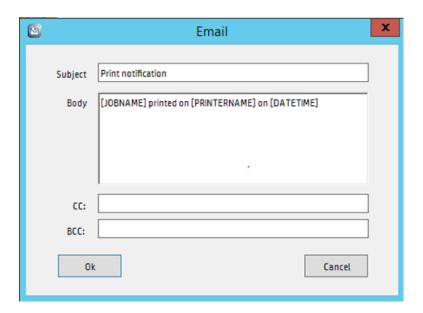
- Go to the IPM tile and select **Print Activity log** tab.
- 2. Enter information in the fields to define the report:
 - In the **From** and **To** fields, select the beginning and end dates you want to view in the log.
 - In the **Rule** field, enter a rule name to view print activity information about a specific rule.
 - In the **User** field, enter a user name to view print activity information relating about a specific user.
 - In the **Printer** field, enter a printer name to view print activity information about a specific printer.
 - In the Job name field, enter the name of a job to view print activity information about a specific print
- In the **Applied** drop-down menu, select the information you want to see in the report.
- Click **View** to see the output, or **Export** to save it as a CSV file.

10.3.5 Modifying messages to end users

Notifications sent to end user's can be customized using macros. This applies to Opt-In/Opt-Out, email messages, and pop-up notifications.

The following macros are available to customize the message:

- [PRINTERNAME]
- [RULENAME]
- [JOBNAME]
- [DATETIME]
- [USERNAME]



11 Device Analysis

11.1 Introduction

HP's Access Control Device Analysis solution allows an organization to guickly determine the performance of a networked printer fleet by gathering data and providing detailed analysis with statistical reports. Before implementing print initiatives such as cost reduction or environmentally-conscious compliance, you need to know how your fleet operates today.

HP Access Control Device Analysis (HP AC DA) provides data organization and analysis to target needs, help focus on a real action plan, and then monitor the plan's success.

11.2 Operation

This chapter describes the features and operation of the HP Access Control Device Analysis (HP AC DA) application.

11.2.1 Settings

Use the **Settings** tab to configure the parameters for the scanning process, and to schedule scans.

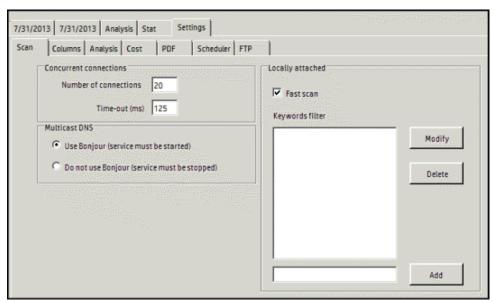
Make sure to configure additional settings, such as SNMP, email, and license settings, in the **Settings** tile.

11.2.1.1 Scan settings

Use the Scan tab to enter numbers in the Number of connections and Time—out (ms) fields in the Concurrent connections section.

Following are the Scan settings for Concurrent connections, Multicast DNS, and Locally attached scans. Click Save after making any changes. Click **Default** to restore the default settings.

Figure 11-1 Scan settings



11.2.1.1.1 Concurrent connections

The maximum number of devices scanned simultaneously.

11.2.1.1.1 Time-out (ms)

The number of milliseconds the application waits for a printer to respond to a TCP/IP request.

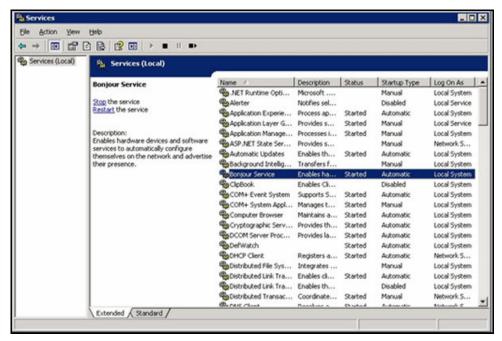
11.2.1.1.2 Multicast DNS

This section only displays if iTunes 10 is installed on the system. Choose whether or not to use Bonjour.

Follow the steps below to start or stop the Bonjour Service:

- Go to Control Panel, Administrative Tools, Services.
- Click **Bonjour Service**. Then click **Start** or **Stop** the service.

Figure 11-2 Bonjour service



11.2.1.1.3 Locally attached

11.2.1.1.3.1 Fast scan

This scan quickly scans network neighborhood for devices locally installed on connected PCs.

If not checked, the scan generates a list of all locally attached devices on all PCs on the domain controller. The amount of time to complete the scan depends on the size of the domain. Larger domains cause slower scans.

11.2.1.1.3.2 Keywords filter

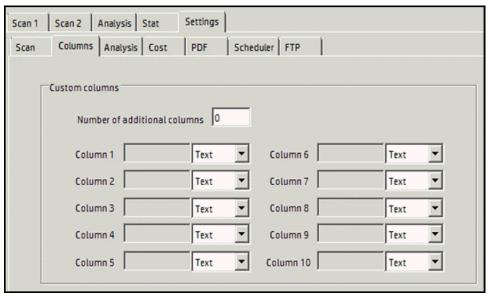
Filters keywords found in the driver names.

- Type keywords in the appropriate text box. 1.
- Click Add to add to the list.

11.2.1.2 Column settings

Use the **Columns** tab to set up columns that contain custom device data. Create up to 10 additional columns. Choose to display data in text, integer, decimal, or date format.

Figure 11-3 Column settings



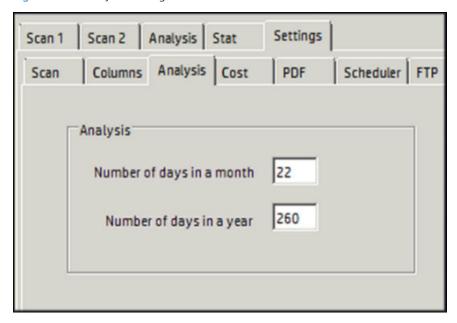
Follow the steps below to configure column settings:

- Enter the preferred number of additional columns in the text box.
- 2. Enter title names for the columns next to the column numbers.
- 3. Use the drop-down menu(s) to format the data as Text, Integer, Decimal, Date or Currency.
- 4. Click **Save** when finished.

11.2.1.3 Analysis settings

Use the Analysis tab to define the Number of days in a month and year in the appropriate fields. These fields are used to calculate the page count. Click **Save** after making changes. Click **Default** to restore the default values.

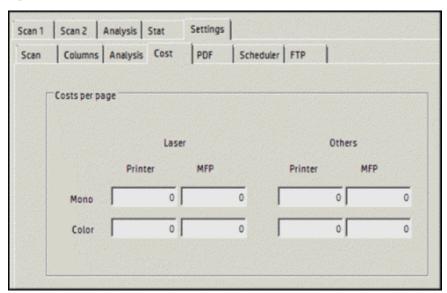
Figure 11-4 Analysis settings



11.2.1.4 Cost settings

Use the **Cost** tab to define the per-page costs for Mono and Color printing devices. Click **Save** if any changes are made.

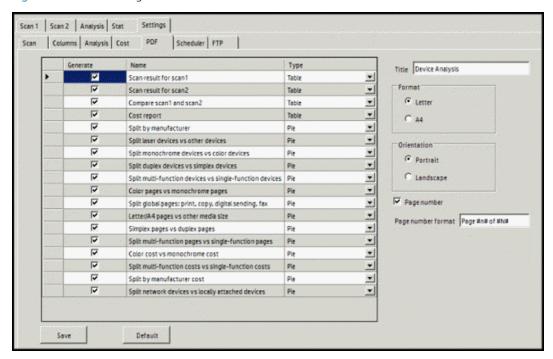
Figure 11-5 Cost settings



11.2.1.5 PDF settings

Customize the data displayed in the PDF report of your scans and analysis. Click **Save** to save changes. Click **Default** to restore the default settings.

Figure 11-6 PDF settings



11.2.1.5.1 Display options table

The table under the PDF tab contains the display options for the PDF report. Each row represents a page of report information. The following information and options are displayed in the table:

- Generate: Which sub-report pages will be generated in the PDF report. Place a checkmark next to the name of each sub-report page you want displayed in the PDF report.
- Name: Name of the sub-report page.
- **Type**: Graphic display for the sub-report information. Use the drop-down menus to select the graphic display.
- 🌣 TIP: The PDF report will generate the sub-report pages in order from top to bottom. Click and drag the heading of a selected row up or down to change the order of the sub-report pages in the PDF report. Click the Default button at the bottom to restore the default order of the sub-reports.

11.2.1.5.2 Title

Enter the title of the PDF report in the text field.

11.2.1.5.3 Format

Select the paper size for the PDF report:

- Letter
- Α4

11.2.1.5.4 Orientation

Select the page orientation:

- **Portrait**
- Landscape
- TIP: Use Landscape orientation if the report is a comparison of two scans. This displays the two scan graphics on the same page for easy comparison.

11.2.1.5.5 Page number and Page number format

Select Page number if the page numbers should display in the PDF report in the bottom-right corner.

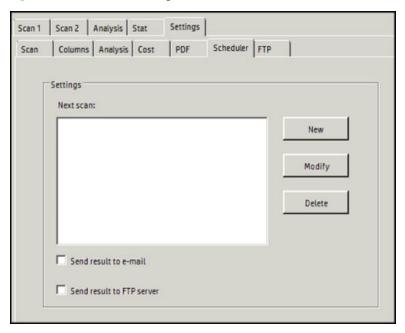
If Page number is selected, the Page number format option displays. Edit the text in the text field to customize the display of the page numbers.

NOTE: The variable text "#n#" represents the current page number and "#n#" represents the total number of pages. Edit the text to change what is visible in the bottom-right corner.

11.2.1.6 Scheduler settings

Use the **Scheduler** tab to define future and recurring scans.

Figure 11-7 Scheduler settings



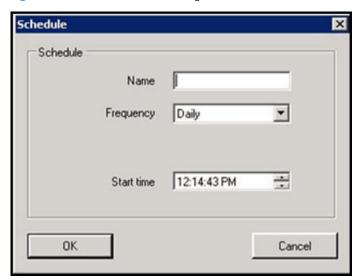
11.2.1.6.1 Create a new schedule

Follow the steps below to create a new schedule:

- 1. Under the Scheduler tab, click **New**.
- 2. Enter a Name for the new schedule in the Name field.
- 3. Set the Frequency for a recurring scan: Daily, Weekly, or Monthly.
- 4. Use the up or down arrows to set a Start time.

Click **OK** to accept the settings.

Figure 11-8 New schedule meeting



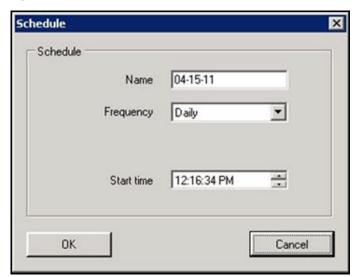
- Click **Save** to save the schedule.
- IMPORTANT: The Scheduler feature will work only if the application is running.

11.2.1.6.2 Modify a schedule

Follow the steps below to modify an existing schedule:

- Select a scheduled scan in the Settings window of the Sheduler tab.
- 2. Click Modify.
- 3. Make any desired changes in the Name, Frequency or Start time.
- Click **OK** to accept the settings.

Figure 11-9 Modify a schedule

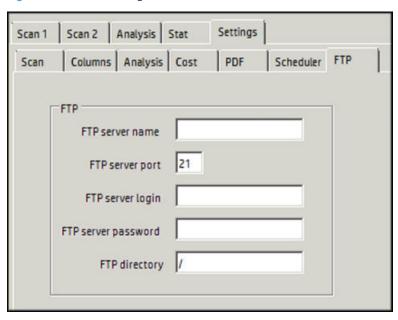


5. Click **Save** to save the schedule.

11.2.1.7 FTP settings

Use the **FTP** tab to define settings for FTP delivery of scan results.

Figure 11-10 FTP settings



11.2.2 Scanning devices

When the Device Analysis tab is first selected, the default screen is shown. Unless a previous scan is open when HP Access Control Device Analysis (HP AC DA) is started, the columns on the default screen do not contain any

Figure 11-11 Scan tab



11.2.2.1 Create a new scan

To create a new scan, complete the following steps:

- Select the **Scan 1** or **Scan 2** tab.
- Under the Scan menu, choose the scan function you wish to perform:
 - SNMP discovery
 - Start multicast DNS discovery
 - IP range discovery
 - Locally attached discovery
 - Rescan all
 - Rescan selected rows

11.2.2.1.1 SNMP discovery

SNMP discovery sends a broadcast over a selected network and discovers what devices are available.

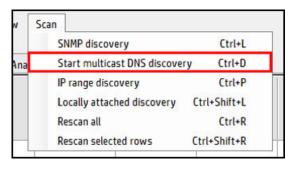
Go to the Scan menu and select **SNMP discovery**.

11.2.2.1.2 Start multicast DNS discovery

Multicast DNS discovery continually scans the network for devices until **Stop multicast DNS discovery** is selected. The scan is ongoing to show any device changes as they happen.

Go to the Scan menu and select **Start multicast DNS discovery**. The progress of the DNS discovery is tracked in the activity log at the bottom.

Figure 11-12 Start DNS



To stop the scan, go to the Scan menu and select **Stop multicast DNS discovery**.

Figure 11-13 Stop multicast DNS discovery

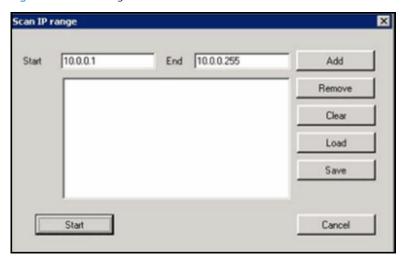


11.2.2.1.3 IP range discovery

Discover devices within a selected range of IP addresses.

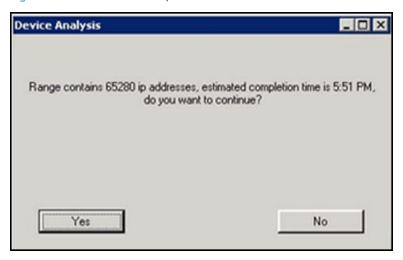
- 1. Go to the Scan menu and select **IP range discovery**.
- Enter IP addresses in the Start and End fields.

Figure 11-14 IP range scan



- Click **Add** to add the range to the list in the display field.
- 4. Click **Save** to save the range for future reports.
- 5. Click **Start** to begin the scan.
- NOTE: If an IP range includes over 3,000 IP addresses, a pop-up window will inform you of the estimated time of completion. Click **Yes** to continue.

Figure 11-15 Estimated completion time



11.2.2.1.4 Locally attached discovery

Discover all devices locally attached to PCs, through LPT or USB ports, on either the network or the domain controller, depending on your Locally attached settings.

To discover all locally-attached devices, go to the Scan menu and select Locally attached discovery.

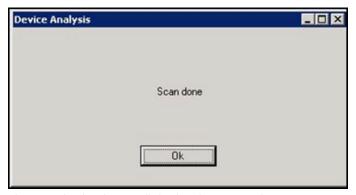
NOTE: If the HP Web Jetadmin SNMP Proxy Agent is installed on a desktop where a device is locally attached, an SNMP broadcast or IP range discovery will discover the device.

Go to www.hp.com for more information.

11.2.2.1.5 Rescan all

When a scan is loaded, go to the Scan menu and select Rescan all. This will collect current data and update all devices using the same scan parameters in Scan 1 or Scan 2. When the scan has finished, the Scan done message will appear.

Figure 11-16 Scan completed



The Last Check column will display the current date.

11.2.2.1.6 Rescan selected rows

To collect current data for one or more selected devices, click on the row(s) you want to rescan. Then go to the Scan menu and select Rescan selected rows.

11.2.2.2 Open a previous scan report

Follow the steps below to load information from a previous scan:

- Select the **Scan 1** OR **Scan 2** tab.
- Go to the File menu and click **Open** to open a previous scan. 2.
- Navigate to the scan file (.das) and click **Open** to load the scan.

11.2.2.3 Insert a scan

Follow the steps below to load information from another scan into the current scan:

- Click **Insert** on the File menu.
- Navigate to the scan file (.das) and click **Open** to load the scan. The inserted data is included at the end of the data currently displayed.

11.2.2.4 Edit menu

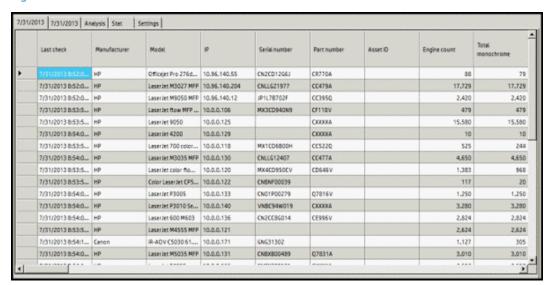
Use the **Edit** menu to edit the data in the selected rows.

- **Undo**: Undo one previous action
- **Copy selected rows**: Copy one or more selected rows
- **Cut selected rows**: Cut one or more selected rows
- **Paste selected rows**: Paste one or more selected rows
- **Delete selected rows**: Delete one or more selected rows

11.2.3 Scan data

When a scan is loaded, the columns are populated with data from the devices in the scan range.

Figure 11-17 Scan data



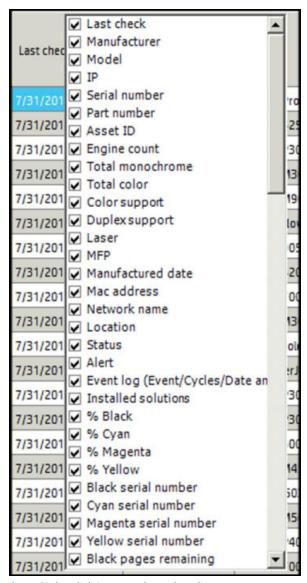
The following information displays by default for each scan performed:

- Last check: the date the scan was performed
- Manufacturer: the manufacturer of the device scanned
- **Model**: the device model number
- IP: the device IP address
- **Serial number**: the device serial number
- Part number: the device part number
- Asset ID: the asset ID number of the device
- **Engine count**: the device engine count
- **Total mono**: the total number of monochrome pages
- **Total color**: the total number of color pages
- **Color support**: Does the device support color printing?
- **Duplex support**: Does the device support duplex printing?
- **Laser**: Is the device a LaserJet printer?
- **MFP**: Is the device a multi-function printer?
- **Manufactured date**: the date the device was manufactured (may be entered by user)
- MAC address: the Media Access Control (MAC) address of the device
- **Network name**: the name of the device network
- **Location**: the location of the device
- **Status**: the device status
- Alert: any alerts on the device
- Event log (Event/Cycles/Date and time): last error code recorded on HP devices (includes error code / page count / date and time)
- **Installed solutions**: any solutions installed on HP devices

11.2.3.1 Customize column display

Follow the steps below to customize the columns displayed in a scan:

Figure 11-18 Customize columns



- Right-click in any column heading.
- 2. Clear the check boxes of the columns that should not display.

11.2.3.2 View options

Click **View** menu and select any additional data columns to display:

- Total
- Duplex
- Format
- Toner
- Supplies
- Cost
- Column

- Sum/Average
- Default
- Log

11.2.3.2.1 Total

Click **Total** to display the following columns:

- **Total fax**: the total number of copies faxed from the device
- **Total scan**: the total number of copies scanned on the device
- **Total mono prints**: the total number of pages printed in monochrome
- **Total color prints**: the total number of pages printed in color
- **Total mono copies**: the total number of pages copied in monochrome
- Total color copies: the total number of pages copied in color

11.2.3.2.2 Duplex

Click **Duplex** to display the following columns:

- Print Letter/A4 duplex monochrome number of A4 + letter pages printed in duplex mode, monochrome
- **Print other media size duplex monochrome** number of other media pages printed in duplex mode, monochrome
- Print Letter/A4 duplex color number of A4 + letter pages printed in duplex mode, color
- Print other media size duplex color number of other media pages printed in duplex mode, color
- Scan Letter/A4 duplex monochrome number of A4 + letter pages scanned in duplex mode, monochrome
- Scan other media size duplex monochrome number of other media pages scanned in duplex mode, monochrome
- Scan Letter/A4 duplex color number of A4 + letter pages scanned in duplex mode, color
- Scan other media size duplex color number of other media pages scanned in duplex mode, color

11.2.3.2.3 Format

Click **Format** to display the following columns:

- Print Letter/A4 simplex monochrome: Number of A4 and letter pages printed in simplex mode on a monochrome setting
- Print other media size simplex monochrome: Number of other media pages printed in simplex mode on a monochrome setting
- Print Letter/A4 simplex color: Number of A4 and letter pages printed in simplex mode on a color setting
- Print other media size simplex color: Number of other media pages printed in simplex mode on a color setting
- Scan Letter/A4 simplex monochrome: Number of A4 and letter pages scanned in simplex mode on a monochrome setting
- Scan other media size simplex monochrome: Number of other media pages scanned in simplex mode on a monochrome setting

- Scan Letter/A4 simplex color: Number of A4 and letter pages scanned in simplex mode on a color setting
- Scan other media size simplex color: Number of other media pages scanned in simplex mode on a color setting

11.2.3.2.4 Toner

Click **Toner** to display the following columns:

- % Black / Cyan / Magenta / Yellow: Percentage of color ink used
- Black / Cyan / Magenta / Yellow serial number: Serial number of color ink cartridge
- Black / Cyan / Magenta / Yellow pages remaining: Number of remaining pages the color ink cartridge can produce
- Black / Cyan / Magenta / Yellow pages printed: Number of pages printed with the color ink
- Black / Cyan / Magenta / Yellow install date: Date the color ink cartridge was installed
- Black / Cyan / Magenta / Yellow last use date: Date the color ink cartridge was last used
- Quantity Black / Cyan / Magenta / Yellow cartridge: Number of cartridges used on the device (entered by user)

11.2.3.2.5 Supplies

Click **Supplies** to display the following column:

Misc. supplies 1 - 25: List of supplies installed on the device

11.2.3.2.6 Cost

The Cost view option will display the total costs of printing, based on the per-page costs set in the Cost settings tab.

Click **Cost** to display the following columns:

- **Total cost**: total cost of all printing
- Monochrome cost: total cost of monochrome printing
- Color cost: total cost of color printing

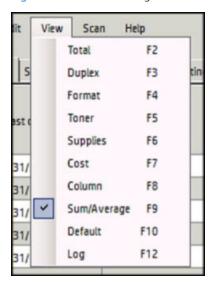
11.2.3.2.7 Column

The Column option, when selected, will show any custom columns that have been added in the Columns settings tab.

11.2.3.2.8 Sum/Average

The Sum/Average option calculates the sums and averages for all devices scanned and displays the calculations below the scan results.

Figure 11-19 Sum average



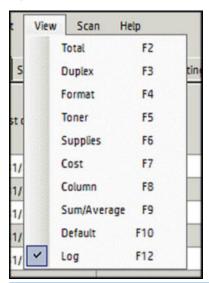
11.2.3.2.9 Default

The Default option will remove any other options checked and return the columns to the default view.

11.2.3.2.10 Log

The Log option displays the activity log box at the bottom of the Device Analysis window. The activity log shows the timed progress of a selected scan, including information on the found devices.

Figure 11-20 Log option



Click and drag the top border of the activity log box to adjust the height to view more scan activity on the screen.

Right-click anywhere in the log box and click **Clear** to remove all scan activity information.

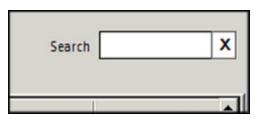
Figure 11-21 Clear activity log



11.2.3.3 Search

Use the **Search** field to filter scan results.

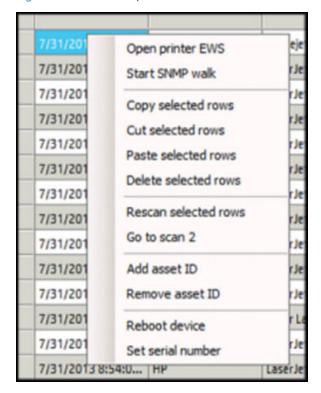
Figure 11-22 Search field



11.2.3.4 Device options

Right-click a device line to display an option menu for that device.

Figure 11-23 Device options



- Open printer EWS: Go to the embedded web server for the device
- Start SNMP walk: Gather and report SNMP data for the device in a .txt file
- **Copy selected rows**: Copy one or more selected rows
- **Cut selected rows**: Cut one or more selected rows
- Paste selected rows: Paste one or more selected rows
- **Delete selected rows**: Delete one or more selected rows
- Rescan selected rows: Perform a new scan on one or more selected rows
- Go to Scan 2: Jump to corresponding device line in Scan 1 or Scan 2
- Add asset ID: Add a sequential asset ID for every device in the scan
- **Remove asset ID**: Remove a sequential asset ID for every device in the scan
- Reboot device: Reboot the selected device
- Set serial number: Change the serial number of HP devices. Type the new number of the HP device under the **Serial number** column before clicking **Set serial number**.

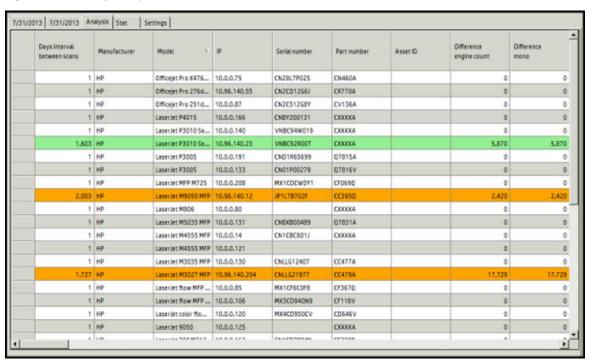
⚠ CAUTION: Adding or removing an asset ID overwrites or removes existing IDs. This action must be verified.

11.2.4 Analysis tab

The Analysis tab will display similarities and differences between the two scans loaded in the Scan 1 and Scan 2 tabs.

NOTE: If only one scan is loaded, the Analysis tab displays the page count difference between the scan and the date displayed in the Manufactured date column. If the Manufactured date column is empty, the device does not display in the Analysis report.

Figure 11-24 Analysis report



11.2.4.1 Added and removed devices

Colored rows indicate added or removed devices between Scan 1 and Scan 2. Added devices are shown in the green rows. Removed devices are shown in orange.

11.2.4.1.1 Customize view

Follow the steps below to customize the view:

- Right-click in any column title to display three view options, allowing you to customize your view of the analysis results.
 - Common devices: devices found in both Scan 1 and Scan 2
 - Added devices: devices found in Scan 2 but not in Scan 1
 - **Removed devices**: devices found in Scan 1 but not in Scan 2
- Click to deselect the options to not view the data in the analysis.

11.2.4.2 Analysis intervals

When the Analysis tab is selected, an Analysis menu becomes available to select analysis intervals.

The Page Count columns display an estimate value calculated using the Real page count and the Daily, Monthly, or Yearly interval selected, as defined in the Settings tab.



NOTE: Use the **Settings** tab to define the calculations for the Analysis interval options.

11.2.4.3 Analysis data

The following data will be provided in the Analysis report, depending upon the Analysis choices:

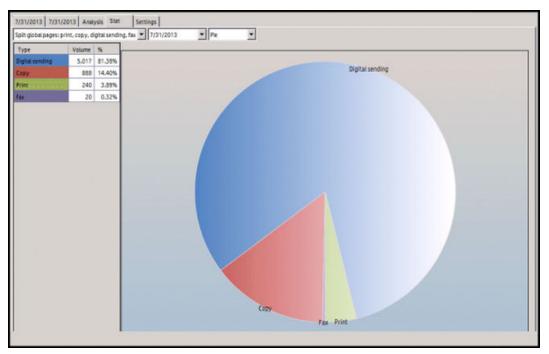
- Days interval between scans: Number of days between the dates of the first and second scans
- **Difference/Average/Projected engine count:** Difference in the engine count between scans, the average engine count among scans, or the projected engine count of scans, depending upon whether the Analysis interval selection is Real, Daily, Monthly, or Yearly.
- NOTE: If Real interval is selected, the column header will display Difference. If the interval between the two scans is 45 days and Monthly interval is selected, the column header will display Average. If Yearly interval is selected, the column header will display Projected.
- **Difference/Average/Projected mono:** Difference in monochrome pages between scans, the average number of monochrome pages scanned, or the projected number of monochrome pages scanned, depending on the analysis interval selection
- Difference/Average/Projected color: Difference in color pages between scans, the average number of color pages scanned, or the projected number of color pages scanned, depending on the Analysis interval selection
- **Difference black**: Difference in percentage of black ink used between scans
- **Difference cyan**: Difference in percentage of cyan ink used between scans
- **Difference magenta:** Difference in percentage of magenta ink used between scans
- **Difference yellow**: Difference in percentage of yellow ink used between scans
- Difference/Average/Projected quantity black cartridge: Difference, average, or projected quantity of black cartridges used, depending upon whether the Analysis interval selection is Real, Daily, Monthly, or Yearly

- Difference/Average/Projected quantity cyan cartridge: Difference, average, or projected quantity of cyan cartridges used, depending upon whether the Analysis interval selection is Real, Daily, Monthly, or Yearly
- Difference/Average/Projected quantity magenta cartridge: Difference, average, or projected quantity of magenta cartridges used, depending upon whether the Analysis interval selection is Real, Daily, Monthly, or Yearly
- Difference/Average/Projected quantity yellow cartridge: Difference, average, or projected quantity of yellow cartridges used, depending upon whether the Analysis interval selection is Real, Daily, Monthly, or

11.2.5 Stat tab

The Stat tab allows you to display statistics based on the selected scan, in text and graphic formats:

Figure 11-25 Stat display

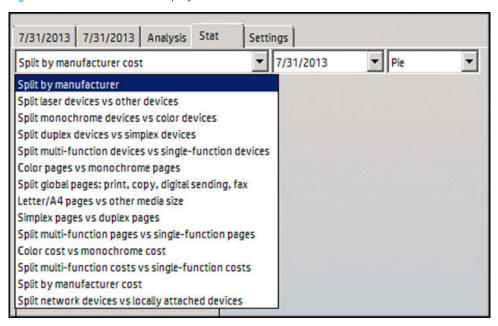


11.2.5.1 Stat display options

Use the drop-down lists to select what information to include in the scan statistics.

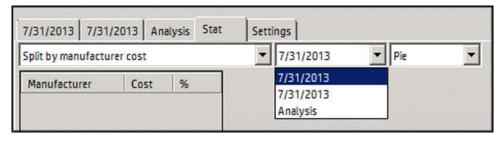
Select the data to display.

Figure 11-26 Statistic data display



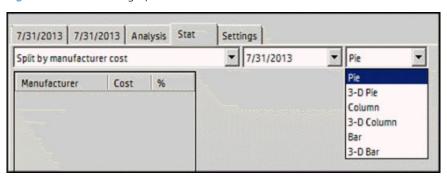
Select a scan or analysis to display.

Figure 11-27 Statistics scan



Select the graphic display.

Figure 11-28 Statistic graphic

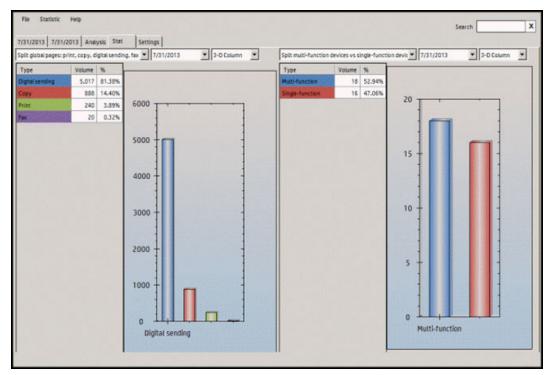


11.2.5.2 Statistic menu

Use the **Statistic** menu to customize the view of the statistic data.

- **Legend**: displays the legend for the graph
- **Split screen**: displays two sets of data and graphics for comparison

Figure 11-29 Statistics display



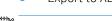
Save and share the important data from your scans by exporting to a CSV or XLS file, or generating a PDF report.

11.2.5.2.1 Export

Export the scan data, analysis, or statistics to a .csv or .xls file. Use Microsoft Excel to view any exported graphics.

Click **File**. In the Export sub-menu, select one of the two options:

- Export to CSV
- Export to XLS



NOTE: Selecting Export only exports information visible on the screen in the currently-selected tab. Therefore, check that all data and graphics on the screen are correct, then export to the preferred file. To export data from the Stat tab to an .xls file, Microsoft Excel must be installed.

11.2.5.2.2 Generate PDF report

Follow the steps below to create a PDF report that displays all scan data and graphics in one report.

- Approve all PDF report settings in the PDF tab under Settings.
- 2. Go to the File menu and click **Generate PDF report**.
- Select a location to save the report, then click **Save**. A **View the report** message displays.
- 4. Click **Yes** to view the report.

12 Job Accounting

12.1 Overview

HP Access Control Job Accounting enables you to track the use of devices across your organization. Gain control of your imaging and printing environment and costs. Monitor, allocate, and manage resources by tracking usage by device, user, project, department, and cost center. Collect data, and analyze the results to identify savings opportunities. Create and send reports to communicate the value and impact of printing. Create streamlined imaging and printing practices by ensuring the right device is in the right place and being used for the right job.

12.2 HP AC Job Accounting Architecture

12.2.1 HP AC Job Accounting print system overview

The HP AC Job Accounting server consists of three basic software components:

- HP Access Control (HP AC) Job Accounting Database Server
 - Collects the tracking data from Job Accounting print servers and from the devices
 - The database can be installed locally on the server or on a remote SQL server
- HP Access Control (HP AC) Job Accounting Web Server
 - The web server provides an interface through a web browser to access the data from the Job Accounting Database Server and administer the server
- HP Access Control (HP AC) Job Accounting print server (HP AC Job Accounting Print Server)
 - Contains the Job Accounting tracking engines to track print information reported by the print spooler and will forward to the Job Accounting Database server.



NOTE: The modules can be installed together on one server, or split across multiple servers, if required.

To track shared network devices for printing the HP AC control Job Accounting Print server must be installed on the server hosting the shares.

12.3 Information flow

HP Access Control can track usage from supported HP devices using in-device tracking or by tracking print jobs from a print server. HP FutureSmart Devices: The Job Accounting statistics module receives tracking data and creates a XML file to push to the Job Accounting Database Server. HP Non-FutureSmart Devices: FTP or HTTP is used to receive tracking files from these devices. Non-HP Devices: support tracking of data from a print server.

12.3.1 In device tracking

HP devices support tracking of page level information at the device level. This provides the most accurate level of tracking as it will only count printed pages. If a user deletes or retains and reprints a job, the information will be sent to the Job Accounting server.

How it works:

After completing a job, the printer sends tracking data to the Job Accounting data collector.

- NOTE: This can be data collectors on the Job Accounting Web server, or installed on a remote server.
- The Job Accounting web server will record the tracking data in the SQL database through a SQL transaction by the HP AC Job Accounting Agent service.
- NOTE: The database can be local or remote.

12.3.2 HP Access Control (HP AC) Job Accounting print server

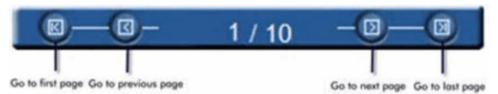
The HP AC Job Accounting Print Server can detect every print job sent to any of these shared printers by monitoring the print spooler. HP AC Job Accounting keeps track of all printed documents, as well as their characteristics including:

- Document name
- Printer (local and shared name) and its properties (such as color or black and white, or duplex unit)
- Job owner: name, machine name
- Number of sent pages and printed pages for HP devices configured to send printer confirmation using
- The printing mode (Economode, duplex, color)
- The date and time when the print job was sent
- The media used and its size (A3, A4, letter)
- NOTE: Print server tracking requires SNMP traps to be configured and working correctly to accurately track canceled pages and or retained/reprinted pages. It is recommended to use in-printer tracking.

12.4 Getting started

HP AC Job Accounting interface is easy to use, with its Remote Control panel and user-friendly buttons and icons for fast navigation through various functions. Every HP AC Job Accounting icon is context-sensitive. When the cursor is positioned for several seconds on an icon, a description of the action associated with the icon will appear. Lists and pull-down menus are built dynamically, according to what is declared/registered in HP AC Job Accounting. For instance the printers, print servers, media, and currencies are all updated based on information contained in other tables. You can use the Ctrl and Shift keys to choose multiple entries in a list.

Specific icons allow you to reach a certain page or service. By clicking on any button in the HP AC Job Accounting Remote Control panel, you will be able to access information and to launch certain tasks. When more than one page of information is generated, the page navigation bar illustrated in the figure below appears at the bottom of each page:



To reach a specific page, click the first page number in the bar and type the number of the page you want to reach:



To select one or more elements in a list, simply check the box on the left of the element, or click the box in the title bar to select all elements in the list:



To delete an item, select one or more from the list and click the delete icon in the title bar:



To modify the parameters of an element in the list, click the Modify icon:



NOTE: It is only possible to modify one element at a time.

HP AC Job Accounting has three distinct user categories:

HP Access Control (HP AC) Job Accounting users

These users have an HP AC Job Accounting account. They can launch queries and get query results (on costs, printed documents) and be informed on the print system.

HP Access Control (HP AC) Job Accounting administrators

These users have an HP AC Job Accounting account and the ability to launch gueries or gather statistics about the print system. Furthermore, HP AC Job Accounting administrators are able to manage other HP AC Job Accounting accounts, currencies, exchange rates, user permissions, etc.

HP Access Control (HP AC) Job Accounting allocation super user

These users have an HP AC Job Accounting account. They can launch gueries and obtain guery results (on costs, printed documents) and be informed on the print system. They can also view and modify allocation information stored in the database.

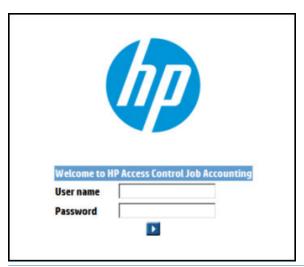
12.4.1 Login page

To access the HP AC job accounting server do one of the following:

Open the Job Accounting tile from within the HP AC configuration utility.

OR

In a web browser, enter http://<servername>HP ACJA or https://<servername>/ HP ACJA





NOTE: Both the default login and password are **Admin**. The password field is case-sensitive.

The following rules apply to the login page:

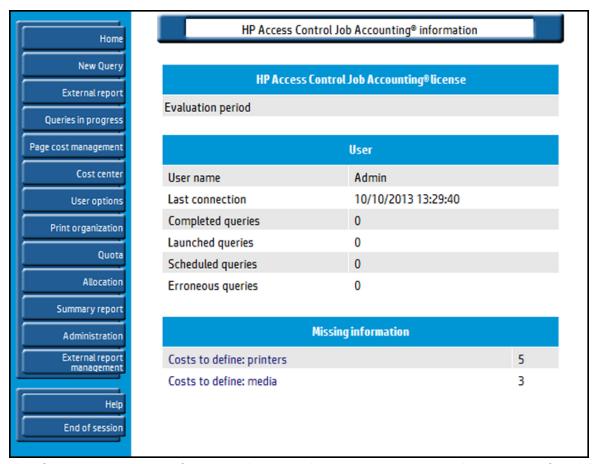
- Entering user information on this page allows access to HP AC Job Accounting.
- If the user name or password is invalid, an error message appears.

NOTE:

- For the HP AC Job Accounting Administrator Account: A default account is created when installing HP AC Job Accounting, to allow you to access the application for the first time. When you are connected, it is highly recommended that you change the password of the Admin account. For more information, see Section 12.10, HP AC Job Accounting user options.
- For HP AC Job Accounting Users: The HP AC Job Accounting administrator created your account with a user name and a password. Only your HP AC Job Accounting administrator can provide you with this information. After accessing your account for the first time, you can modify your password. For more information about modifying your password, see Section 12.10, HP AC Job Accounting user options.

12.4.2 Information page

When you have successfully logged into HP AC Job Accounting server, the HP AC Job Accounting Information page appears:



The information page consists of two parts: the HP AC Job Accounting Remote Control panel on the left, and the larger General Display window on the right. The HP AC Job Accounting Remote Control panel will always be displayed and does not change appearance. The General Display will change depending on the selection made in the Remote Control panel.



NOTE: What is displayed in the General Display will vary based on the logged in user and the associated rights assigned to that user.

The general display window is divided into the following sections:

- The information about your license status. If HP AC Job Accounting is registered, nothing is displayed.
- Information about the current user.
 - Completed queries (queries for which a result is available)
 - Launched queries (queries running and for which a result is expected)
 - Scheduled gueries (queries planned but not yet run)
 - Errors in queries (queries aborted due to error)
- Information about costs and exchange rates.
- NOTE: This information only appears for an HP AC Job Accounting administrator.

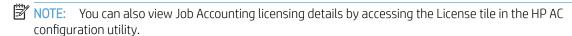
NOTE:

- For the HP AC Job Accounting administrator: Read the information presented on this page carefully. Only the proper system configuration will produce accurate query results.
- It is the HP AC Job Accounting administrator's responsibility to view this page to update the Job Accounting configuration on a regular basis. Users are not notified to update parameters surrounding elements added to the print system.

12.4.3 License

This section provides information about HP AC Job Accounting license status.

- Click the Help button on the remote control panel and click **View License Information**. License information will display.
- To view the License Agreement, click **License Agreement**.



12.4.4 Database Manager

The Job Accounting Database Manager is a simple tool for managing the Job Accounting database. It is not intended to replace any SQL Management Tools that are included with SQL Server.

 \triangle WARNING! Please make sure the database is backed up prior to applying any changes to the database.

The Database manager can be accessed:

Within the HP AC configuration utility, go to the Job Accounting tile > Database Manager tab;

OR

Using your web browser, enter the following URL:

http://<servername>/HP_ACJA

and select the Database Manager menu.



In the Server Name field, make sure to include the instance name if you used a named instance of SQL. Enter the correct login credentials. Click **OK**.

Running SQL queries:

- To view SQL queries, go to the **Database** menu and select **SQL Query**.
- 2. Enter guery and click **Run**. Results will appear in the results pane.
- Open Database menu and select **Database Manager** to exit SQL query menu.

Using Database Manager to delete records:

riangle WARNING! The deletion process cannot be reversed. Once an item has been deleted it will no longer be in the database. A complete database restore would be required to restore the deleted items to the database. All records associated with the deleted object will also be deleted.

In the **Database Manager**, select items to delete:

- Select Print servers to delete a selected print server, including all printers and jobs assigned to it.
- Select **Printers** to delete a selected printer and all jobs assigned to it.
- Select **Domains** to delete a selected domain, including all users and jobs assigned to it.
- Select **Users** to delete a selected user and all jobs assigned to the user.
- Select **Allocation** to delete a selected allocation profile and jobs assigned to it.
- Select **Jobs** to delete jobs within a selected date range.

Back up the Job Accounting Database:

The Job Accounting database can be backed up using any of the following methods:

- In the HP AC configuration utility go to Job Accounting tile > Database Manager. Under Database menu, select Back up Database. Choose the directory or a UNC path to save the backup to.
- In a web browser, enter the following URL:
 - http://<servername>/HP_ACJA
 - In the Database Manager tab, under Database menu choose **Back up Database**. Choose the directory path or a UNC path to save the backup to.
- Back up the HP_ACJA database using standard SQL tools.

12.5 HP AC Job Accounting administration

Use the HP AC Job Accounting Administration page to add, delete, or modify HP AC Job Accounting functions and parameters. All administration operations are performed from this menu. HP AC Job Accounting administration is divided into two parts:

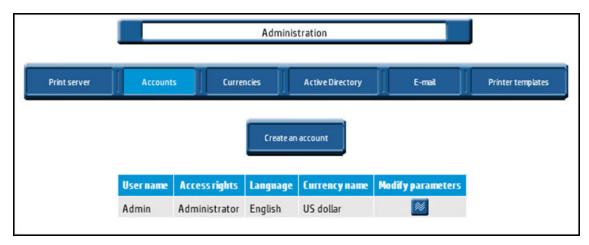
- The HP AC Job Accounting administrator assigns and configures individual accounts; including HP AC Job Accounting accounts, currencies used in the application, and email system.
- The HP AC Job Accounting administrator defines the costs and prices (such as printers and media), which will affect guery results.

NOTE: The Administration menu only appears in the HP AC Job Accounting remote control if you have Administrator rights.

Access the Administration screen by clicking **Administration** on the HP AC Job Accounting remote control:

12.5.1 Account options

This page provides information on the various accounts in the system, and allows the administrator to create new accounts or modify existing ones. To access the HP AC Job Accounting Accounts options, click **Accounts** on the Administration screen.



12.5.1.1 Create an account

- Click Create an account.
- 2. Enter a unique user name.
- 3. Enter your password and then confirm it by entering it again. For security reasons, passwords are masked.
 - NOTE: Passwords are case sensitive
- 4. Check the group you want the user to belong to:

User: Allocation Super

User: Quota Super

User: Administrator

5. Click the Go icon to validate the account, or the Cancel icon to reject it and stop the operation.

Figure 12-1 Go and Cancel icons



This account has the language and currency attached by default to the Admin account. For more information on changing the language and currency, see Section 12.10, HP AC Job Accounting user options.

12.5.1.2 Modify an account

Administrators can modify the password or the access rights attached to a user name. You may find this function useful when reinitializing an account password.

- NOTE: It is possible to modify only one account at a time.
 - To modify account information, click the Modify 🔝 icon.
 - To change the password, enter the password, and then enter the password again to confirm it.

- To grant or withdraw administration rights, check or uncheck the **Administrator** box.
- NOTE: The access rights of an Admin account cannot be changed.
- Click the Go [12] icon to accept the modification, or the Cancel [22] icon to reject it and stop the operation.

12.5.1.3 Delete an account

To delete an account, check the box corresponding to the user account you want to delete. Click the **Delete** icon. You will be asked to confirm the deletion before the account is removed.

TIP: You can delete several accounts in one operation.

12.5.2 Currencies

To view defined currencies, add a currency, or define a currency exchange rate, click Currencies on the Administration page.



This page lists all currencies defined in HP AC Job Accounting and provides their acronym. These currencies may be used in HP AC Job Accounting to display costs for elements such as printers, media, or jobs.

A currency will ultimately express a cost associated with a given printer. Each time a new cost is entered by an HP AC Job Accounting administrator, the default currency for this cost is the same as the currency associated with the current administrator. You can modify the currency, which is attached by default to each HP AC Job Accounting user and administrator in the User options. For more information, see Section 12.10, HP AC Job Accounting user options.

HP AC Job Accounting contains the following default currencies:

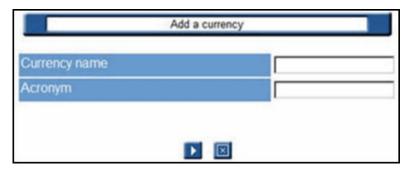
- US dollar
- European Euro
- British pound

NOTE: You may delete any currency, as long as it has not been used to express a cost.

12.5.2.1 Add a currency

Forms of currency are entered in **Add a currency**. To add a currency, complete the following steps:

From the Currencies page, click **Add a currency**.



- Specify the new currency name and acronym (Example: USD for a US dollar).
- Click the Go icon to add the currency, or the Cancel icon to stop the operation.

12.5.2.2 Define an exchange rate

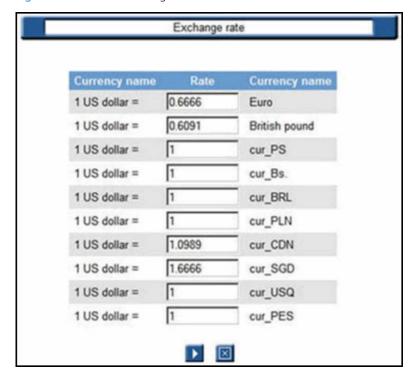
An exchange rate must be associated with each currency. All exchange rates are set to "0" by default.

NOTE: You must define an exchange rate for the new currency, or all costs expressed in the new currency will be incorrect.

Use the following steps to define an exchange rate:

- On the Currencies page, check the box beside a currency to select it.
- Click **Define an exchange rate**.

Figure 12-2 Define exchange rate



- Enter the exchange rate for the currency.
- Click the Go [12] icon to accept the defined exchange rate, or the Cancel [27] icon to stop the operation.

12.5.3 Delete an exchange rate

To delete an exchange rate, complete the following steps:

- On the Currencies page, check the box beside a currency to select it.
- 2. Click **Define an exchange rate**.
- 3. Enter **0** in the field beside the currency, for the exchange rate you want to delete.

12.5.4 Modify a currency

To modify a currency name or acronym, complete the following steps:

NOTE: You can modify only one currency at a time. On the Currencies page, check the box beside a currency to select it.

Click the Modify icon to access Modify a currency screen. 1.

Figure 12-3 Modify a currency



- Enter a **New currency** name or **New local name** in the designated fields.
- Click the Go icon to save the modifications, or the Cancel icon to stop the operation.
- NOTE: You do not have to redefine the exchange rate for a modified currency.

12.5.5 Delete a currency

Use the following steps to delete a currency:

On the Currencies page, check the box beside a currency to select it.

Click Delete 🔀 2.



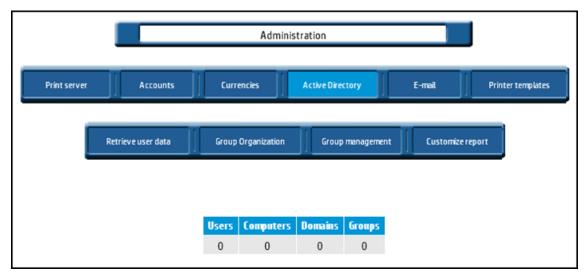
- Click the Go icon to delete the currency, or the Cancel icon to stop the operation.
 - You can delete several currencies at a time.
 - NOTE: The exchange rates attached to a deleted currency are automatically deleted.

12.5.6 Active Directory

Information regarding users, groups, domains, and computers is collected the first time a user is detected in the database. If no network scan has been performed, only the users printing with the HP AC Job Accounting print server will be stored in the database. After a network scan has been launched, the information pertaining to users, groups, domains, and computers is stored in the database.

On the Active Directory screen, the administrator can create new HP AC Job Accounting groups, which are processed like standard network groups. If a user belongs to several groups, assign the user to a group and obtain user information through various gueries.

To access the Active Directory options, click **Active Directory** on the Administration page.



The Active Directory displays the total number of users, computers, domains, and groups that are currently tracked. These numbers will change according to the data detected on your network. The data is refreshed once every 30 seconds.

From Active Directory, the administrator can perform the following tasks:

- Click **Retrieve user data** to launch the search.
- Click **Group organization** to add, delete, or organize groups.
- Click **Group management** to manage groups and user assignments to groups, to charge them based on printing activity.
- Click **Customize report** to add and define columns in your queries. The summary report is not affected.

HP AC Job Accounting allows you to retrieve and use data regarding individual print system users. This data, also called Active Directory in the Windows system (ADSI), reports the user's group and domain, if any. Data such as the user's first and last name, the name and operating system of the machine, and the user's declaration in the system are also given based on information previously entered by an administrator.

This user data enables accurate monitoring of print costs over a network. Individual users are charged for printing costs, rather than costs associated with a particular workstation. For companies with a large user base. individual accounts should be placed in different groups or domains, depending on the internal organization. User queries can be launched by specifying a Windows domain, limiting the scope of your query. Using this method produces faster, more precise results.



NOTE: Active Directory only supports Domain Controller on Windows 2000, 2003, and 2008. pDC on Windows NT 4.0 is not supported.

You can add this data to your HP AC Job Accounting database using automatic or manual retrieval. To enable automatic database updates you should have the necessary network permissions, which can only be applied by the network administrator. These rights should be registered before any printing or manual data retrieval.

12.5.7 Retrieving user data

User data can also be manually retrieved by the HP AC Job Accounting administrator.

Click **Retrieve user data** to launch this operation.

Figure 12-4 Retrieve user data



Choose a specific **Affected domain** to scan.

You can also specify the login and password of an HP AC Job Accounting administrator for the defined domain of your print system. For security purposes, the password is encrypted and not visible.

NOTE:

- Passwords are case-sensitive.
- HP AC Job Accounting uses this identification to research users on the network. The user performing the scan must have administrator rights in each affected domain—be aware of any firewalls that may block the scan.
- If no login or password is entered, HP AC Job Accounting verifies the network authorizations of the machine from which the search was initiated.
- Limit the scope of information scanned by choosing **Computer** or **Group** in the options list of the Scan type field.

The Computer option allows the retrieval of various computers and users. The Group option allows retrieval of various groups, as well as all attached users. Complete scan retrieves all information related to your domain by taking into account all levels of your system. This last option is selected by default.

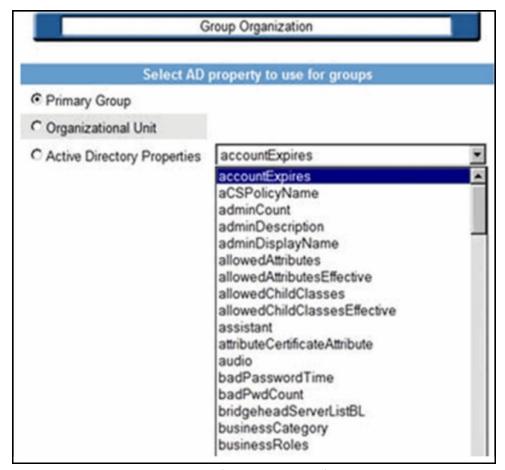
Click the Go icon to accept the process, or the Cancel icon to stop the operation.

NOTE: This operation must be performed for each domain of the print system. Each new user or group in any domain is automatically added to the HP AC Job Accounting database. All lists and drop-down menus that summarize end users, machines, groups, and domains existing in the NT system are automatically created and updated in the HP AC Job Accounting interface, if the user has printed. For more information on these parameters, see Section 12.11.3, Parameterize gueries.

12.5.8 Group Organization

Group Organization defines which Active Directory property to use to query group activity and costs for each user. The three options for organization are Primary Group, Organizational Unit, or Active Directory Properties.

Figure 12-5 Group Organization



Primary Group and Organizational Unit (default OU is Users) are the standard Active Directory properties.

Active Directory Properties allow for the selection of available AD properties; or a property can be specified by entering a valid AD property as text. If the option is configured on the HP AC Job Accounting Server, and security has been configured to disable Anonymous access on the HP AC Job Accounting web site in the IIS console, a list of AD properties populates a drop-down list. Otherwise, only an input field displays and the property must be supplied as text input.



NOTE: A complete network scan must be launched to update the database if Organizational Unit or Active **Directory Properties** is selected.

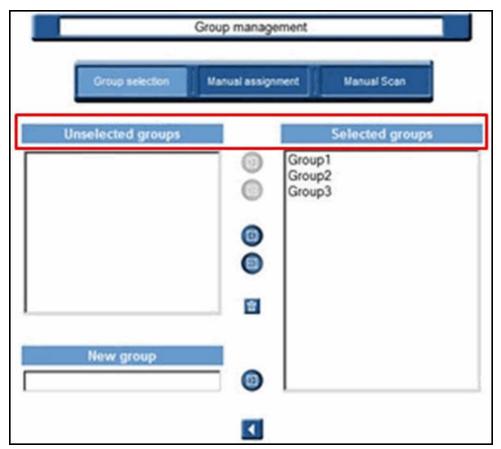
12.5.9 Group management

Group management defines how print jobs are allocated to the groups of your network, which affects the result of some queries and modifies the printing cost charges per group user.

A single user may belong to several groups. For example, a user can belong to the Development group, the Accounting group, and the Management group. The user can be attached to one specific group or several, if desired. Each user could be assigned to a favorite group. In this manner, all printing activity related to a user is counted only once, and not twice or three times, as is the case when the user belongs to several groups. To set up this feature you will first need to choose a domain. Use the following steps to manage groups:

- Click **Group management** on the "Active Directory" page. 1.
- 2. Choose a Domain.
- Click the Go icon to continue to the Group selection menu: 3.

Figure 12-6 Group selection

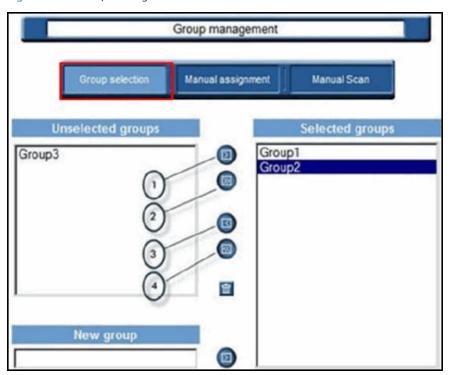


12.5.10 Group management functions

The **Group selection** window displays all the groups that have been automatically detected by HP AC Job Accounting, and new groups that have been created manually. These new groups appear highlighted in light blue.

Use icons to manage groups:

Figure 12-7 Group management icons



¹ The right-arrow icon moves a group from the **Unselected groups** field to the **Selected groups** field. You also can select many groups by holding the Ctrl key while making selections.

The Delete icon is used to delete the manually created groups.

To remove any automatically-detected groups that are unnecessary, select them and click the left-arrow icon. They are added to the **Unselected groups** field. This action allows them to be retrieved later if needed.

The **New group** field allows the creation of custom groups. Enter the name of the new group and add it to the **Selected groups** window by clicking the right-arrow icon. The new group is highlighted in light blue.

Following are the rules of selection:

- By default, all groups are selected (they appear in the "Selected groups" window).
- You can create and delete groups you have created manually.
- You cannot delete groups detected by the system as active (Active Directory).
- If you delete a group with users still attached, they are moved to the unspecified group.

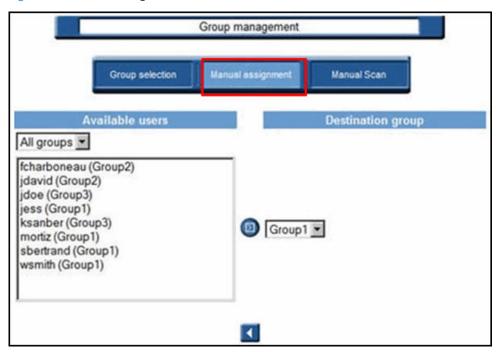
² This icon moves all groups from **Unselected groups** to **Selected groups**.

³ The left-arrow icon moves a group from the **Selected groups** field to the **Unselected groups** field. You also can select many groups by holding the Ctrl key while making selections.

⁴ This icon moves all groups from **Selected groups** field to the **Unselected groups**.

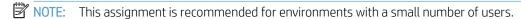
To assign users manually, click Manual assignment in "Group management":

Figure 12-8 Manual assignment



A list of users is displayed. You can only reveal the users of one particular group at a time, but it is possible to see all users of all groups. In this case, the current assigned group is indicated between brackets for each user.

You can choose a new destination group for each user. Select one or many users, and then select a new destination group and click the right-arrow icon to assign the selected users to this new group. As a result of selecting a specific group, a query is launched including the users who have just been assigned.

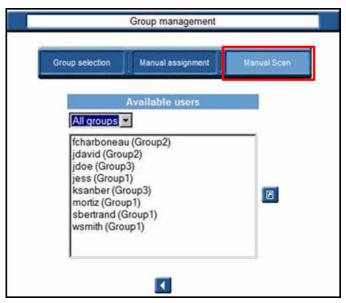


12.5.11 Manual Scan

On large networks, performing scans for new users can be a time-consuming process. After adding a new user or making a change to an existing user, the **Manual Scan** option can guickly update the system.

1. Click **Manual Scan** on the "Group management" page:

Figure 12-9 Manual scan



To limit the list size, use the drop-down menu to confine the results to specific network groups. Use the following steps to perform a "Manual scan":

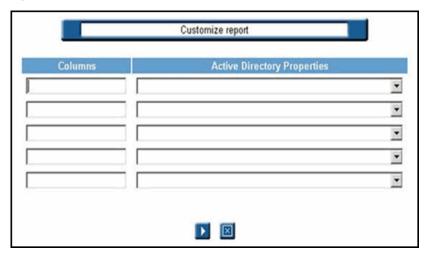
- 2. Select the new user from the list.
- Click the Update [87] icon to update the selected user.

12.5.12 Customize reports

Use the Customize Report function to add data from any Active Directory field in a column within a usergenerated report. Only gueries reporting the user name see the additional columns.

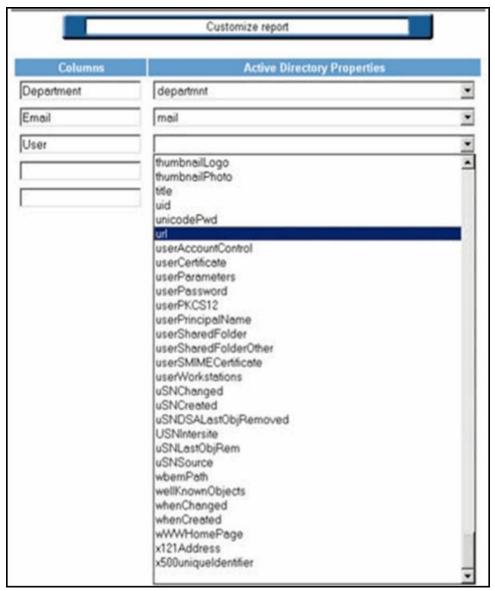
Click **Customize report** on the "Active Directory" page to add and define new columns in your report.

Figure 12-10 Customize report



- Define up to five columns:
 - a. Enter the column name in the **Column** field.
 - b. Select from the Active Directory Properties drop-down list to define the column. If the drop-down list can be populated, an input field displays (see Section 12.5.8, Group Organization for more details.

Figure 12-11 Customize report columns option



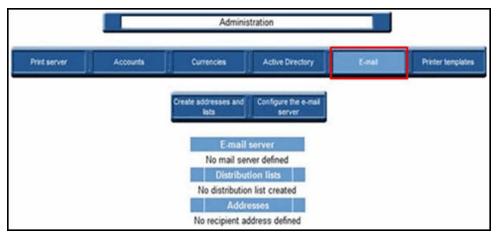
NOTE: See Section 12.11.4.7, Modify display parameters to display additional columns in the report.

12.5.13 Email

The email system defines both individual email addresses and distribution lists. The system provides all HP AC Job Accounting users and administrators with a choice of email recipients. An email server should also be configured to send guery results using email (a proxy server and the SNMP port associated).

To create addresses and lists and configure the email server, click **Email** on the Administration page.

Figure 12-12 Email configuration



The HP AC Job Accounting email system enables HP AC Job Accounting users to send query results using electronic mail as the delivery mechanism.

Email data (addresses, lists and server), if already defined, appears on the screen. The SMTP address of the email server is displayed. You can create the addresses and distribution lists using the task bar at the top of the page.



NOTE: Query results can only be sent in Comma-Separated Value (CSV) format.

To send your query results using email you must have all of the following:

- A properly configured email server.
 - ⚠ CAUTION: To configure an email server you need some parameters that may be confidential. Only your network administrator may have access to this information.
- A sender. The sender's address can be defined in the User options. This operation is mandatory. Any HP AC Job Accounting user or administrator can define their address. For more information on this operation, see Section 12.10, HP AC Job Accounting user options.
- Recipients for query results. For more information on this operation, see Section 12.12, Query results.



NOTE: No verification is performed on email addresses (such as access, validity, or entry). These addresses will only be used when results are sent. Contact your system administrator to confirm that email messages have been sent and received. If an error occurs, you will have to correct the HP AC Job Accounting addresses.

HP AC Job Accounting contains an address book, which consists of recipient addresses and recipient lists. You should first define individual addresses, and then create lists with these addresses.

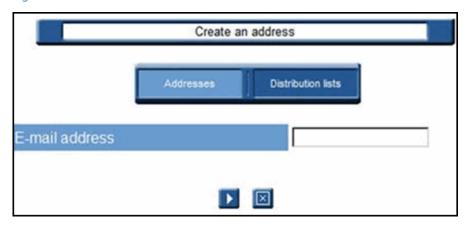
12.5.14 Create an email address.

This operation is not mandatory. Email addresses can be defined when launching a query. For more information, see Section 12.11.3, Parameterize queries.

Use the following steps to create an email address:

From the Email screen, click Create an address.

Figure 12-13 Create an address



- Enter the email address in the usual format: xxxxxx@xxxxxxxxx
- Click the Go [12] icon to accept the address, or the Cancel [22] icon to reject it and stop the operation.
- NOTE: All fields can contain up to 127 characters, symbols, and figures.

12.5.15 Modify an email address

Use the following steps to modify an existing address:

- On the Email page, select the email address you want to modify.
- 2. Click the Modify parameters **m** icon to display the **Modify an address** page.

Figure 12-14 Modify an address



Click the Go [] icon to accept the modifications, or the Cancel [] icon to reject it and stop the operation.

12.5.16 Delete an email address

To delete an email address, complete the following steps:

Select the address you want to delete in the Addresses section.

Click the Delete X icon.

NOTE: To avoid an error, confirm that you want to delete the address.

Figure 12-15 Confirm deleted address



Click the Go icon to accept the address deletion, or the Cancel icon to reject it and stop the operation.

⚠ CAUTION: This operation cannot be canceled after it has been accepted.

12.5.17 Distribution lists

A distribution list consists of several email addresses grouped together. You can create a list of addresses, and assign a name to the list. Then to send an email to all addresses contained in the list, you just need to enter the assigned name of this list.

NOTE: This operation is not mandatory. Email addresses can be defined while launching individual queries. For more information, see Section 12.11.3, Parameterize queries.

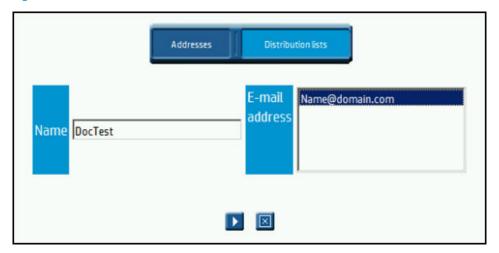
12.5.17.1 Create a distribution list

To create an email distribution list, complete the following steps:

From the Email page, click **Create addresses from lists**.

At the top of the screen, click **Distribution lists**.

Figure 12-16 Create distribution list



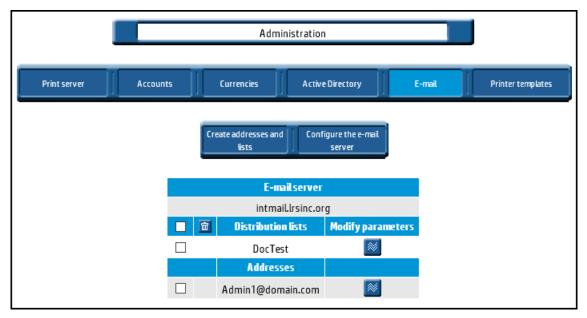
- Enter a name for the list in the Name field. All existing individual email addresses appear in the Email address field.
- You can enter up to 127 characters, symbols, and figures.
- To create a list, select an email address. To select more than one address, hold down the Ctrl and Shift keys while selecting.
- Click the Go icon to accept the list creation, or the Cancel icon to reject it and stop the operation.

12.5.17.2 Modify a list

To modify a Distribution list, complete the following steps:

Check the box to select the Distribution list you want to modify.

Figure 12-17 Modify Distribution list



Check Modify parameters **t**o open the **Modify a list** page.

Figure 12-18 Modify distribution list content



- TIP: You can modify the content of one or several fields by clicking on each field, and then entering the relevant information.
- Click the Go icon to accept the distribution list modifications, or the Cancel icon to stop the operation.

12.5.17.3 Delete a list

To delete a list, complete the following steps:

- Click to select the box next to the Distribution list you wish to delete.
- Click the Delete icon in the column heading(s).

Figure 12-19 Verify distribution list deletion



Click the Go icon to accept the list deletion, or the Cancel icon to stop the operation.

⚠ CAUTION: This operation cannot be canceled after it has been accepted.

12.5.18 Configuring the email server

When setting up your email server, you must configure the outgoing SMTP mail and the port.

⚠ CAUTION: This information may only be known by the network administrator.



NOTE: You can only create one server configuration.

If the email server configuration has been defined, it will appear on your screen with its SMTP outgoing mail and port number. You will be able to create, modify, and delete your server configuration by using the task bar at the top of the page.

12.5.18.1 Configure the server

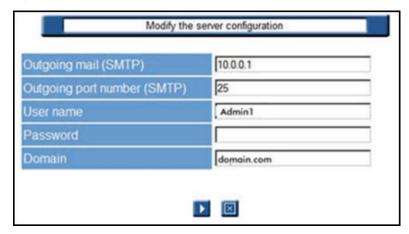
To configure the server, complete the following steps:

Click **Configure the email server**.

At Modify the server configuration,

- Enter the **Outgoing mail (SMTP)** information. a.
- Enter the Outgoing port number (SMTP). b.
- Enter the User name and Password. This user name and password allows you to validate access to the email server.
- If a Domain is required, enter the **NETBIOS Domain** name. d.

Figure 12-20 Modify server configuration



Click the Go icon to accept the configuration, or the Cancel icon to stop the operation.

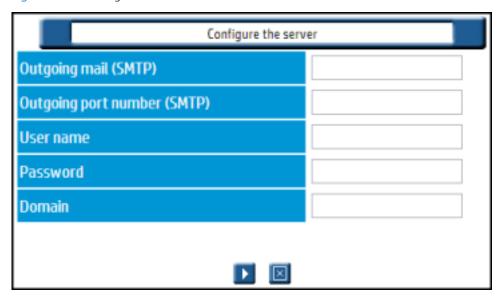


12.5.18.2 Modify the server configuration

NOTE: All configuration fields can contain up to 127 characters, symbols, and figures.

Click Configure the email server.

Figure 12-21 Configure email server



- On the Configuration screen, modify the content of one or several fields by selecting each field to enter the relevant information.
- Click the Go licon to accept the configuration, or the Cancel licon stop the operation.

12.5.18.3 Delete the server configuration

To delete the server configuration, complete the following steps:

- Click Configure the server. 1.
- 2. On the **Modify the server configuration** screen, delete the information entered in the fields.
- 3. Click the Go [12] icon to accept the configuration, or the Cancel [22] icon stop the operation.

<u>ACAUTION:</u> This operation cannot be canceled after it has been accepted.

12.5.19 Printer templates

With HP AC Job Accounting printer templates, you can define the costs associated with each model of printer and then apply that template to any printers declared on the HP AC Job Accounting print server. Printer costs can be managed and updated from one centralized interface.

HP AC Job Accounting allows you to define custom printer templates. A printer template contains various values related by default to a specific object type. For instance, a template for the HP LaserJet 9050 printer would contain all prices and costs associated with that printer, such as printer price, toner price, total number of printed pages, depreciation period, leasing cost, and maintenance cost.

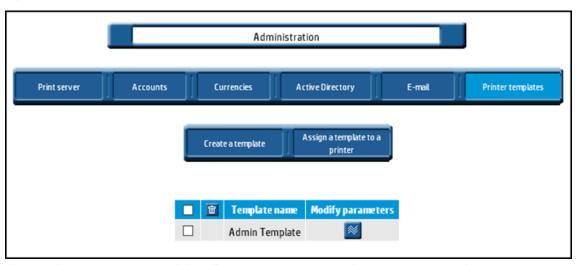
For more information on actual costs, see Section 12.8, Manage print costs.

A template can be allocated to one or several printers. These printers will automatically inherit the values associated with this template as actual costs. You can manage your actual costs by clicking **Page cost** management in the HP AC Job Accounting remote control.

Any printer tracked by HP AC Job Accounting can be associated as the default, with a set of predefined prices and costs that are used when you launch cost gueries.

To create a template, assign a template to a printer, modify a template, or delete a template, click **Printer** templates on the Administration page.

Figure 12-22 Printer template selections



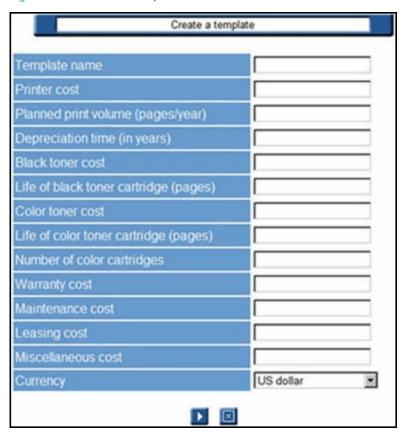
The templates management task bar allows you to create a template or assign a template to a printer.

12.5.19.1 Create a printer template

To create a printer template, complete the following steps:

To begin template creation, click **Create a template** from the Printer templates page.

Figure 12-23 Create a template



- Enter the template name.
- NOTE: This is a required field.
- 3. Enter the costs in fields provided, as desired.
- NOTE: Use a decimal point in costs (such as 20.00) and years as the unit of time.
- Use the drop-down list in the **Currency** field to define the currency for your costs. 4.
- Click the Go icon to accept the data, or the Cancel icon to stop the operation. 5.
 - NOTE: You must provide information in the **Template name** field.

12.5.19.2 Assign a printer template

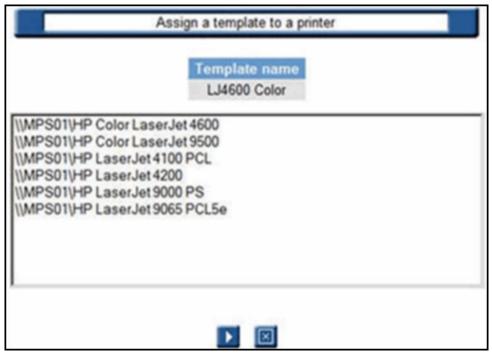
A single template can be assigned to a single printer or to several printers. However, the opposite is not true; several templates cannot be assigned to one printer.

To assign a template to a printer:

Select a template to assign.

Click Assign a template to a printer.

Figure 12-24 Assign a template



This page lists all printers tracked by HP AC Job Accounting on your print network. Each line in this list represents a printer in this format:

\\print server\printer.

The template name appears at the top of the page.

- 3. To assign the template, select a printer. To select multiple printers, use the Ctrl and Shift keys on your keyboard.
- 4. Click the Go icon to accept the assignment, or the Cancel icon to stop the operation.

12.5.19.3 Modify a printer template

You can modify all costs defined in your printer template. You cannot modify the template name. You can only modify one template at a time.

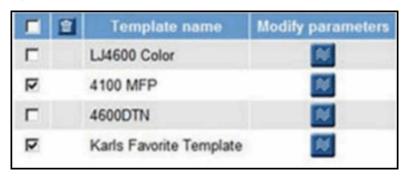
- 1. Select the template to modify.
- 2. Click the Modify **[28]** icon.
- 3. Modify your data as desired.
- 4. Click the Go icon to accept the modifications, or the Cancel icon to stop the operation.
- NOTE: If you entered a new printer price, it will dynamically appear in the printer costs. Any modification to a printer template will change the actual costs of this printer. HP AC Job Accounting will automatically re-calculate costs.

12.5.19.4 Delete a template

To delete a template, complete the following steps:

From the template management screen, select the template to delete.

Figure 12-25 Select templates to delete



Click the Delete icon in the title bar of the list. The template appears on your screen.

Figure 12-26 Verify template selection



Click the Go [10] icon to accept the modifications, or the Cancel [10] icon to stop the operation.

CAUTION: This operation cannot be canceled after it has been accepted.

12.6 Configuring data collectors

12.6.1 HP Access Control (HP AC) Agent

The HP Access Control (HP AC) Agent allows you to capture data directly from a network printer, and functions even if the HP AC Job Accounting print server direct tracking module is not installed.

12.6.2 HP Statistics

HP Statistics is a method of capturing data directly from an HP FutureSmart printer.

NOTE: All HP FutureSmart device administrator user names and passwords must match the Device administrator user name and password in the HP Access Control (HP AC) tool. Go to the **Settings** tile > **Device** tab of the HP Access Control (HP AC) tool to enter the Device administrator user name and password.

To select what device information you want to display in HP AC Job Accounting reports, go to the **Settings** tile > **Device** tab.

- Select **Device name** to display the device names in job accounting reports.
- Select **Network name** to display the host names of devices in job accounting reports. Make sure the **Get** community name is entered in the SNMP section to be able to read the network/host names of devices. Click Apply.

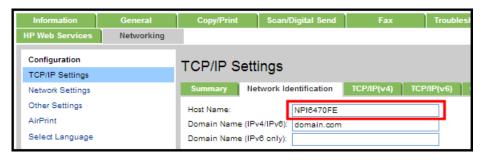
To configure an HP FutureSmart device for tracking, complete the following steps:

- 1. Go to the **Devices** tile.
- Select the HP FutureSmart device from the device list, then click **Configure**. 2.
- 3. Select Tracking. Click OK. An X displays under the Tracking column, indicating the HP FutureSmart device is configured for tracking.

When multiple FutureSmart devices of the same model have the same device name, only one device is reported in Job Accounting. Therefore, devices of the same model must have unique device names for correct tracking. To change the device's name to be the device's host name, complete the following steps:

Go to the Networking > TCP/IP Settings > Network Identification page of the device EWS to determine the Host Name of the device.

Figure 12-27 Device Host Name



Go to the General > Device Information page. In the Device Name field, enter the device's Host Name. Click Apply.

Figure 12-28 Device Name



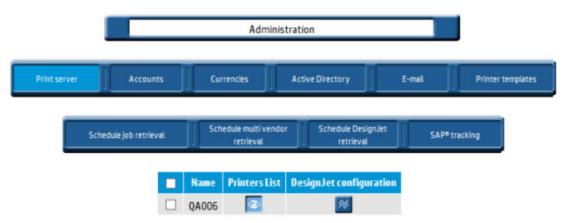
After jobs are tracked and the XML files are processed, you will see all your devices listed in Job Accounting. After the XML files are processed, you will see all your devices listed in Job Accounting.

12.6.3 HP Access Control (HP AC) Job Accounting print server

This portion of the Administration Module allows you to view the status of HP AC Job Accounting print server printers, as well as schedule job retrievals for printers configured as tracked printers on a print server, and DesignJet.

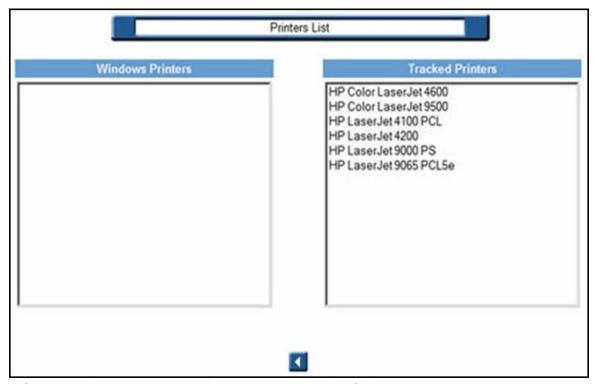
To view a list of both Windows printers and HP AC Job Accounting printers for the selected HP AC Job Accounting print server, from the Printers List column, click View.

Figure 12-29 Administration / Print server status



The Printers List screen shows the list of installed Windows printers.

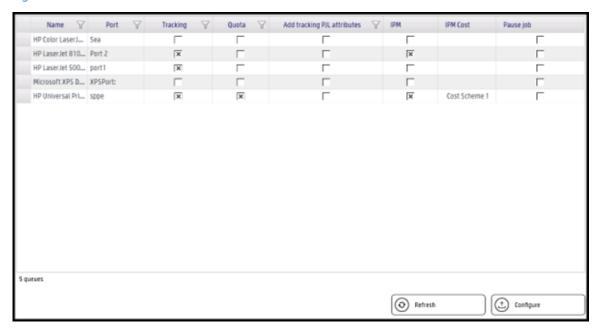
Figure 12-30 Printers list



Before HP AC Job Accounting can track a printer, it must be identified by the Print Server tile.

Go to the **Print Server** tile.

Figure 12-31 Print server tile

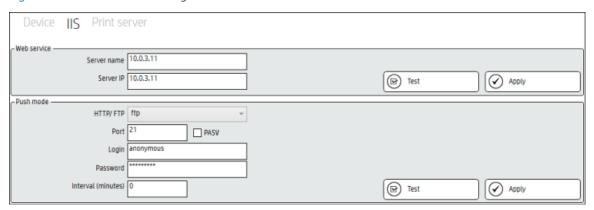


- 2. Select a printer from the printer list, then click **Configure**.
- 3. In the Configure window, select the features you want to configure:
 - Click **Tracking** enable tracking of print jobs sent to the selected print queue. The print queue tracking method can be either Port Monitor or Print Processor, depending on what is selected in the **Settings** tile > Print Server tab.
 - Click **Quota** to enable the enforcement of Job Accounting quotas for printing.
 - Click **IPM** to apply IPM rules and costs to the printer. See Intelligent Print Management.
 - Click Add tracking PJL attributes to insert Job Accounting PJL attributes in the data stream. If an application generates a data stream that does not include the PJL header containing the user and job information, the user and job name are reported as UNSPECIFIED in Job Accounting reports.
 - Click **Pause job** to automatically pause print jobs in the print queue. Print jobs must be manually resumed by an administrator. Pause job is only available when Port Monitor is selected in the Settings tile > Print server tab. The Windows service HP ACJA Spool Monitor must be started. Go to **Administrative Tools** > **Services** to start the HP ACJA Spool Monitor service. Click **OK**.

If you installed and are running HP Access Control (HP AC) Configuration Utility on a remote print server, you will have the following options to configure printers:

- From the print server, open **HP AC Configuration Utility** and go to the **Settings** tile. 1.
- 2. Click to open the **IIS** tab.

Figure 12-32 Print server settings

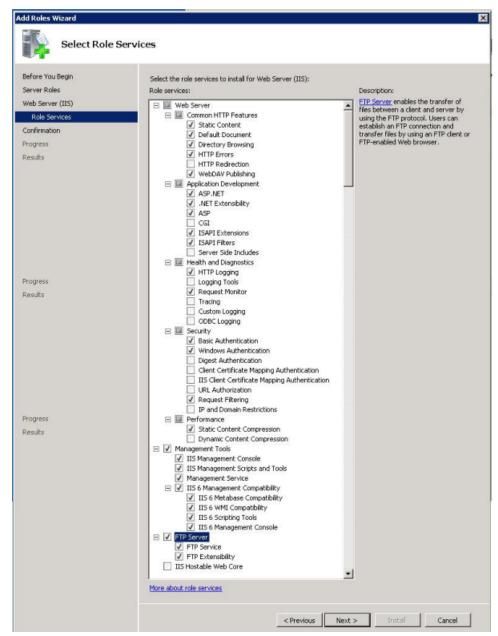


If desired, printer data can be auto-loaded (pushed) to the HP AC Job Accounting server through one of these transfer protocols: FTP, HTTP, or HTTPS.

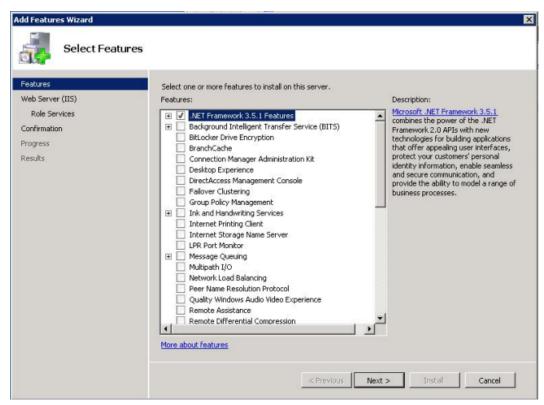
- File Transfer Protocol (FTP) is a standard for transferring files between computers with different operating systems. FTP is best for uploading data to an internal database server.
- Hypertext Transfer Protocol (HTTP) differs from FTP, since connections are usually terminated after a particular request (or series of requests) has been completed. HTTP is the preferred method of data transfer if your database server is located off-site, or beyond your firewall.

Additional settings include Server Name, which Server Port to use when transferring the data, server Login name, Password, and an Initial Folder in which to store the uploaded data.

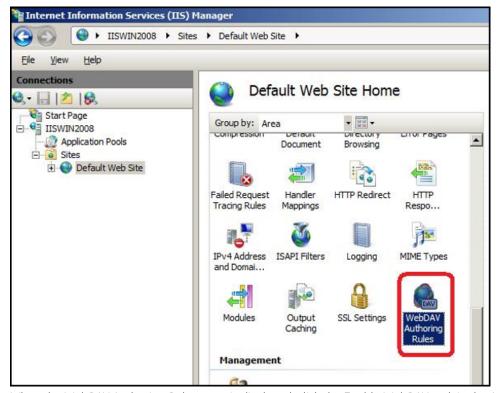
IMPORTANT: In order for the push mode settings to work properly on Windows Server 2008, WebDAV must be enabled on the server. This allows tracking data to be sent to Job Accounting. Add the Web Server (IIS) role to your server and select all the IIS components showed in the image below. The WebDAV Publishing component is not included on IIS 7 and needs to be installed separately as an additional IIS 7 component on your 2008 server. The FTP Server component has to be installed only if you are planning to push the XML or IPA files via FTP. If you are planning to push the files via HTTP, the FTP Server is not necessary.



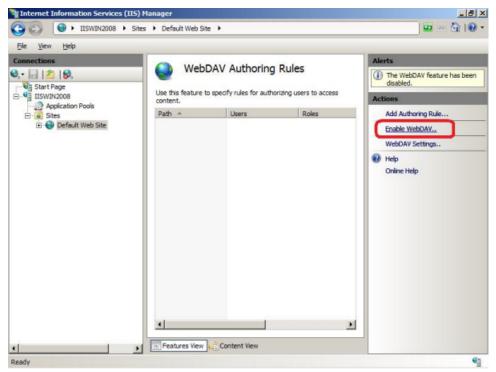
Then enable Microsoft .NET Framework 3.5 Features.



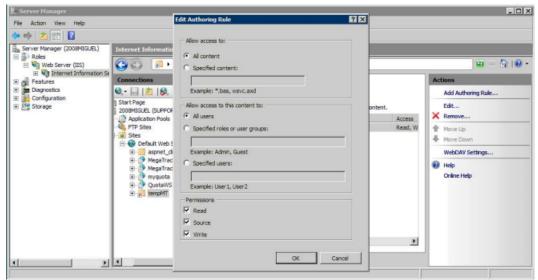
If you are planning to use HTTP, you need to enable the WebDAV component. In IIS Manager, in the Connections pane, expand the Sites node in the tree, then click the Default Web Site. As shown in the image below, doubleclick the WebDAV Authoring Rules feature.



When the WebDAV Authoring Rules page is displayed, click the Enable WebDAV task in the Actions page.

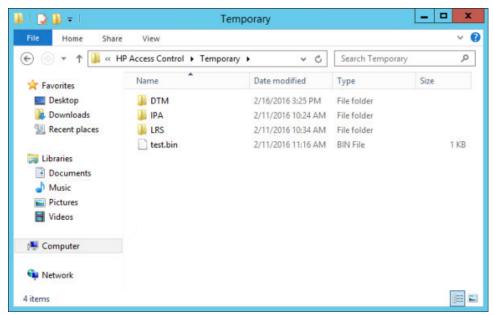


Once in the WebDAV Authoring Rules section, click **Add Authoring Rule...** (from the Actions menu on the right). From Add Authoring Rule, select All users, and for Permissions select read, source, write. Click OK.



TIP: To validate that a device is pushing files correctly, navigate to the folder in the directory where HP Access Control (HP AC) is installed, and locate the Temporary folder for FTP push and Temporary DTM for HTTP push. The Temporary folder should contain a set of folders for each device that has successfully pushed a tracking file (.xml) to HP AC Job Accounting. The folders are identified by the device IP address. The following figure shows the default installation directory Program Files\HP\HP AC\Temporary.

Figure 12-33 Device folder



FTP mode pushes files in ..\HP AC\Temporary\x.x.x.x folder, where x.x.x.x is the printer IP address.

HTTP and HTTPS modes push files in ..\HP AC\Temporary\DTM folder. The file name starts with the printer IP address.

- TIP: The push interval can be set to 0 for real-time push.
 - Click the **Snmp** tab. The default SNMP setting is "public" for Set and Get. If values are changed on the devices, all devices must have the same value or no value (public).

The default Trap level is Printer Confirmation traps. In the default mode, only printed job traps are sent. This is used to reduce the network traffic with unwanted traps. Some versions of HP JetDirect require that All traps mode is selected.

Click **Save** to save the new configuration information.

12.6.4 DesignJet configuration

NOTE: This section applies only to DesignJet printers with built-in Job Accounting.

Some DesignJet models such as the 4000, 4500, Z610, and T1100PS have a built-in tracking function which allows HP AC Job Accounting to parse the XML accounting file. To enable this feature, the DesignJet must be installed and configured locally on an HP AC Job Accounting print server, allowing HP AC Job Accounting to retrieve the IP address and the gueue name.

Configure networked DesignJet printers by clicking the Modify 🎆 icon in the DesignJet configuration column on the HP AC Job Accounting print server Administration screen.

Figure 12-34 DesignJet configuration



To start tracking a DesignJet printer, simply select the DesignJet from the list on the left and click the right arrow between the columns:

Figure 12-35 Add or remove DesignJet printers



To stop tracking a DesignJet printer, select it from the right list and click the left arrow between the columns.

12.6.5 Schedule job retrieval

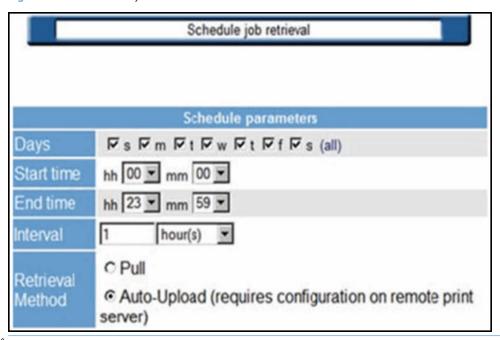
The HP AC Job Accounting administrator can use the Schedule job retrieval function to determine precisely when, how frequently, and by what method (pull or push) HP AC Job Accounting retrieves job data.



NOTE: For large networks, it is recommended that job retrieval be performed outside of regular business hours.

To access the schedule parameters, click **Schedule job retrieval** on the HP AC Job Accounting print server Administration page.

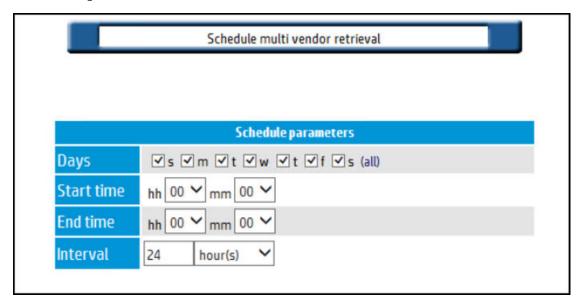
Figure 12-36 Schedule job retrieval



NOTE: If Auto-Upload is selected, the interval may be set to 0 for real-time processing.

12.6.6 Schedule multi-vendor retrieval

In order to track data at multi-vendor devices, the devices must be configured for Tracking from the Devices tile. Tracking data is retrieved and processed to Job Accounting when the mytracking.exe file (located in the \HP Access Control\bin folder) is run as an administrator. To schedule retrieval of multi-vendor tracking data, go to Job Accounting > Administration > Multivendor Job Scheduler.

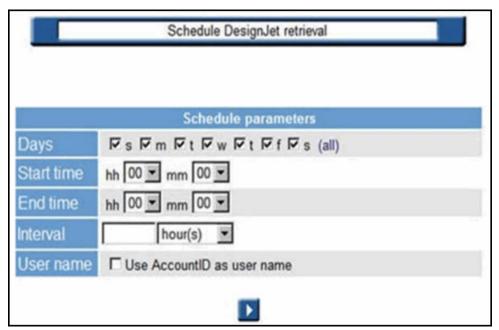


12.6.7 Schedule DesignJet retrieval

DesignJet retrieval can be scheduled to occur at a designated start time on one or more days of the week, or regularly at a specific time interval.

To access the schedule parameters, click Schedule DesignJet retrieval on the HP AC Job Accounting print server Administration page.

Figure 12-37 Schedule DesignJet retrieval



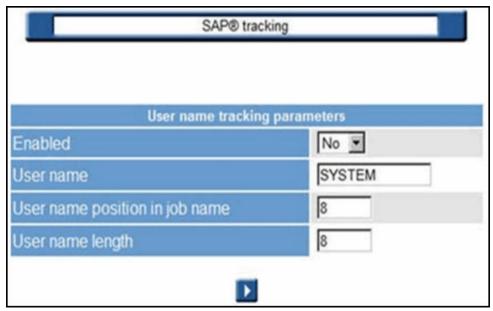
If Account ID is enabled in the driver, HP AC Job Accounting can report the account ID as the User name. By default, the login name is reported.

12.6.8 SAP tracking

SAP must be configured to report the user name in the job name (consult SAP for more details on how to configure SAP queues).

To access the SAP user name tracking parameters, click **SAP tracking** on the HP AC Job Accounting print server Administration page.

Figure 12-38 SAP tracking



If Yes is selected from the Enabled drop-down list, HP AC Job Accounting will search for the user name in the job name for all jobs printed by the SAP user name that is defined (the default user name is SYSTEM).

HP AC Job Accounting will extract the user name at the selection position and extract only the number of characters selected.

If default parameters are used for all jobs printed by the user SYSTEM, HP AC Job Accounting extracts 8 characters from the job name, starting at position "8" — and uses this as the user name for the job.

Example: If the job name is "Job_abc_USER1234_xyz" and is printed by user SYSTEM, HP AC Job Accounting will report this job printed by user USER1234.

12.6.9 Direct Tracking Module (DTM)

The Direct Tracking Module (DTM) is another method of capturing data directly from a network printer and functions even if the HP AC Job Accounting print server module is not installed.

In order for the DTM to work, ALL of the following conditions MUST be met:

- Printer must be manufactured by HP.
- JetDirect should be installed and connected directly to the network (not locally through USB or LPT1).
- Correct/current printer drivers with Job Accounting information must be installed.
- Printer must be capable of sending a trap.

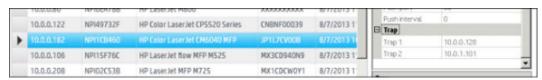


NOTE: A trap is a packet of information provided by the printer that indicates basic job information and print job status.

In the Devices tile, select a device from the device list, then click **Configure**. In the Configure window, select Confirmation trap. Click OK.

When the selected printer receives a job, corresponding trap information appears in the **Trap** section on the right.

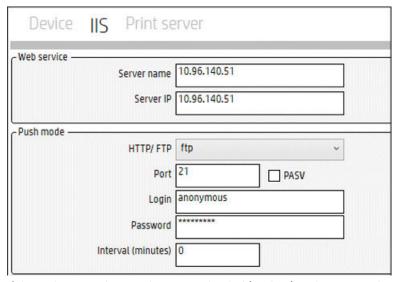
Figure 12-39 DTM Trap



12.6.9.1 DTM options

To configure the DTM from a DTM server that is not on the same server as the HP AC Job Accounting server, open the HP Access Control (HP AC) Configuration Utility and go the **Settings** tile > **IIS** tab.

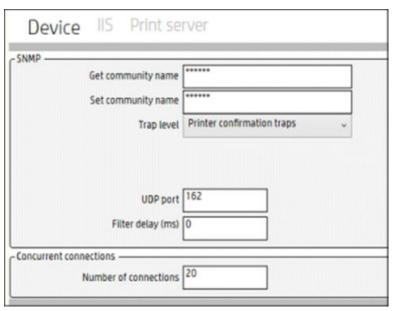
Figure 12-40 DTM options



If desired, printer data can be auto-uploaded (pushed) to the HP AC Job Accounting database server (DS) through one of three transfer protocols: FTP, HTTP, or HTTPS. Push features are enabled only if the DTM server is not installed on the HP AC Job Accounting database server.

The Device tab provides additional options to configure DTM.

Figure 12-41 Snmp options



The default setting is "public" for Set and Get. If values are changed on the devices, all devices must have the same value for Set and Get, or no value (public).

The default Trap level is **Printer Confirmation** traps. In the default mode, only printed job traps are sent. This is used to reduce the network traffic with unwanted traps. Some versions of HP JetDirect require that "All traps" mode is selected.

The trap service is using the default 162 UDP port. If the port is used by another application or service on the same server, HP AC Job Accounting Trap service can use another port. If the port is changed, the HP AC Job Accounting Trap service (HPACJA_SnmpTrap) needs to be stopped and restarted and the printer reconfigured using the new port.

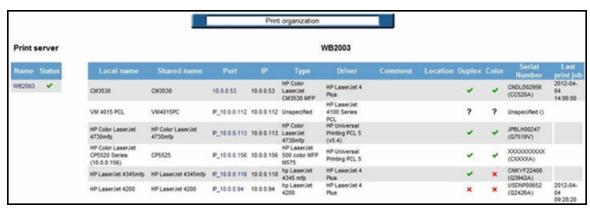
The Filter Delay is used if JetDirect sends the same trap multiple times in a very short interval. This occurs on external JetDirect 300x and 500x. The delay value can be set to 50 ms for 300x and 500x. For others devices, the default value can remain at 0.

12.7 Viewing the print server

This HP AC Job Accounting function allows you to view the organization of your print system—all HP AC Job Accounting print server and all printers linked to each HP AC Job Accounting print server tracked by HP AC Job Accounting. This module also automatically corrects print job errors and only tracks actual output.

Click **Print organization** in the HP AC Job Accounting remote control panel:

Figure 12-42 Print organization



This page is divided into two parts:

The left lists all print servers. Click the printer name in this column will display all individual printers connected to that server on the right.

On the right are all printers managed by the print server selected on the left. If you click on another print server, the printer list and the server name on the right will dynamically change.

The following icons may appear on this page:

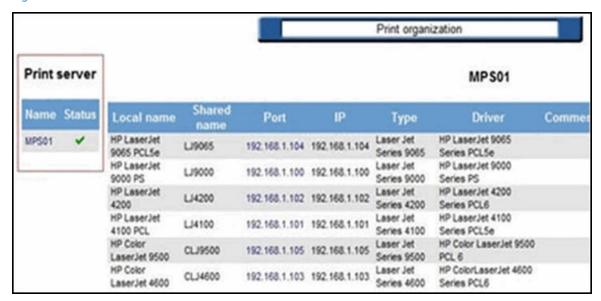
- when displayed in the Status column, this indicates the HP AC Job Accounting print server is currently running. The Duplex or Color columns show if the printer is capable of duplex or color printing.
- The Status column shows that the HP AC Job Accounting print server is not installed; and is also used to indicate simplex or black and white printers.
- Indicates that the HP AC Job Accounting is unable to determine the printer's duplex or color capabilities, and should be manually configured by the user.

12.7.1 Print servers

Print servers are displayed on the left side of the screen. These servers appear in the order in which they were created in HP AC Job Accounting.

Click a print server in this column, and all printers managed by this server will be listed in the right column. This list provides the printer's local name, port name, driver name, and all available functionalists for each printer (color, duplex printing). The columns **Local name** and **Sharing name** can be sorted in ascending or descending alphabetical order if you click on the titles of the columns.

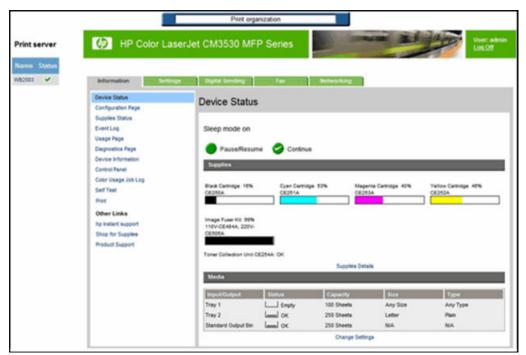
Figure 12-43 Print server column



12.7.1.1 Printers

Click a printer port to get the characteristics of this printer. This reaches the internal web site of the printer, allowing you to determine its status and administer its configuration.

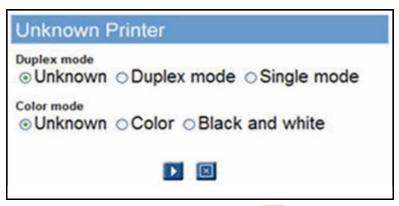
Figure 12-44 Printer internal website



HP AC Job Accounting has an auto-detect feature that determines the type of printer connected and configures accordingly. However, it may be unable to auto-detect the printer under the following conditions:

- If the printer is not manufactured by HP, Inc.
- If the printer is offline.
- If the printer is installed locally (LPT1 or USB) and not on the network.

Figure 12-45 Manually define printer



After specifying the type of printer, click the Go $\parallel \rangle$ icon to accept the information, or the Cancel $\mid \rangle$ icon to stop the operation.

12.8 Manage print costs

12.8.1 Cost control overview

One of the main HP AC Job Accounting benefits is its ability to produce extremely accurate printing cost information and employ enterprise-level print cost control solutions in your organization. The cost of a printer is linked to many factors:

- Accessories
- Maintenance
- Technology (such as whether it is a laser printer)
- Color
- Quality
- Speed
- Depreciation time

Each of these factors involves a cost, which determines the cost of each printed page. To secure accurate billing, the exact number of printed pages and associated costs must be determined. After this information is compiled, the cost of a print job can be calculated. If the cost of any printer, media, or other element is updated or modified, the resulting cost of all print jobs related to this printer, media, or other element will also be dynamically updated.

⚠ CAUTION: The cost of media is independent of the printer. Media cost depends on the price of the paper in this particular format and quality. HP AC Job Accounting automatically calculates the cost of a print job according to the defined costs and the number of printed pages.

In addition to calculating the actual price of each print job or page, HP AC Job Accounting also enables you to assign a fixed cost to a print job or to a printed page. These user-defined costs do not take into account the real price involved in the print process, but rather printing characteristics, such as the media or the color mode. For more information on these fixed costs, see Section 12.8.4, Define fixed costs.

You must enter the cost of all printers and media if you want to launch queries related to costs. If any of this information is missing, all your guery results containing cost information will be inaccurate.

 \triangle CAUTION: If a printer's purchase price has been defined for a printer using a printer template, it is not necessary to redefine this cost, since it automatically becomes the real purchase price for this printer.

12.8.2 Cost management page

Click **Page cost management** in the HP AC Job Accounting Remote control panel to reach the printer selection page. This page allows the selection of a print server and printer, for which cost information must be entered:

Figure 12-46 Page cost management



The print server/printer list is a dynamic list of all print servers and printers used at least once in your print system since the initial HP AC Job Accounting installation. You can select one or more printers, to which common costs apply. Hold the Ctrl or Shift keys while clicking to select a range of choices.

The printer selection page appears by default when you click **Actual Costs:** printers in the task bar at the top of the page.

An icon may appear between the task bar and the printer list, as follows:

Figure 12-47 Processing icon



This icon indicates that HP AC Job Accounting is calculating costs. This can happen when new costs are entered, or when defined costs are modified or entered.

12.8.3 Actual costs: printers

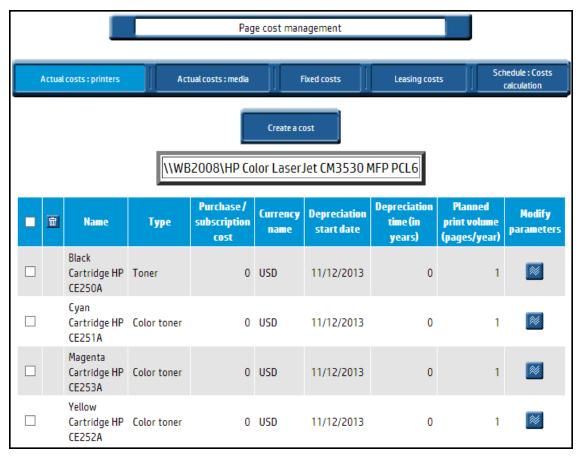
There are often several costs associated with printers; such as toner/ink, media, maintenance, and warranty. The actual cost of a printer is determined by a combination of these variables. These costs are different than templates, where a default cost is associated to one or several printers without taking into account the actual costs of each printer. These costs are also opposed to fixed costs, where only one of these actual cost components is taken into account—for instance, when only the media format of the paper is used to determine a document printing charge.

12.8.3.1 Manual actual costs

To manage your actual costs:

- 1. Select one or several print servers or printers on the **Page cost management** screen selection page.
- 2. Click the Go to open Page cost management page. Actual printer costs may be viewed here.

Figure 12-48 Actual printer costs



The print server and printer you selected appear at the top of the page. Any costs defined for these printers appear in the list.

From this screen, you may:

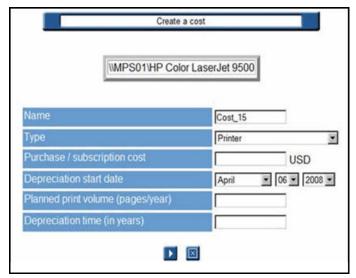
- Create the actual costs attached to a printer by clicking **Create a cost**.
- Modify the actual cost attached to a printer. Select the cost to modify and click the Modify parameters icon.
- Delete the actual cost attached to a printer. Select the cost to delete and click the Delete 🔯 icon.

12.8.3.2 Create actual printer costs

To create an actual cost, enter the appropriate information in **Create cost** as follows:

- Choose a name for the cost. The default name is Cost_(the cost number). Enter up to 15 characters, symbols, or figures.
- Choose a cost Type from the drop-down menu: Printer, Toner, Color toner, Warranty, Maintenance, Leasing, or Miscellaneous.
- Enter the Purchase / subscription cost to apply. You can enter up to 8 values. The currency used appears next to the cost entry field. This currency is defined in your user options. See Section 12.10, HP AC Job Accounting user options.
- Choose the Depreciation start date. By default, it is today's date. You can choose a date between 01/01/1990 and 12/31/2100.
- $rac{f Z}{f NOTE}$: Do not enter depreciation start date or period for toners. Only the number of printed pages is relevant to depreciation allowances. The printer manufacturer provides this information.
- Enter the Planned print volume (pages/years). You can enter up to 15 figures. The HP AC Job Accounting administrator must estimate this number, except for toner.
- Enter the Depreciation time (in years). Year is the only available time unit. You can enter up to 15 figures. The HP AC Job Accounting administrator must estimate this number.

Figure 12-49 Create a cost



For the first year, enter an accounting evaluation of the depreciation time of your printer. You must also evaluate the number of pages to be printed over this depreciation period. For the following years, you will be able to enter values based on the information provided by HP AC Job Accounting. The currency used to express this cost is defined in your user options.

HP AC Job Accounting defines the cost of your printing jobs according to the number of printed pages per job. The cost of a printing job depends on:

- The page-printing mode: is this page printed in duplex or simplex mode? The duplex mode reduces your printing cost, since you need less paper to print a document.
- Ink price and the color or black and white printing mode.
- Depreciation time of the various components and costs associated with the printer such as purchase price or guaranty.
- Printing quality (such as standard vs. fine quality printing, or ink coverage defined by the user) and the media used.

The following limitations apply when calculating these costs:

- HP AC Job Accounting does not include the ink coverage on the page. A one-line page will be charged at the same price as an entire printed page.
- The cost of electricity is not included.



12.8.3.3 Modify a printer actual cost

After selecting the cost to modify and clicking the Modify parameters **M** icon, you reach the cost entry page. This page contains all information you previously entered regarding this cost.

NOTE: If you already defined a template for your printer and want to modify your data, you must use this section and not add a new cost using Create a printer cost. When you modify any cost, HP AC Job Accounting calculates all print job costs in its database. If a toner cartridge must be replaced you should not create a new toner cost, which would add to the total toner cost, but modify the cost of the former toner.

To modify costs, as desired, click the Go icon to accept the modifications, or the Cancel icon to stop the operation.

12.8.3.4 Delete a printer actual cost

You should delete the cost of any component or option which will not be sued again, or which is obsolete.

NOTE: All print jobs in the HP AC Job Accounting database will be recalculated when there is any cost deletion.

To delete a printer actual cost:

- 1. Select the cost to delete and click the Delete 🔀 icon.
- 2. Click the Go icon to accept the cost deletion, or the Cancel icon to stop the operation.

Figure 12-50 Delete printer cost

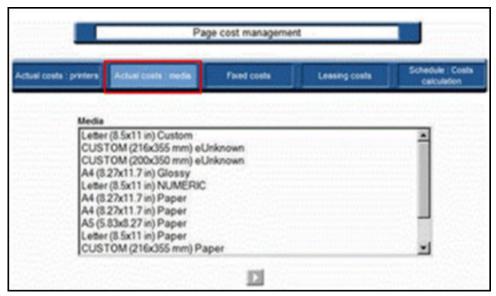


12.8.3.5 Actual costs: media

The price of a media depends on the paper size and type (for instance glossy, transparent paper, and weight). Use the following steps to enter a media price.

Click Actual costs: media.

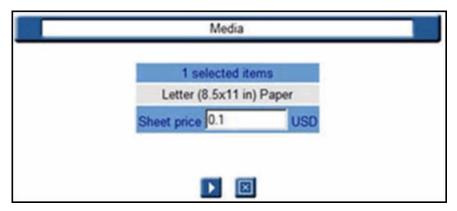
Figure 12-51 Actual costs: media



The media list which displays consists of all combinations of media size and type used at lease once since HP AC Job Accounting installation.

- Choose a combination and then click the Go icon. 2.
- Enter the desired amount on the Media page. 3.

Figure 12-52 Media costs



A CAUTION:

- If a printer's purchase price has been defined for a printer with a printer template, it is not necessary to redefine the cost, since it automatically becomes the real purchase price for this printer.
- The price of media is calculated using the price of one sheet of paper in this particular format. It does not depend on the printer, or print organization.

All costs are expressed in the currency defined in Section 12.10.1.1, User options. To change the currency type in which these costs are expressed, see Section 12.10, HP AC Job Accounting user options.

12.8.4 Define fixed costs

This feature allows you to set a fixed price per page or for an entire document according to its characteristics, without taking into account the actual cost of this document.

For example, assume you want to monitor your company's printing expenditure. You want every A4 document to be charged \$0.2, regardless the number of printed pages or the mode used. This price should be set in the fixed cost management page.

12.8.4.1 Fixed costs

The Fixed costs management screen contains all defined fixed costs: name, amount of each fixed cost, and currency used. Click **Fixed costs** to open the Fixed costs management page:

Figure 12-53 Fixed costs management



From within Fixed costs you can **Create a fixed cost** or **define the Costs priority rules**

Create a fixed cost:

Select one or more elements in one or more criteria. You can combine several criteria by holding the Ctrl or Shift keys—an A4 document can cost \$0.2, a color document \$0.4, and an A4 color document \$0.6.

Enter the price for all selected criteria. You can enter up to 8 figures in this field. The currency used appears next to the entry field. This currency is defined in your user options.

When your selections and prices are entered, click the Go \mathbb{N} icon to accept the information, or the Cancel \mathbb{N} icon to stop the operation.

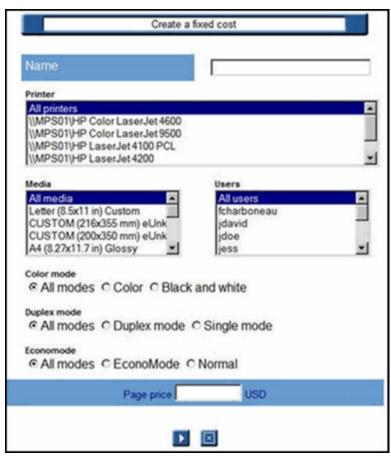
Actual costs will be assigned to all criteria for which no fixed cost is entered. These actual costs are those associated to printers, media, and trays.

As soon as HP AC Job Accounting detects a new element of a criteria (such as a new user or a new printer), this element is automatically added to the criteria list. If you want to associate your fixed cost to this new element, you should modify your fixed cost by reselecting this element in your criteria. However, if you select All for this criteria, it is not necessary to re-select it. All means that all elements in these criteria are automatically considered.



- The Name field is required.
- If you define two fixed costs for the same criteria and elements the latest cost is considered.

Figure 12-54 Create a fixed cost



Costs priority rules: A problem may arise when several costs for a combination of common criteria have been defined.

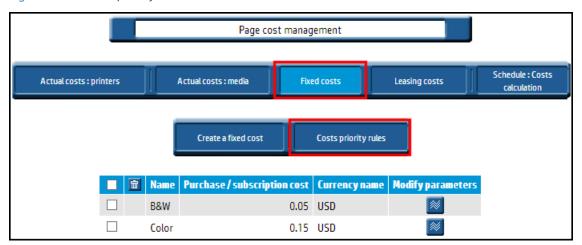
Example: Document A printed in letter format costs \$ 0.2, document B printed in color mode costs \$ 0.3, and document C printed in letter format and color mode costs \$ 0.5. At this point, priority must be assigned to these fixed costs.



NOTE: The priorities defined in this section apply to all fixed costs. You cannot specifically define a priority order to some of your fixed costs.

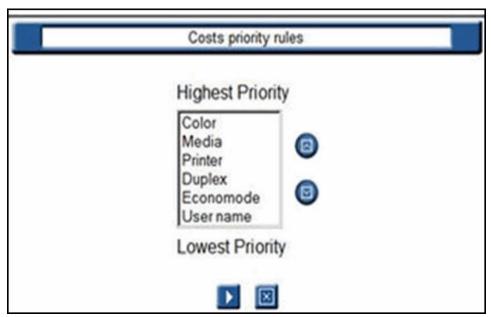
After fixed costs are defined, click **Costs priority rules**.

Figure 12-55 Costs priority rules



The list of criteria appears in default priority order. The criterion at the bottom of the list contains the lowest priority. The criterion with the highest priority is at the top of the list. If these priorities do not suit your own priority order, you can modify by clicking on a criteria, then by clicking Increase priority or Decrease priority icons to move the selected criteria up or down as desired. Repeat this operation for all relevant criteria.

Figure 12-56 Costs priority rules defined



When you launch a cost query, the fixed cost that is first selected corresponds to the criteria with the highest priority.

NOTE:

- You must enter priorities when you have more than one fixed cost.
- All criteria have a default priority.
- All criteria for which **ALL** is selected have the lowest priority.
- Any priority change involves recalculating your costs. Depending on the size of the print jobs database, this operation may take several minutes.

HP AC Job Accounting analyzes the three documents described at the beginning of this section according to their characteristics and the priority assigned to these characteristics.

Table 12-1 Media priority

Document	Media	Printing Mode	Cost
С	Letter	Color	\$0.5
В	All	Color	\$0.3
A	Letter	All	\$0.2

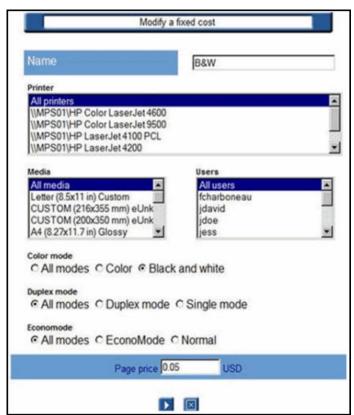
As document C matches two criteria, it will be assigned \$0.5 as cost. Then the priority is given to the colorprinted document. If no other criterion matches a priority, the document is charged according to its media cost.

12.8.4.2 Modify a fixed cost

Complete the following steps to modify a fixed cost:

Select the cost to modify, and click the Modify parameters **M** icon. The **Modify a fixed cost** page contains information already entered regarding this cost.

Figure 12-57 Modify a fixed cost



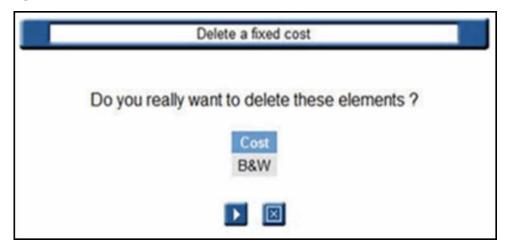
After you have modified the desired data, click the Go icon to accept the modification, or the Cancel icon to stop the operation.

CAUTION: For any modification of your fixed costs, HP AC Job Accounting will recalculate any cost related to the modifications. This operation, depending on the quantity of jobs tracked in the database, can take several minutes.

12.8.4.3 Delete a fixed cost

Select the fixed cost to delete and click the Delete 🔀 icon. The name of the cost appears at the top of

Figure 12-58 Delete a fixed cost



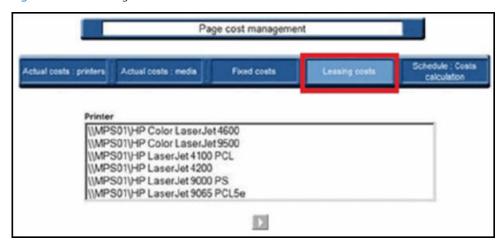
- Click the Go icon to accept the cost deletion, or the Cancel 🔀 icon to stop the operation.
- NOTE: After a fixed cost has been deleted, the actual cost of each printed page is used to calculate printing costs. When fixed costs are deleted, HP AC Job Accounting recalculates any cost concerned with these deletions. This operation, depending on the quantity of jobs tracked in the database, can take several minutes.

12.8.4.4 Lease costs

The cost of leasing can depend on a monthly lease rate or a per-page rate for color or black-and-white printing, faxing, or copying. Use the following steps to manage the lease costs for a printer:

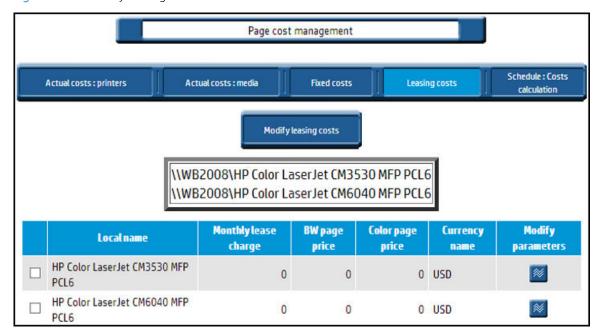
Click **Leasing costs** in the bar at the top of the page.

Figure 12-59 Leasing costs



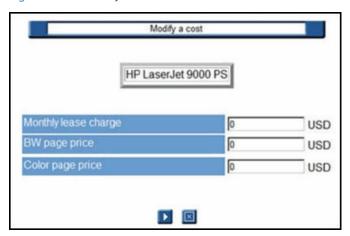
Choose a Printer from the list. You can select one or more printers to which common costs apply. Hold the Ctrl or Shift keys while clicking to select a range of choices, and then click the Go icon to open the table displaying current leasing cost parameters for the selected printer.

Figure 12-60 Modify leasing costs



- To set or change the leasing costs for an entire group of printers, click **Modify leasing cost**.
- To set or change the leasing costs for a single printer, click the box to the left of the printer name, and then click the Modify **M** icon.

Figure 12-61 Modify a cost



Add or change monthly lease and per-page costs for the printer in the fields provided. Click the Go 🚺 icon to accept the changes, or the Cancel 🔀 icon to stop the operation.

All costs are expressed in the currency defined in User options. To change the currency type in which these costs are expressed, see Section 12.10, HP AC Job Accounting user options.

NOTE: The Cost Calculation does not need to be enabled if only Leasing costs is used. The calculation is performed when the query is processed.

12.8.4.5 Schedule: Costs calculation

Click **Schedule costs calculations** on the navigation bar.

Figure 12-62 Schedule: Costs calculation



Select **Schedule parameters**:

Days

Start time

End time

Enabled Allows you to toggle the scheduling feature on or off. When checked, the process is started and calculation is done. When unchecked, the calculation is disabled.

If Recalculate costs from is enabled, all the jobs printed after the selected date will be recalculated with the current cost information. Jobs printed before the date will not be affected if a cost is changed.

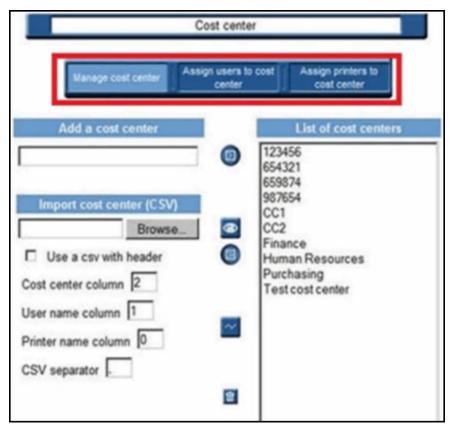
12.9 Cost center

12.9.1 Managing or creating

Cost centers are another method the administrator can use to organize, group, and track output of printers or users. After cost centers are created and assigned, you can perform queries to determine individual or collective use of cost centers.

To either manage or create cost centers, click **Cost center** in the HP AC Job Accounting remote control:

Figure 12-63 Cost center — manage or create



12.9.1.1 Manage a cost center

Cost centers must be created before users or printers can be assigned to them. This process can be performed manually by the administrator, or automatically by importing a CVS file. The steps for creating cost centers are explained in the following sections.

12.9.1.1.1 Add a cost center

To add a cost center manually:

- Enter a name for the cost center in the **Add a cost center** field.
- 2. Click **Add a cost center** button to add a new cost center to the list.

12.9.1.1.2 Import a cost center

When adding a large number of cost centers, printers, or users, it is quicker and more efficient to import a standard CSV file containing the data. This method also allows for both cost center creation and user/printer assignment to occur in a single step.

CSV files can be generated through a spreadsheet program, or simply typed with a text editor and saved as shown below:

Figure 12-64 Import cost center data

```
- 0
                            CompanyStaff.csv - Notepad
             Elle Edit Format Yiew Help
          Engineering, JSmith, HP Color LaserJet 4600
          Engineering, BJones, HP Color LaserJet 4600
Engineering, HPatel, HP Color LaserJet 4600
Engineering, HPater, Engineering, TChen, HP Color LaserJet 9500 Marketing, Bwatson, HP Color LaserJet 9500 Marketing, RSuarez, HP Color LaserJet 9500 Marketing, FKlein, HP Color LaserJet 9500 Sales, DFranco, HP LaserJet 9000 PS Sales, MJohnson, HP LaserJet 9000 PS Sales, FImperioli, HP LaserJet 9000 PS Finance, SLecarre, HP LaserJet 4200 Finance, Dwilson, HP LaserJet 4200 Finance, YCraig, HP LaserJet 4200 Finan
                                                                                                                         TChen, HP Color LaserJet 4600
                                                                                                                                                                                                                                                                             LaserJet 9500
         Finance, YCraig, HP LaserJet 4200
Finance, FFurrilo, HP LaserJet 4200
Human Resources, EShattuck, HP LaserJet 4100 PCL
Human Resources, CVasquez, HP LaserJet 4100 PCL
```

NOTE: When importing a CSV file, user names and printer names MUST match those being tracked by HP AC Job Accounting.

To import cost centers,

- Enter the path of the CSV file in the field or click **Browse** and locate it.
- 2. Specify whether to use a CSV with header.
- 3. Indicate in the field which column of the CSV file contains the names of the cost centers you wish to create.

To assign users or printers to the imported cost center automatically, enter the column number that contains the user name or printer in the appropriate field.

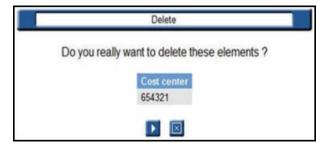
NOTE: You can assign either a user name or printer to imported cost centers – not both.

12.9.1.1.3 Delete a cost center

Use the following steps to delete a cost center:

- From the Manage cost center page, select the desired cost center from the list on the right and then click the Delete 🔀 icon.
- Click the Go licon to accept the deletion, or the Cancel licon to stop the operation.

Figure 12-65 Delete a cost center



12.9.1.2 Assign users to a cost center

After cost centers have been created or imported, use the following steps to assign user names to them.

Click **Assign users to cost center** to access the following page:

Figure 12-66 Assign users to cost center



- Select from the list of **Available users** in the left column.
- Ŷ TIP: The list of available users can be filtered by using the drop-down menu above it.
- Choose a cost center from the drop-down menu on the right.
- Click the **Assign** icon to assign the user to the desired cost center.

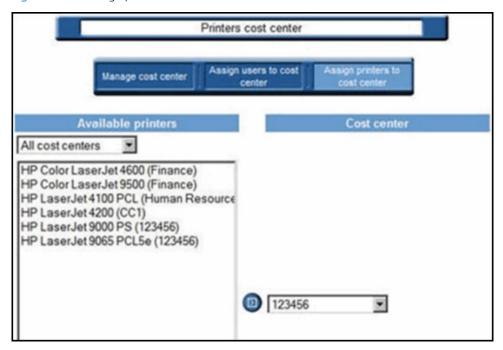
To remove all users, click the Delete icon to delete the all users from the list and then automatically import all users tracked by HP AC Job Accounting.

12.9.1.3 Assign printers

Assigning printers to a cost center is very similar to assigning users. After cost centers have been created or imported, printer names can be assigned to them.

Click **Assign printers** to cost center to display the following page:

Figure 12-67 Assign printers to cost center



- Select from the list of **Available printers** in the left column.
- ∵∳ TIP: The list of available printers can be filtered by using the drop-down menu above it.
- 3. Choose a cost center from the drop-down menu on the right.
- Click the **Assign** icon to assign the printer to the desired cost center.

12.10 HP AC Job Accounting user options

12.10.1 Options

During the initial installation of HP AC Job Accounting, some options are set by default, such as the language and the currency used in the application. These default options are set according to the language defined by your operating system. When using HP AC Job Accounting you can change the following options:

- Language
- Currency
- Date format
- Number of lines displayed in HP AC Job Accounting lists
- Password
- Email address

The columns of the query table can be accessed by clicking **User options** in the HP AC Job Accounting remote control.

Any modifications performed to these options are only valid for the user whose login is currently being used.

Click **User options** in the remote control to reach the general user summary for all user options: language, currency, interface, and date format, as well as your electronic address and the number of lines displayed in the HP AC Job Accounting lists.

Figure 12-68 User options



From **User options** you can modify the following:

- Options appearing in the general options page
- HP AC Job Accounting account password
- Information provided for all launched gueries

Use the task bar located at the top of the screen to make any of the changes listed above.

12.10.1.1 User options

Click **User options** in the task bar and the following page appears:

Figure 12-69 Define user options



Your user name appears at the top of the page. To accept one or several modifications performed on this page, click the Go icon, or click the Cancel icon to stop the operation.

12.10.1.1.1 Language/currency

Choose a language and a currency from the pull-down menus. The languages already defined in HP AC Job Accounting are:

Table 12-2 Language/currency

Czech	Korean
Dutch	Polish
English	Portuguese
Finnish	Simplified Chinese
German	Spanish
Hungarian	Swedish
Italian	Turkish
Japanese	Traditional Chinese

Currencies already defined in HP AC Job Accounting are:

- **US** Dollar
- Euro
- **British Pound**

🗥 CAUTION: You can add currencies, but you cannot add languages. For more information regarding currency management, see Section 12.5.2, Currencies.

12.10.1.1.2 Number of lines in lists

You can modify the number of lines displayed in all HP AC Job Accounting lists such as the guery table, the results list of a recurring query, or the list of print servers and printers in the Print Organization menu. The default number of display lines in one list is 10.

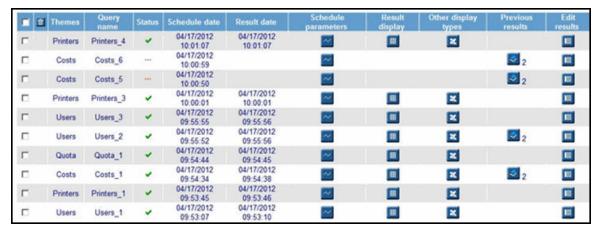
To change the number of display lines, enter the number you want in the Number of lines in lists lines field.



NOTE: Your data is not affected by this change.

For example, a query table with 10 display lines appears as follows:

Figure 12-70 Query table with 10 lines



The same guery table with 5 display lines appears as follows:

Figure 12-71 Query table with 5 lines



You can sort all queries in the query table by ascending, descending, or alphabetical order by clicking the column title. To sort all your queries, and not only the queries displayed on the current page, all queries must be displayed on one single page. To display all gueries on one page, enter 0 in this field.

12.10.1.1.3 Email address

You can forward guery results to a specified email address. Any HP AC Job Accounting user or administrator can define their email address.

Use the following steps to define an email address:

- Click in the Email address entry field. 1.
- Enter/modify your address as desired. You can enter up to 127 characters, symbols, and figures. Your email address appears each time you reach this page.

12.10.1.1.4 Data format

Date formats differ depending upon the country/region in which you reside. HP AC Job Accounting allows you to configure the date format displayed in the application.

- 1. Click on the preferred format.
- Click the Go [12] icon to accept the configuration, or the Cancel [22] icon to stop the operation.

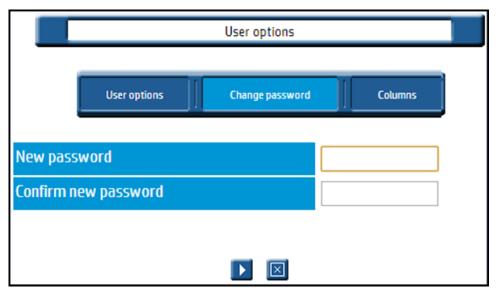
12.10.1.2 Set passwords

The HP AC Job Accounting administrator defines your password when the HP AC Job Accounting account is initially created.

Use the following steps to reset the password:

- Click **Change password**.
- Enter the new password in both fields.

Figure 12-72 Change password



- ⚠ CAUTION: Passwords are case-sensitive.
- Click the Go icon to accept the new password, or the Cancel icon to stop the operation.
- NOTE: It is highly recommended that you change the password of the Admin account.

12.10.1.3 Queries in progress

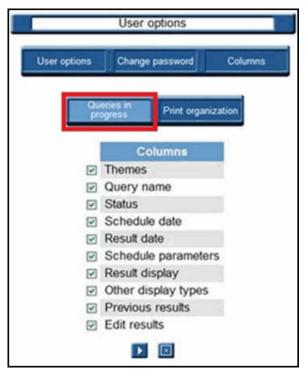
Columns

To modify content within the table, from **Users options**:

Go to **Queries in progress** and select the desired columns.

Click **Columns** on the User options page to get the list of all displayed columns:

Figure 12-73 Query columns



By default, all options are highlighted.

- Uncheck the title of the columns you want to hide.
- Click the Go icon to accept the selections, or the Cancel icon to stop the operation.

12.10.1.4 Print organization

To generate a list of all displayed columns, complete the following steps:

1. Go to **Print organization**.

Figure 12-74 Print organization columns



- Uncheck the title of the column(s) you wish to hide.
- Click the Go icon to accept the selections, or the Cancel icon to stop the operation.

12.11 Perform a query

12.11.1 Queries

Use HP AC Job Accounting's tracking function to get statistical data related to your printed documents, printing system, or costs. HP AC Job Accounting only manages print jobs processed by HP AC Job Accounting print servers. They are created by end users and can be of any format: text, spreadsheet, word processing, or databases.

While the print job is being processed, the HP AC Job Accounting print server analyzes its characteristics, which are then sent to the HP AC Job Accounting Database Server to be stored. This data includes the following characteristics:

- End users (name, login)
- Printers (name, model, driver, characteristics)
- Print jobs (document title, printer, number of printed pages, color media, costs per page and per printer model)
- Total print number per user, per printer and per day
- Workload for each printer to determine the printer's efficiency
- Statistics for each printer
- Statistics for each time period
- Statistics for each end user

These characteristics are easily retrieved by running queries. The data is then presented in one or more formats (table, chart, or spreadsheet).

12.11.1.1 Initiate a guery

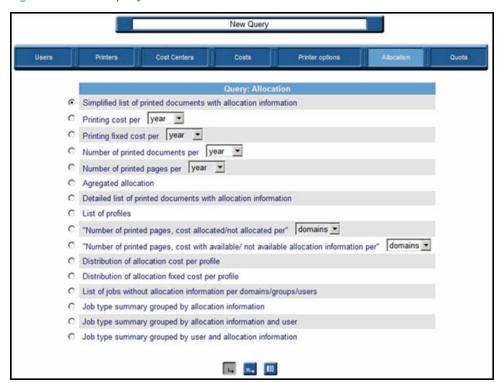
Queries can be initiated by clicking **New Query** on the HPAC Job Accounting remote control. This chapter describes the following:

- The various types of queries.
- How to run a query.
- How to modify your query parameters.

12.11.2 HP Access Control (HP AC) Job Accounting gueries

The New Query page can be accessed by clicking **New Query** on the HP AC Job Accounting remote control.

Figure 12-75 New query



This page is divided into three main areas:

- The guery navigation bar at the top of the page.
- The guery types in the middle of the page.
- The task icons at the bottom of the page.

The query navigation bar allows queries to be initiated on:

- **Users** who have printed at least once since HP AC Job Accounting installation.
- **Printers** that have processed at least one print job since HP AC Job Accounting installation.
- **Cost Centers** that have been defined and assigned (to printers or users) by the administrator.
- **Printing costs** generated by the end users or by the printers in your print system.
- **Printer options**, or the frequency of use per user or per printer of the various printing modes: duplex, color, and Economode.
- **Allocation** information stored in the database.

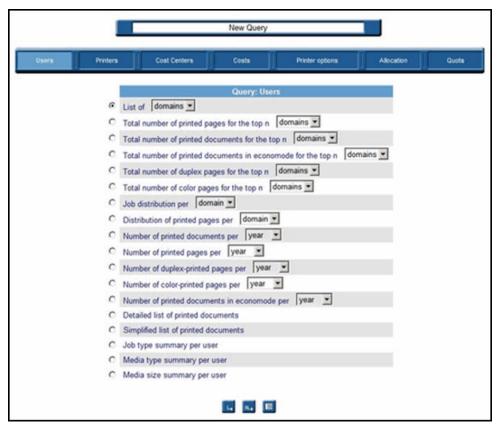
Click the appropriate icon to choose the type of query you would like to perform. The list of all queries related to this theme appears within the general display window. A description of each query type is provided in the following section.

12.11.2.1 Query types

12.11.2.1.1 Users

The queries contained within this theme pertain to the printer users. Search restrictions can be any of the following: print periods (start date, end date), the user's name, their groups, their domain, the date when they first printed, the document title, and cost. Some gueries are limited to only the first n users matching the specified criteria. A single user can belong to one domain, and to several groups.

Figure 12-76 New guery — users



Lists of users, groups, or domains

Before launching this guery, choose user/domain/group from the pull-down menu. By default, all domains from which print jobs were processed since HP AC Job Accounting installation are considered.

Total number of printed pages for the top n users/domains/groups

Lists the first n users/domains/groups for which the greatest number of pages was printed. Before launching your query, choose user/domain/group in the pull-down menu. This guery allows the greatest number of printed pages to be obtained, as well as the total number of pages printed in duplex and in color mode. By default, this guery provides the 10 domains for which the greatest number of pages was printed since HP AC Job Accounting installation. This list allows you to audit your print system, and target the print volume per user.

Total number of printed documents for the top n users/ domains/groups

Lists the first n users/domains/groups for which the greatest number of documents was printed. Before launching your query, choose user/domain/group in the pull-down menu. The guery then considers all print jobs. By default, this guery provides the 10 domains for which the greatest number of documents was printed since HP AC Job Accounting installation. This list allows you to audit your print system and analyze print volumes.

Total number of documents printed in Economode for the top n users/ domains/groups

Lists the first n users/domains/groups for which the greatest number of documents was printed in Economode. Before launching your query, choose user/domain/group in the pull-down menu. This guery considers only the documents printed in this particular mode. By default, this query provides the 10 domains for which the greatest number of documents was printed in Economode since HP AC Job Accounting installation.

Total number of duplex pages for the top n users/ domains/groups

Lists the first n users/domains/groups for which the greatest number of duplex pages was printed. Before launching your query, choose user/domain/group in the pull-down menu. Both short-side and long-side printed pages are taken into account. By default, this query provides the 10 domains for which the greatest number of duplex pages was printed since HP AC Job Accounting installation. This query also allows the user to obtain the total number of printed pages, as well as the total number of pages printed in color mode. This list allows audits to be conducted on the print system, and to determine if a duplex printer is being properly used.

Total number of color pages for the top n users/ domains/groups

Lists the first n users/domains/groups for which the greatest number of color pages was printed. Before launching your guery, choose user/domain/group in the pull-down menu. By default, this guery provides the 10 domains for which the greatest number of color pages was printed since HP AC Job Accounting installation. This query also allows the user to obtain the total number of printed pages, as well as the total number of pages printed in color mode. This list allows audits to be conducted on the print system, and to determine the frequency of the color mode usage per group. It also enables easy identification of how a color printer is being used (such as if a color printer is used as a black and white printer).

Job distribution per domain/group/user

Charts the distribution of print jobs per user, group, or domain in percentage. Before launching your query, choose user, group, or domain in the pull-down menu. This query generates a comparison of the total print volume for all your users, groups, or domains. By default, all documents printed from all domains since HP AC Job Accounting installation are considered. This query highlights the usage frequency of your printers per user group (departments).

Distribution of printed pages per domain/group/user

Charts the distribution of printed pages per user, group, or domain, in percentage. Before launching your query, choose user, group, or domain in the pull-down menu. This query generates a comparison of the total printed page volume for all your users, groups, or domains. By default, all pages printed from all domains since HP AC Job Accounting installation are included. This guery highlights the usage frequency of printers per user group (departments).

Number of printed pages per year/month/day/hour

Charts the total number of printed pages per year, month, day, or hour. This guery also provides printing dates. Before launching this query, choose year/month/day/hour in the pull-down menu. By default, all pages printed by all users of all domains since HP AC Job Accounting installation are included.

Number of duplex-printed pages per year/month/day/hour

Charts the total number of pages printed in duplex mode per year, month, day, or hour. This query also provides printing dates. Before launching this query, choose year/month/day/hour in the pull-down menu. By default, all pages printed in duplex mode by all users of all domains since HP AC Job Accounting installation are included.

Number of color-printed pages per year/month/day/hour

Charts the total number of pages printed in color mode per year, month, day, or hour. This guery also provides printing dates. Before launching this guery, choose year/month/day/hour in the pull-down menu. By default, all pages printed in color mode by all users of all domains since HP AC Job Accounting installation are included.

Number of documents printed in Economode per year/ month/day/hour

Charts the total number of documents printed in Economode per year, month, day, or hour. This query also provides printing dates. Before launching this query, choose year/month/day/hour in the pull-down menu. By default, all documents printed in Economode by all users of all domains since HP AC Job Accounting installation are included.

Simplified list of printed documents

Lists all printed documents. This query provides a result regarding general characteristics: document name, total/printed number of pages. With this query, all documents are listed according to the user who printed the document. By default all users of all domains, who printed at least once since HP AC Job Accounting installation, are included.

This guery allows information to be generated on printed documents and their characteristics: the printing launch date, the printer driver, the document title, the total number of printed pages and sheets in duplex and color mode, the copy number, the domain, the print job cost related to the print server, printer and the currency used, the job size and media. You can refine your query by defining a document title (all documents whose title starts with a specific string). By default, all print job characteristics are taken into account. Documents whose printing is complex can be analyzed and the document cost as near as possible to its actual costs. Results are provided in a table.

Detailed list of printed documents

Lists all printed documents. This query provides a detailed result concerning the page: color and duplex pages, trays, and media used for printing. With this guery, all documents are listed according to the user who executed the print spool. By default all users of all domains, who printed at least once since HP AC Job Accounting installation, are included.

This query concerns the printed documents helps you control printing costs. The query also allows generation of printed document characteristics: the printing launch date, the printer driver, the document title, the total number of printed pages and sheets in duplex and color mode, the copy number, the domain, the print job cost related to the print server, printer and the currency used, the job size and media. You can refine your query by defining a document title (all documents whose title starts with a specific string). By default, all print job characteristics are taken into account. Documents whose printing is complex can be analyzed and the document cost as near as possible to its actual costs. Results are provided in a table.

Job type summary per user

Lists use information for each user, including user name, number of color printed pages, number of b/w printed pages, number of color copied pages, number of b/w copied pages, number of faxed pages, and number of scanned pages. Results are provided in a table.

Media type summary per user

Lists for each user the number of pages printed for each media type along with a sum of total cost and fixed cost information.

Media size summary per user

Lists for each user the number of pages printed for each color media size and b/w media size along with a sum of total cost and fixed cost information.

12.11.2.1.2 Printers

The queries of this theme concern all printers in your print system tracked by HP AC Job Accounting. The default search filter is servers. Other search parameters can be:

Printer gueues: Printers declared on a print server with a specific monitor port or driver. A single physical printer can be declared several times on the same print server with different ports or drivers.

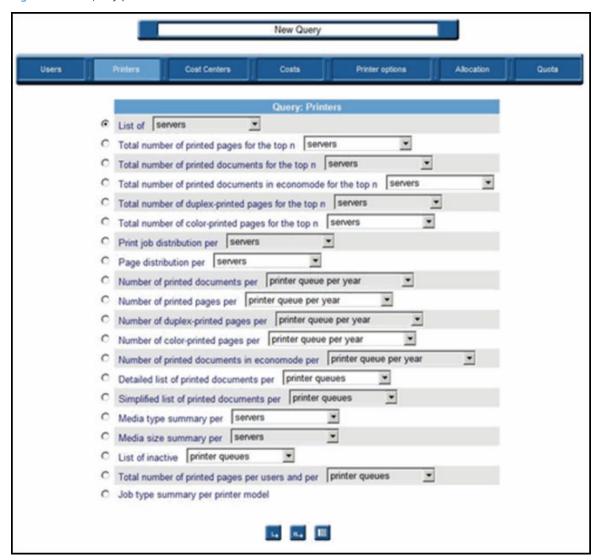
Printer models: Consist of all printers of the same model. For instance, all HP 4500 LaserJet have the HP 4500 model.

Devices: Refers to the actual, physical printers. Several printer queues can refer to a single device.

Serial numbers: Refers to printer serial numbers.

Depending on the query, results are displayed in tables or charts.

Figure 12-77 Query printers



List of servers, printer queues, printer models, devices, or serial numbers

Lists servers, printer queues, printer models or printers tracked since HP AC Job Accounting installation. Before launching this query, choose servers, printer queues, printer models, serial numbers, or printers in the pull-down menu. This guery informs you of the date when the device was used and therefore declared in HP AC Job Accounting, as well as the supported options (such as color or duplex). By default, all printers used since HP AC Job Accounting installation are included.

Total number of printed pages for the top n servers, printer queues, printer models, printers, or serial numbers

Lists the first n servers, printer queues, printer models, printers, or serial numbers on which the greatest number of pages was printed. Before launching this guery, choose servers, printer gueues, printer models, serial numbers, or printers in the pull-down menu. This guery examines the total number of printed pages, colorprinted pages, duplex-printed pages, and printed sheets. By default, this guery provides the 10 printers on which the greatest number of pages was printed since HP AC Job Accounting installation. This list is part of your print system audit, and allows you to target print volume per server or per printer, and to highlight peaks as well as bottlenecks.

Total number of printed documents for the top n servers, printer queues, printer models, printers, or serial numbers

Lists the first n servers, printer queues, printer models, printers, or serial numbers on which the greatest number of documents was printed. Before launching this query, choose servers, printer queues, printer models, printers, or serial numbers in the pull-down menu. By default, this query provides the 10 printers on which the greatest number of documents was printed since HP AC Job Accounting installation. This list is part of your print system audit, and allows you to target print volume per server or per printer and to highlight peaks or bottlenecks.

Total number of documents printed in Economode for the top n servers, printer queues, printer models, printers, or serial numbers

Lists the first n servers, printer queues, printer models, printers, or serial numbers on which the greatest number of documents were printed in Economode. Before launching this query, choose servers, printer queues, printer models, printers, and serial numbers in the pull-down menu. This query only includes the documents printed in this mode. By default, this query provides the 10 printers on which the greatest number of documents was printed in Economode since HP AC Job Accounting installation.

Total number of duplex-printed pages for the top n servers, printer queues, printer models, printers, or serial numbers

Lists the first n servers, printer queues, printer models, printers, or serial numbers on which the greatest number of pages were printed in duplex mode. Before launching this query, choose servers, printer queues, printer models, printers, and serial numbers in the pull-down menu. Both short-side and long-side printing is considered in this query. By default, this query provides the 10 printers on which the greatest number of pages was printed since HP AC Job Accounting installation. It also provides the total number of printed pages. This list is part of your print system audit, and allows you to verify whether a duplex printer is being properly used.

Total number of color-printed pages for the top n servers, printer queues, printer models, printers, or serial numbers

Lists the first n servers, printer queues, printer models, printers, or serial numbers on which the greatest number of pages were printed in color mode. Before launching this guery, choose servers, printer queues, printer models, printers, and serial numbers in the pull-down menu. By default, this query provides the 10 printers on which the greatest number of pages was printed since HP AC Job Accounting installation. It also provides the total number of printed pages, as well as the total number of duplex-printed pages. This list is part of your print system audit, and allows you to validate the use frequency of a printer's color mode.

Job distribution per server/printer queue/printer model/ device/serial number

Charts the distribution of print jobs per server, printer queue, printer model, device, or serial number. Before launching your query, choose server, printer queue, printer model, device, or serial number in the pull-down menu. This guery generates a comparison of the total print volume for all servers and printers. By default, all printers used since HP AC Job Accounting installation are included. This query highlights the usage frequency of your printers.

Distribution of printed pages per server/printer queue/ printer model/device/ serial number

Charts the distribution of printed pages per server, printer queue, printer model, device, or serial number. Before launching your guery, choose server, printer gueue, printer model, device, or serial number in the pull-down menu. This query generates a comparison of the total printed page volume for all your servers and printers. By default, all pages printed from all printers since HP AC Job Accounting installation are included. This query highlights the usage frequency of all printers.

Number of printed documents per...

Charts the total number of print jobs per year, month, day, or hour. Before launching this guery, choose a technical item (server, printer model, printer queue, device, serial number) and time unit (per year/ month/day/ hour) in the pull-down menu. This guery provides the total number of printed documents, as well as printing dates. You can select a specific server, printer queue, printer model, or device. By default, all documents printed since HP AC Job Accounting installation are included.

Number of printed pages per...

Charts the total number of printed pages per year, month, day, or hour. Before launching this query, choose a technical item (server, printer model, printer queue, device, serial number) and time unit (per year, month, day or hour) in the pull-down menu. You can select a specific server, printer queue, printer model, or device. This query also provides printing dates. By default, all pages printed by all users of all domains since HP AC Job Accounting installation are included.

Number of duplex-printed pages per...

Charts the total number of pages printed in duplex mode per year, month, day, or hour. Before launching this query, choose a technical item (server, printer model, printer queue, device, serial number) and time unit (per year, month, day or hour) in the pull-down menu. You can select a specific server, printer queue, printer model, device, or serial number. This guery provides the total number of duplex-printed pages, as well as printing dates. By default, all pages printed in duplex mode since HP AC Job Accounting installation are included.

Number of color-printed pages per...

Charts the total number of pages printed in color mode per year, month, day, or hour. Before launching this query, choose a technical item (server, printer model, printer queue, device, serial number) and time unit (per year, month, day, or hour) in the pull-down menu. You can select a specific server, printer queue, printer model, device, or serial number. This query provides the total number of color-printed pages, as well as printing dates. By default, all pages printed in color mode since HP AC Job Accounting installation are included.

Number of documents printed in Economode per...

Charts the total number of documents printed in Economode per year, month, day, or hour. This query also provides printing dates. Before launching this query, choose a technical item (server, printer model, printer queue, device, serial number) and time unit (per year, month, day, or hour) in the pull-down menu. You can select a specific server, printer queue, printer model, device, or serial number. This query provides the total number of documents printed in Economode, as well as printing dates. By default, all documents printed in Economode since HP AC Job Accounting installation are included.

Simplified list of printed documents

Lists all printed documents. Before launching your query, choose server, printer queue, printer model, device, or serial number in the pull-down menu. This query provides a synthetic result regarding general characteristics such as document name and total/printed number of pages. With this query, all documents are listed according to the printer that processed the print job. By default, all printers used at least once since HP AC Job Accounting installation are included.

This query concerns printed documents and helps with your printing costs control. It allows information to be gathered on printed documents and their characteristics: the print launching date, the printer driver, the document title, the total number of printed pages and sheets in duplex and color mode, the copy number, the domain, the print job cost related to the print server, printer and the currency used, the job size and media. You can refine your query by defining a document title (all documents whose title starts with a specific string). By default, all print job characteristics are included. Documents whose printing is complex can be analyzed and the document cost as near as possible to its actual costs. Results are provided in a table.

Detailed list of printed documents

Lists all printed documents. Before launching your query, choose the server, printer queue, printer model, device, or serial number in the pull-down menu. This query provides a detailed result concerning the page: color and duplex pages, trays, and media used for printing. With this guery, all documents are listed according to the printer that processed the print job. By default, all printers used at least once since HP AC Job Accounting installation are included.

This query concerns the printed documents and helps with your printing costs control. It allows information to be gathered on printed documents and their characteristics: the printing launching date (the date and time, when the user launched the print job and was not handled by the print server), the printer driver, the document title, the total number of printed pages and sheets in duplex and color mode, the copy number, the domain, the print job cost related to the print server, printer and the currency used, the job size and media. You can refine your

query by defining a document title (all documents whose title starts with a specific string). By default, all print job characteristics are taken into account. Documents whose printing is complex can be analyzed and the document cost as near as possible to its actual costs. Results are provided in a table.

Media type summary

Provides a summary of media used by servers, printer queues, devices, printer models, or printer serial numbers.

Media size summary

Provides a summary of media sizes used by servers, printer queues, devices, printer models, or printer serial numbers.

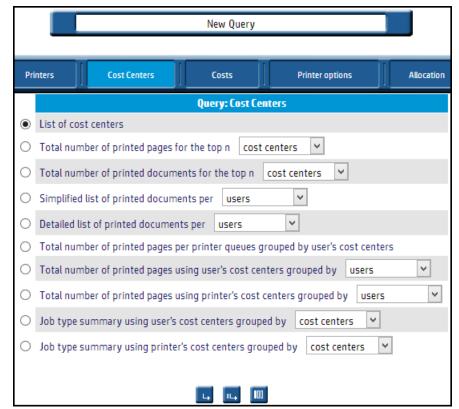
List of inactive queues, devices, models, or serial numbers

Provides a list of inactive printer queues, devices, printer models, or printer serial numbers.

12.11.2.1.3 Cost centers

This type of guery determines the usage and costs associated with users or printers assigned to a specified cost center. For more information on creating and assigning cost centers, see Section 12.11.2.1.3, Cost centers.

Figure 12-78 Query cost centers



List of cost centers

Lists all the existing cost centers currently defined within HP AC Job Accounting.

Total number of printed pages for the top n cost centers/users/print gueues

Lists the first n cost centers/users/print gueues for which the greatest number of pages was printed. Before launching your query, choose cost center/user/print queues from the drop-down menu. This query allows the greatest number of printed pages to be obtained, as well as the total number of pages printed in duplex and in color mode.

Total number of printed documents for the top n cost centers/users/print queues

Lists the first n cost center/users/print queues for which the greatest number of documents was printed. Before launching your query, choose cost center/users/print queue from the drop-down menu. The query considers all print jobs. This list allows you to audit your print system and to analyze print volumes.

Simplified list of printed documents per users/print queues

Lists all printed documents. This query provides a simplified result regarding the document's general characteristics: document name, total/printed number of pages. With this guery, all documents are listed according to the cost center that printed. This query allows information to be generated on printed documents and their characteristics.

Detailed list of printed documents per users/print gueues

Lists all printed documents. This query provides detailed results concerning the page: color and duplex pages, trays, and media used for printing. With this query, all documents are listed according to the cost center executing the print spool. This query concerns the printed documents and helps with controlling printing costs.

The query also allows generation or printed document characteristics: the printing launch date, the printer driver, the document title, the total number of printed pages and sheets in duplex and color mode, the copy number, the domain, the print job cost related to the print server, printer and the currency used, the job size and media. You can refine your query by defining a document title (all documents whose title starts with a specific string). By default, all print job characteristics are taken into account. Documents whose printing is complex can be analyzed and the document cost as near as possible to its actual costs. Results are provided in a table.

Total number of printed pages per printer queues grouped by user's cost centers

Provides the total number of pages printed by each cost center.

Total number of printed pages using user's cost centers grouped by users/ print queues

Lists total pages printed by each user's cost centers, grouped by either users or print queues.

Total number of printed pages using printer's cost centers grouped by users/ print queues

Lists total pages printed by each printer's cost centers, grouped by either users or print queues.

Job type summary using user's cost centers grouped by cost centers, users, or printer queues

Provides summary of jobs using user's cost centers; grouped by cost centers, users, or printer queues.

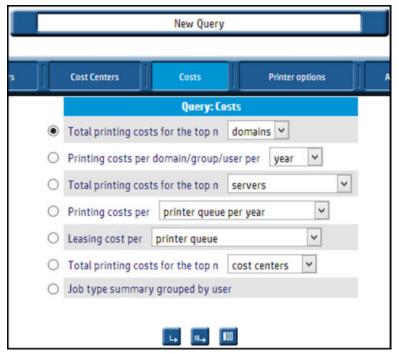
Job type summary using printer's cost centers grouped by cost centers, users, printer queues, or printer models

Provides summary of jobs using printer's cost centers; grouped by cost centers, users, printer queues, or printer models.

12.11.2.1.4 Costs

This group of queries reports the printing costs of all jobs processed between two dates. The query results are displayed in tables. The reports include the total number of jobs, their total size, the total number of printed pages and sheets in duplex and color mode, the total costs, and the total printing time. You can also compare the actual costs (the amount closest to the real costs) and the fixed costs that you define (this allows you to include, for example, consumable expenditures and maintenance). You can also set a limit on the printing time, the number of printed pages, and the printing costs. The HP AC Job Accounting gueries 93 limit types are: >, =, >=, < and <=. They are used to help you define the information queried more accurately.

Figure 12-79 Query costs



Total printing costs for the top n domains/groups/users

Lists the top n users, domains, or groups whose printing costs are the highest in a given period. Before launching your query, choose user/group/domain in the pull-down menu. This query takes into account the number of printed pages, the printing mode, the printer, and the media. By default, this guery provides the 10 domains best matching these criteria since HP AC Job Accounting installation. This guery helps with your costs management, by informing you of the costs involved in printing documents between two dates.

Total printing costs for the top n servers/printer queues/printer models/ devices/printer serial numbers

Lists the top n servers, printer queues, printer models, devices, or printer serial numbers whose printing costs are the highest on a given period. Before launching your query, choose servers, printer queues, printer models, devices, or printer serial numbers in the pull-down menu. This query takes into account the number of printed pages, the printing mode, the printer, and the media. By default, this guery provides the 10 devices best matching these criteria since HP AC Job Accounting installation. You can specify the currency in which to express your costs. The default currency is defined in your user options. For more information on this setting, see Section 12.10, HP AC Job Accounting user options. This query helps with your costs management, by informing you of the costs involved in printing documents between two dates.

Evolution of printing costs per domain/group/user per year, month, day, or hour

Charts the total real cost of all printed documents per hour, per day, per month, or per year. Before launching your query, choose domains, groups, or users in the pull-down menu. Select a specific domain, group, user, or currency. By default, all documents printed by any user of all domains since HP AC Job Accounting installation. are included. The default currency is defined in your user options. For more information, see Section 12.10, HP AC Job Accounting user options.

Printing cost per printer gueue, device, model, or serial number

Provides information on the cost of printed documents per hour, per day, per month, or per year. Before launching this query, choose a technical item (printer queue, device, printer model, serial number) and time unit (per year, month, day, or hour) in the pull-down menu.

Leasing cost per printer queue or printer serial number

Provides information on the leasing costs per printer queue or serial number, based on the monthly lease charge, b/w page price, and color page price defined. For more information, see Section 12.8, Manage print costs.

Total printing costs for the top n cost centers, users, or printer queues

Lists the top n cost centers, users, or printer queues whose printing costs are the highest in a given period.

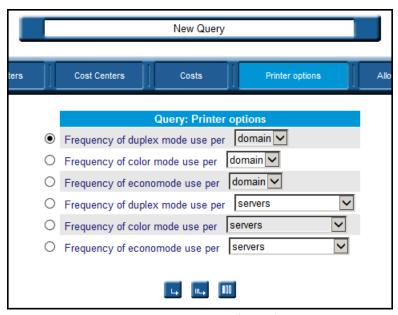
Job type summary grouped by user

Provides a detailed table of use information for each user, including: user name, number of color printed pages, number of b/w printed pages, number of color copied pages, number of b/w copied pages, number of faxed pages, and number of scanned pages.

12.11.2.1.5 Printer options

The queries for this theme enable you to get information on the use frequency of printer options: color, duplex, and Economode.

Figure 12-80 Query printer options



Frequency of duplex mode use per domain/group/user

Charts the percentage of sheets printed in duplex mode compared with the number of simplex-printed pages per domain, group, or user. By default, all users of all domains since HP AC Job Accounting installation are considered.

Frequency of color mode use per domain/group/user

Charts the percentage per domain, group, or user of sheets printed in color mode compared with the number of pages printed in black and white. By default, all users of all domains since HP AC Job Accounting installation are considered.

Frequency of Economode use per domain/group/user

Charts the percentage per domain, group, or user of sheets printed in Economode compared with the number of pages printed in normal mode. By default, all users of all domains since HP AC Job Accounting installation are considered.

Frequency of duplex mode use per server/printer queue/printer model/ device/serial number

Charts the percentage per server, printer queue, printer model, device, or serial number of sheets printed in duplex mode compared with the number of simplex-printed pages. By default, all printers used since HP AC Job Accounting installation are considered.

Frequency of color mode use per server/printer queue/printer model/device/ serial number

Charts the percentage per server, printer queue, printer model, device, or serial number of sheets printed in color mode compared with the number of pages printed in black and white. By default, all printers used since HP AC Job Accounting installation are considered.

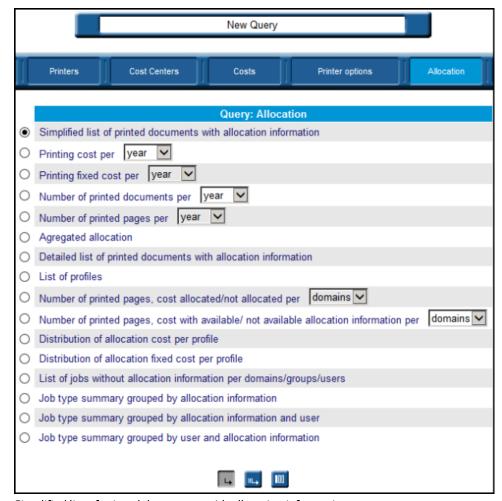
Frequency of Economode use per server/printer queue/printer model/device/ serial number

Charts the percentage per server, printer queue, printer model, device, or serial number, of sheets printed in Economode compared with the number of pages printed in normal mode. By default, all printers used since HP AC Job Accounting installation are considered.

12.11.2.1.6 Allocation

The queries for this theme enable information to be gathered on allocation capability. For instance, you will have the ability to research using various criteria such as the allocation profile and the time period.

Figure 12-81 Ouerv allocation



Simplified list of printed documents with allocation information

Lists all printed documents having a link with an allocation profile.

This query provides a simplified result with information such as the field values of the allocation profile, the domain, the user, and the number of printed pages. Before launching your request, select a profile.

Detailed list of printed documents with allocation information

Lists all printed documents having a link with an allocation profile. This query provides a detailed result with information such as the field values of the allocation profile, the domain, the user, the number of printed pages, simplex/duplex pages, and the number of printed color pages. Before launching your request, select a profile.

Printing costs per year/month/day/hour

Provides graph and table with total of the real costs of all printed documents that have a link with an allocation profile. Before launching your request, select a profile.

Printing fixed costs per year/month/day/hour

Provides graph and table with total of the fixed costs of all the printed documents that have a link with an allocation profile. Before launching your request, select a profile.

Number of printed documents per year/month/day/hour

Provides graph and table illustrating the number of printed documents that have a link with an allocation profile. Before launching your request, select a profile.

Number of printed pages per year/month/day/hour

Provides graph and table illustrating the number of printed documents that have a link with an allocation profile. Before launching your request, select a profile.

Aggregated allocation

Lists all information included in the fields of a specific allocation profile. This guery provides a synthetic result regarding the printings related to a profile. Before launching your request, select a profile. This query allows you to generate statements on the selected allocation profile.

List of profiles

Lists all allocation profiles. This query provides a table with detailed descriptions of the fields of each allocation profile that has been used at least once.

Number of printed pages, cost allocated/not allocated/ per domains/groups/ users

Provides a table indicating billed printings versus non-billed printings, for all printings related to an allocation profile. It also provides detailed information on the user/group/domain, number of documents, number of pages, and real and fixed costs. This guery may allow you to check the correct use of the allocation module.

Number of printed pages, cost with available/not available allocation information per domains/groups/users

Provides a table indicating the printings with allocation information available versus the printings without allocation information available. It also provides detailed information on the user/group/ domain, number of documents, number of pages, and real and fixed costs. This guery may allow you to check the correct use of the allocation module.

Distribution of the allocation cost per profile

Graphs the percentage of the real costs in each profile. The result can also be displayed in a table with the total amount.

Distribution of the allocation fixed cost per profile

Graphs the percentage of the fixed costs in each profile. The result can also be displayed in a table with the total amount.

List of jobs without allocation information per domains/groups/users

Lists all printed documents without allocation information; all printed jobs that are not linked to an allocation profile.

This query provides a simplified result with information such as the domain, the user, and the number of printed pages.

This guery displays all jobs without allocation information.

Job type summary grouped by allocation information

Lists job types grouped by allocation information provided.

Job type summary grouped by allocation information and user

Lists job types grouped by allocation information and user information.

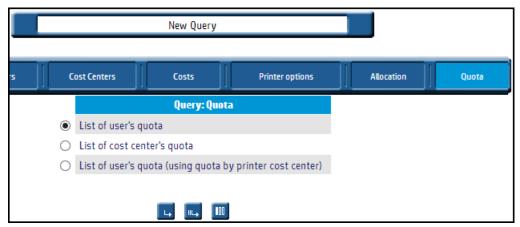
Job type summary grouped by user and allocation information

Lists job types grouped by user information and allocation information.

12.11.2.1.7 Quota

The queries for this theme enable information to be gathered on allocation capability. For instance, you will have the ability to research using various criteria such as the allocation profile and the time period.

Figure 12-82 Query quota



List of user's quota

Lists all values relative to each user.

List of cost center's quota

Lists all values relative to each cost center.

List of user's quota (using quota by printer cost center)

Lists all values relative to each user by printer cost center.

12.11.2.2 Launch a query

Launched gueries can be in one of these two modes: default or parameterized. When viewing the New Query page, note the three icons at the bottom of the page:

Figure 12-83 New Query page

Default mode. This icon enables direct query execution by taking into account the default parameters defined in each query. For more information, see the Default mode section below. Parameterized mode. This icon allows you to parameterize a query; to integrate parameters limiting the scope of your query or a schedule. For more information, see the Parameterize queries section below. Edit results. This icon enables selection of the parameters used to display the query results. For more information, see the Modify display parameters section below.

12.11.2.3 Default mode

With the Default mode icon, you will be able to launch a query immediately. This mode is mostly used for queries for which few resources (such as CPU or memory) are required, or for which an immediate result is necessary. The default mode will launch a guery with the default parameters. This means the printing date will be between 1/1/2000 and 12/31/2020, and it will run for all users, printers, and print servers.

This mode must be used for very simple queries such as "list of users," "list of printers," or "total number of pages printed by..." For complex queries, it is recommended to filter on a date range, a specific user, or a specific printer; and the parameterized mode must be used.

For more information on how to view your query results, see Section 12.12.4, Display results.

🔼 CAUTION: Some update processes are not synchronized to avoid penalizing printing times and servers therefore some results can have incomplete or erroneous data. Wait a short while and then run the query again, and your data should be corrected. By launching a query in this mode, you will take all default parameters into account. For more information on default parameters, see Section 12.11.3, Parameterize queries.

Use the following steps to perform a query using the Default mode:

- Select a guery.
- 2. Click the **Default mode** icon.

A progress message appears to verify that the guery is running. The guery table appears.

12.11.2.4 Parameterized mode

The Parameterized mode icon provides search parameters that focus the scope of returned information. You will also be able to schedule your guery so that its launch does not burden processors during peak hours (such as at night) or at regular periods (for example, daily or monthly). This mode allows you to benefit from synchronized information, using the most recent data available. It is also an advantage for queries that are complex or lengthy to perform, or that require a lot of CPU and memory resources.

For more information on query types, see Section 12.11.2, HP Access Control (HP AC) Job Accounting queries.

To perform a parameterized query, complete the following steps:

- Select a guery.
- Click the **Parameterized mode** icon.

Figure 12-84 Parameterized mode



12.11.2.5 Edit results

The various fields (parameters) in this page depend on the query launched. For more information on these parameters, see Section 12.11.3, Parameterize gueries.

The buttons along the top enable you to:

- Schedule your query by clicking Schedule. For more information, see Section 12.11.4, Schedule queries.
- Launch your query by clicking Go after having parameterized or scheduled your query. For more information, see Section 12.12.4, Display results.

12.11.3 Parameterize queries

This page lists parameters used to limit your search scope, to obtain a more precise result that is closer to your search objectives. If no parameters are defined, the guery will utilize default values.

⚠ CAUTION: If you use the default launching mode, only the default parameters will be considered. If no Start Date and Start time are specified, the data gueried encompasses all documents printed since HP AC Job Accounting installation. If no End Date and End Time are specified, the data queried encompasses all documents printed until the most recent date (the current date/hour).

The following rules apply to time periods:

- For the *year* unit, all months for the years specified in the Date fields.
- For the *month* unit, all weeks for the months specified in the Date fields.

- For the week unit, all days for the weeks specified in the Date fields.
- For the day unit, all days specified in the **Date** fields.

12.11.3.1 Name a query

Each user maintains a unique guery name in order to initiate gueries. By default, the guery name consists of the query theme followed by the _ symbol and the number of queries you have already launched.

12.11.3.2 Recipient email addresses

Transmitting query results to one or several recipients is accomplished by specifying email addresses or distribution lists of recipients.

Click in the field and enter an email address, or click the Recipient email address [10] icon to open the address book containing all predefined addresses and lists (see Section 12.5, HP AC Job Accounting administration). You can specify several addresses or lists, which will automatically be separated by a semicolon. This field may contain a maximum of 499 characters, symbols, and figures.

NOTE: Lists appear at the bottom of the pull-down menu, in the gray area. Individual addresses appear at the top of the pull-down menu, in the white area.

Error messages may appear for the Recipient email address field under the following conditions:

- No sender address defined: no sender address has been specified in the User options section. Any message must be identified by a sender.
- No mail server defined: no email server has been configured in the Email system section of the Administration menu, which means that no email message can be sent. This message only appears if you have administrator rights.

These errors do not prevent a query from being executed, but they highlight the fact that the results will not be sent.

12.11.3.3 Select the domain

This parameter enables you to select several users belonging to the same domain to query. Click the arrow to get the list of all domains from which documents have already been printed. If you select a particular domain, the End user field will automatically be filled with the names of all end users attached to this domain. By default, this includes all domains detected by HP AC Job Accounting.

12.11.3.4 Group

Since a domain may contain several groups, users can refer to any end user group attached to the same network. Click the arrow to get the list of all groups from which documents have already been printed. If you select a particular group, the End user field will automatically be filled with the names of all end users attached to the group. By default, all groups are included.

12.11.3.5 End user

Choose which particular end user to guery. If you select an end user, the domain to which the user is attached appears in the Domain/group fields. By default, all end users that have executed a print command since HP AC Job Accounting installation will be considered.

12.11.3.6 Document titles starting with...

Enables users to select documents whose title starts with a specified string. You can enter up to 64 characters, symbols, and figures. If this field is empty, the default returns all documents printed since the original HP AC Job Accounting installation.

12.11.3.7 Print server

Choose which HP AC Job Accounting Print Server (HP ACJA PRINT SERVER) you want to guery. By default, all print servers are included.

12.11.3.8 Printer queue

Choose a printer queue in the list provided by HP AC Job Accounting. A printer queue is a printer declared on a server using a specific port monitor or driver. A physical printer can be declared several times on the same server using different ports or drivers.

12.11.3.9 Set printer models

A printer model consists of all printers of the same model; for instance, all HP 4500 LaserJet printers. By default, all printer models are included.

12.11.3.10 Printer

Choose one printer to guery.

12.11.3.11 Date

The Date field enables you to specify a time interval during which documents were printed. This time interval is limited by precise start and end dates. Date is the default value for defining a time interval during which documents were printed.

12.11.3.12 Printing date from

This parameter enables you to define the start of a time interval—your query will only focus on the documents printed from the date and time defined in this field. The possible dates range from 01/01/2000 at 00:00:00 to 31/12/2020 at 23:59:59. The default date is the current date and time.

Parameterize gueries 103 of the database server. All documents printed since HP AC Job Accounting installation are taken into account.

12.11.3.13 To

This parameter enables you to define the end of a time interval—your query will only focus on the documents printed up to the date and time defined in this field. The date range is identical to the field Printing date from. The default date and time in this field are the current date at 23:59:59. All documents printed up to the current date are included.

12.11.3.14 Time lapse

This option enables you to collect data related to documents printed during a certain time interval. Date is the default value for defining a time interval during which documents were printed.

12.11.3.15 Printing for the last...

This option enables you to define a time interval in days, months or years, during which documents were printed. The last interval day is always the day, when you are launching your query. By default, all documents printed up to the current date are included. This parameter appears only if you select the Time Lapse parameter.

12.11.3.16 First n...

This option enables you to define the maximum number of a query parameter (such as user, printer, or printer) model). The default value in this field is 10. This parameter does not affect all gueries.

12.11.3.17 Number of printed pages

Sets a limit (greater than, less than, or equal) regarding the number of printed pages. By default, all documents printed since HP AC Job Accounting installation are included.

12.11.3.18 Printing cost

Sets a limit (greater than, less than, or equal) to the actual printing cost (not the fixed cost). By default, all documents printed since the HP AC Job Accounting installation are included.

 \triangle CAUTION: The decimal symbol is a period (.).

12.11.3.19 Currency

Enables you to choose your cost currency in the pull-down menu. The default currency is the currency defined in the user options. For more information on user options, see Section 12.10, HP AC Job Accounting user options.

12.11.4 Schedule gueries

From this page, you can perform the following actions:

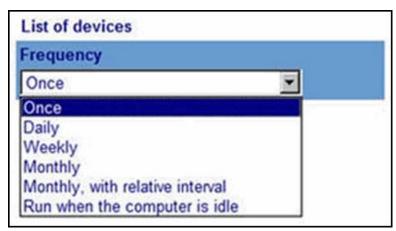
- Change the way you launch gueries to obtain more correct and precise results, by benefiting from all updates. These updates, for optimization and performance reasons, are not all executed in real time. You can also change the way gueries are launched so that you do not overload your server.
- Plan your guery so that it is launched regularly (such as every week or every month).
- You can reach the schedule page by clicking **Schedule**. The following prompt appears:

Figure 12-85 Schedule queries



The following page enables you to schedule your query in detail. The default frequency is **Once**. You can choose among the following frequencies:

Figure 12-86 Query frequencies



When choosing a particular frequency, new fields will appear on the page. The appearance of these fields depends on your selection.

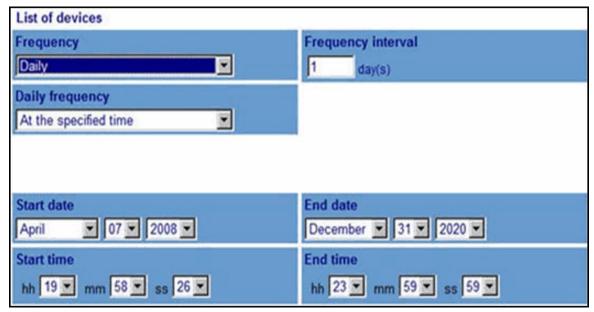
12.11.4.1 Once

Use this value to launch your query once, at a time specified by the **Start date** and **Start time** fields. By default, both fields are defined to the date and time on which you are launching your query. If the query is scheduled to be launched at a date and time before the current date (defined in the Start date and Start time fields), the query is immediately launched. The parameters are defined in the parameter page.

12.11.4.2 Daily

This guery will run once or several times a day, every day or at a regular interval, during a certain time interval as specified in the Start/End Date/Time fields.

Figure 12-87 Query frequency: daily



Frequency interval

Define the day interval—for example by entering 2 in this field, your query will run every 2 days. The default value in this field is 1, meaning that your query will run every day.

Daily frequency

Choose how often within one day the query will run. With the default option, at the specified time the query will be launched at the time defined in the Start time field. You can also choose to launch your query regularly every n minutes or hours.

Daily interval

Specify the actual minute or hour interval. This field only appears if you selected minutes or hours in the Daily frequency field. The default value is 1, meaning that your query will generate statistics every minute or every hour.

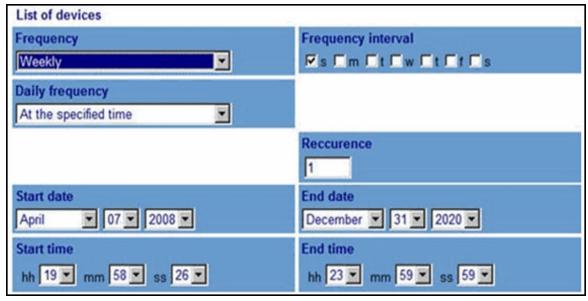
Start/End Date/Time

Specify the actual minute or hour interval. This field only appears if you selected minutes or hours in the Daily frequency field. The default value is 1, meaning that your query will generate statistics every minute or every hour.

12.11.4.3 Weekly

This query will run once or several times a day, on one or several days, during one or several weeks.

Figure 12-88 Query frequency: weekly



Daily frequency

Choose how often within one day the query will run. With the default option, the query will be launched at the time defined in the Start time field. You can also choose to launch your query regularly every n minutes or hours.

Daily interval

Specify the minute or hour interval. This field only appears if you selected minutes or hours in the Daily frequency field. The default value is 1, meaning that your query will generate statistics every minute or every hour.

Recurrence

Define the number of weeks between each query launch. The default value is 1, which means that your query will generate statistics every week. To generate statistics every 2 weeks, for example, enter 2 in this field.

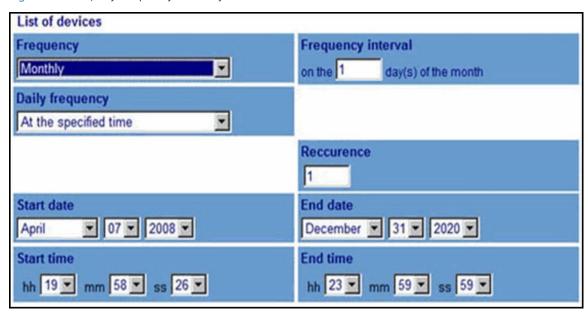
Start/End Date/Time

Define the date and time the query will start and end. By default, Start date is the current date and Start time is the current time. When no End date is specified, the guery will generate statistics until 31/12/2020 at 23:59:59.

12.11.4.4 Monthly

This setting will schedule a query to run once or several times a day, on one day, during one or several months.

Figure 12-89 Query frequency: monthly



Frequency interval

Select the day of the month when the query is launched. The default value is 1, meaning that your query will run on the first day of every month.

Daily frequency

Choose how often within one day the query will run. With the default option, at the specified time the query will be launched at the time defined in the Start time field. You can also choose to launch your query regularly every n minutes or hours.

Daily interval

Specify the actual minute or hour interval. This field only appears if you selected minutes or hours in the Daily frequency field. The default value is 1, meaning that your query will generate statistics every minute or every hour.

Recurrence

Define the number of months between each launching of your query. The default value is 1, which means that your query will generate statistics every month. To generate statistics every 2 months, for example, enter 2 in this field.

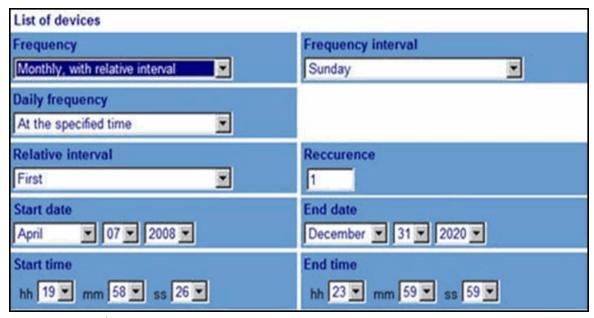
Start/End Date/Time

Define the lapse time (date and time) during which the query is launched. By default, Start date is the current date and Start time is the current time. When no End date is specified, the query will generate statistics until 31/12/2020 at 23:59:59.

12.11.4.5 Monthly with relative interval

This setting is the same as the monthly frequency, except you can specify an actual day for the guery to run.

Figure 12-90 Query frequency: monthly, with relative interval



Frequency interval

Select one day (such as Monday or Friday). You can also select the Day, Weekday, or Weekend day options.

Relative interval

Choose the week of the month; such as the first week.

Daily frequency

Choose how often within one day the guery will run. With the default option, at the specified time the guery will be launched at the time defined in the Start time field. You can also choose to launch your guery regularly every n minutes or hours.

Daily interval

Specify the minute or hour interval. This field only appears if you selected minutes or hours in the Daily frequency field. The default value is 1, meaning that your query will generate statistics every minute or every hour.

Recurrence

Define the number of months between each launching of your query. The default value is 1, which means that your guery will generate statistics every month. To generate statistics every 2 months, for example, enter 2 in this field.

Start/End Date/Time

Define the lapse time (date and time) during which the query is launched. By default, Start date is the current date and Start time is the current time. When no End date is specified, the query will generate statistics until 31/12/2020 at 23:59:59.

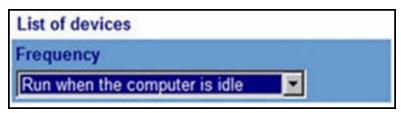
12.11.4.6 Run when idle

When utilizing this process, queries are launched when no other processes are being performed on the database server—such as during off hours.



NOTE: This mode is valid only if SQL Server Agent is used. This query frequency helps you manage statistical reports requiring a lot of information.

Figure 12-91 Query frequency: run when computer dies



12.11.4.7 Modify display parameters

Before launching a query, you can get the list of all information returned by your query. You can also hide some of this information, such as the columns of the tables in which your results are displayed.

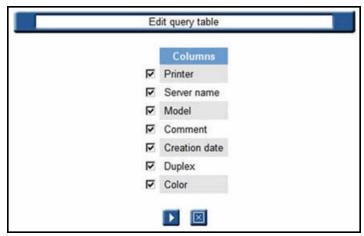
NOTE:

- This function only affects your results display, not the parameters used to obtain these results.
- Although this function is available for all display types (tables, spreadsheets, diagrams) it is not very useful when applied to diagrams (pie charts, line charts, columns).

In the **Queries in Progress** page:

- Select the query to modify.
- Click the **Edit results** icon of the selected query. The information returned by this query appears:

Figure 12-92 Edit guery table



By default, all information elements are selected. Click the box in front of any elements you want to hide to unselect it. You can unselect multiple elements. Click the Go [12] icon to accept the selections, or the Cancel

icon to stop the operation. When this query is subsequently launched, the results will be displayed without including the deselected columns.

12.12 Query results

After a guery is launched, the statistics related to that guery are pulled from the database. The information is retrieved and transmitted back to the HP AC Job Accounting administrator or user in various display formats (such as a chart, table, or spreadsheet) available for each guery.

The statistical reports generated by launching queries are referred to as "results." Each query result, whatever its format, contains:

- The guery name
- The date and time the guery was launched
- **Parameters**
- The number of pages if the spreadsheet or table contains more than one page

The level of detail you will obtain in your query results depends on the printers managed by HP AC Job Accounting, particularly on the printer model, its sophistication level, and the communication language (PCL 5, 5e. 6).

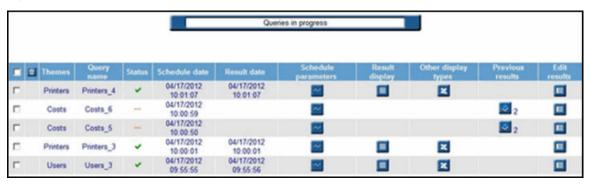
You can modify the display of your guery results by hiding some parameters. For more information, see Section 12.11.4.7, Modify display parameters.

You can also change the number of lines displayed in your lists. For more information, see Section 12.10, HP AC Job Accounting user options.

12.12.1 Query table

To obtain the list of the queries you launched or queries in progress and access their results, click **Queries in** progress in the HP AC Job Accounting remote control. All launched gueries are displayed in a table containing several columns:

Figure 12-93 Queries in progress



NOTE: You can only view gueries attached to your HP AC Job Accounting account.

This table lists the type, status, and schedule of your queries, the date and time when they were launched, the date and time when the result was obtained, and various ways to display their results.

The date format in the charts and in the guery table is the format defined in your regional settings. To modify this format, see Section 12.10, HP AC Job Accounting user options.

You can sort the **Themes**, **Query name**, and **Status columns** in alphabetical order by clicking the column title. You can also sort the schedule and result dates by ascending or descending order.

12.12.2 Query status

The **Status** column displays the status of your queries. The possible status results follow:

Figure 12-94 Query status — possible results



The query has been successfully run. Recurring queries with one successfully generated result, but which can generate further results, will have this status.



The query is currently being processed. Click Queries in progress in the remote control to update the results.



The guery is planned, but has not yet been performed.



The query has been aborted (error).

12.12.3 Viewing schedule parameters

By keeping your mouse cursor on the Modify 💹 icon, all details related to your query schedule and the **Schedule Parameters** page appears and offers the following options:

- The name you gave to the query (or its default name).
- All details concerning its schedule frequency, such as if it is launched only once or regularly, how often, and for how long. If the **Once frequency** appears in these details without any other parameter, it means that no schedule is specified for this query.

To modify the query parameters or schedule, see Section 12.12.5.2, Modify parameters.

12.12.4 Display results

You can display your results by clicking on one icon in the **Result display** or **Other display types** columns.

These columns are part of the query table, which you access by clicking the Queries in progress icon in the HP AC Job Accounting remote control.

Using the icons in these columns, you will be able to display your results in a table or a spreadsheet. To display your results in a spreadsheet or a chart, Excel must be installed on your machine. When sending results by email, only the results in the spreadsheet format are sent. Your results recipients should have Excel installed on their machine.



NOTE: If Microsoft Excel is not installed on the system, the icon will not appear.

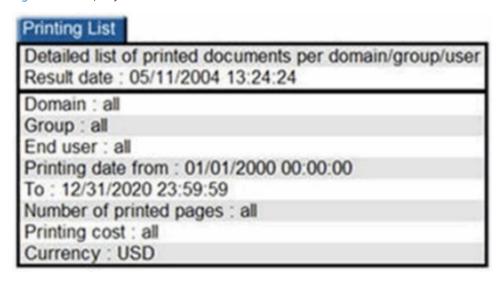
12.12.4.1 Information provided

All display types provide you with the following information:

- the name and type of the guery
- the date, when the query result was generated
- the parameters (including the printing time range)

This information is listed as in the frame below:

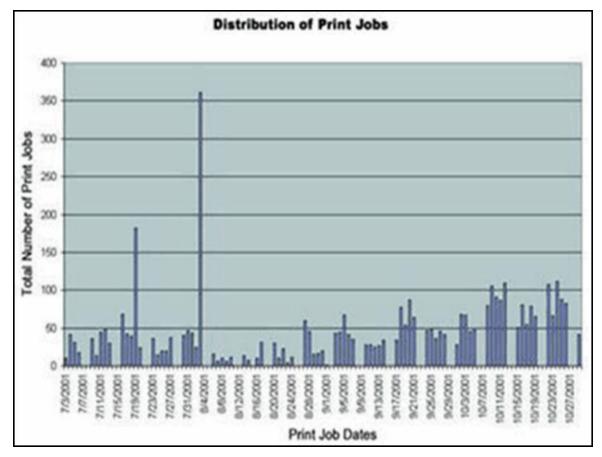
Figure 12-95 Query information



12.12.5 Display types

Click one icon in the **Result** display and **Other** display types columns to display your results. Each icon corresponds to a specific display type (such as table, graph, or spreadsheet). The various display types follow:

Figure 12-96 Chart display



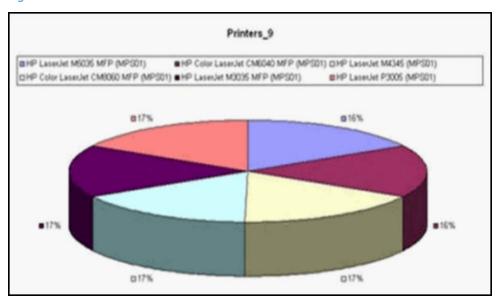
The task bar at the top of the page allows you to choose another chart to display your results. Click directly on the display desired, and it will automatically change.

Figure 12-97 Chart display task bar



Click the **Pie chart** icon to present information in a traditional pie chart, as shown in the figure below:

Figure 12-98 Pie chart



The task bar at the top of the page allows you to choose another type of pie chart to display results. Click directly on the display desired and it will automatically change.

Figure 12-99 Pie chart task bar



Click the Table chart icon to present the information in a table.

Figure 12-100 Table chart

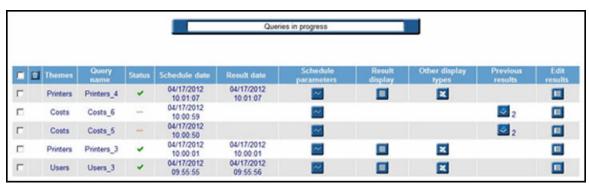
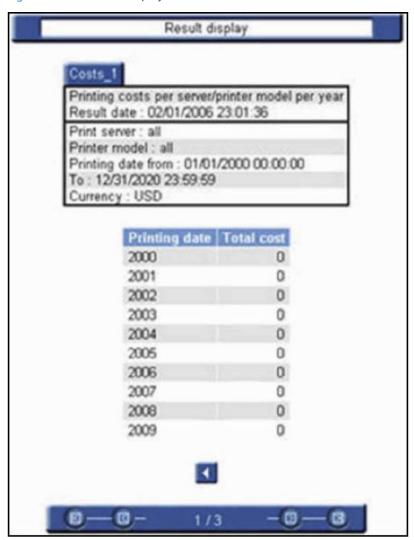


Figure 12-101 Result display



You can modify the number of lines displayed in a table in your User options. For more information on how to modify this number, see Section 12.10, HP AC Job Accounting user options.

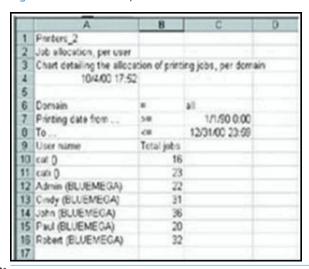
NOTE:

- If **Copy job** appears in the **Document name** column, the job is a copy job, not a print job.
- The Pull Printing column allows administrator to view the type of print job (e.g if it went via a pull print queue or if it went via a direct print queue).

nment	Location	Estimated black pixels	Estimated yellow pixels	Estimated magenta pixels	Estimated cyan pixels	Pull printing
	-	0	0	0	0	1
-	-	0	0	0	0	1
-	Unspecified	0	0	0	0	0

Clicking the Excel icon formats the information into a standard Microsoft Excel spreadsheet. This is the only option that allows you to save your query results. To save, use the **Save As** command in Excel.

Figure 12-102 Excel spreadsheet



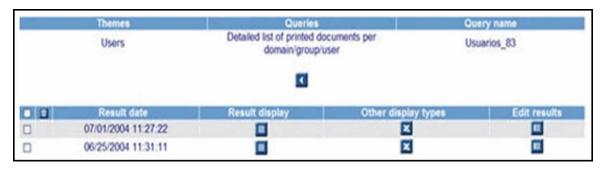
NOTE: To view your results in a spreadsheet, Excel must be installed on your computer.

☆ TIP: You may have to resize some columns to view the complete contents of a cell, such as when ####### appears in a cell.

Clicking the Query results icon lists all results generated by a recurring query. The number next to this icon represents the number of results generated by this recurring query.

When clicking this icon, a new list containing all results and display icons for this query appears, as shown in the figure below:

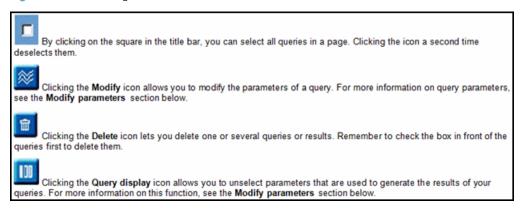
Figure 12-103 Query results



12.12.5.1 Manage results

By clicking the **Query in progress** icon in the HP AC Job Accounting remote control, you reach the query table. This table contains the same icons as any HP AC Job Accounting lists.

Figure 12-104 Manage results

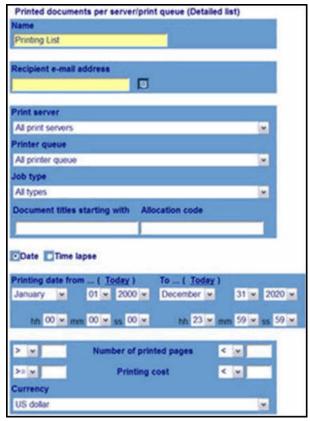


12.12.5.2 Modify parameters

Launching parameters can be modified. This function will be used by recurring queries for which you want to modify or stop the launching mode. The only parameter you cannot change is the query name.

Click the **Modify** icon for this guery to bring up the parameters page, as shown in the figure below:

Figure 12-105 Modify query parameters



All parameters (default or defined) appear. For more information on parameters, see Section 12.11.3, Parameterize gueries.

Modify your parameters as desired. Click **Schedule** to modify your schedule parameters.

For more information on scheduling your query, see Section 12.11.4, Schedule queries

Click the Go [12] icon to launch your query with its new parameters or schedule. You directly reach the query table.

Your new parameters take effect even though the query name stays the same.

12.12.5.3 Modify the display

When you view your query results, you may decide some information is not relevant. You can deselect this information by checking the box in front of a query result in the query table and then clicking the Query display icon. The list of the display columns appears. By default, all columns are selected.

Uncheck the box in front of the parameter to remove it, then click the Go \text{ } icon to accept your choice. You directly reach the guery table.

Unlike the result modification available from the **New query** page as described in Section 12.11.4.7, Modify display parameters, this modification only applies to the selected result. In the case of a recurring query, all results of this query are modified.

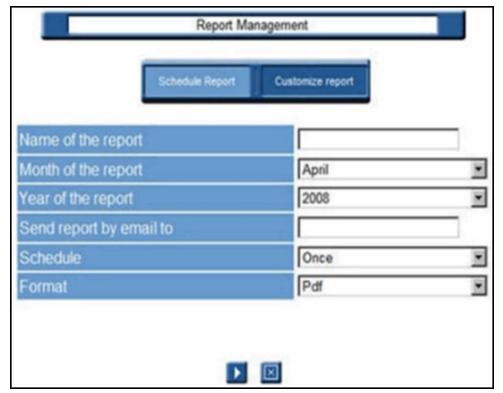
A CAUTION: You can only modify the results of one query at a time.

12.13 Report management

12.13.1 Report management page

Click **Summary Report** on the HP AC Job Accounting remote control to access the Report Management page:

Figure 12-106 Report management screen



Through the **Report Management** page, you can quickly generate comprehensive, all-encompassing reports to illustrate print usage. Since reports have only a few, basic settings, they are much more convenient and easier to run than full gueries. Reports can be manually run at any time, or can be scheduled to occur either weekly or monthly.

After a report has been requested and compiled, it can be saved in Adobe Acrobat (PDF), Microsoft Excel (.xls), or Microsoft Word (.doc) format and can be automatically forwarded through email to a designated individual.

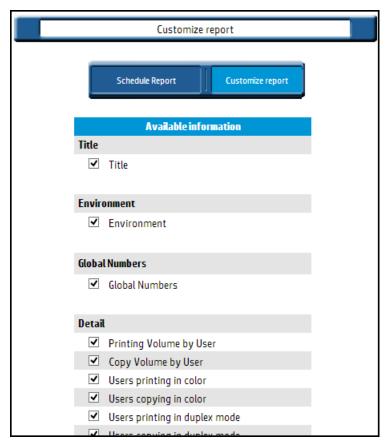
12.13.1.1 Create a report

To create a report:

- In the field Name of the report, enter the name you wish to appear on the title page of the report.
- Choose a month from the **Month of the report** drop-down menu.
- NOTE: Reports contain data from a three-month period ending on the requested month.
- Select a year from the **Year of the report** drop-down menu.
- If you wish to forward a copy of the report to someone automatically, enter their email address in the **Send** report by email to field.
- Schedule the report. Choose an option from the drop-down list:

- **Once** The report will be generated only once, when validated (Step 7).
- Weekly The report will be generated weekly, according to the Day and Start time parameters selected before validation.
- Monthly The report will be generated monthly, according to the Day and Start time parameters selected before validation.
- Format the report. Choose an option from the drop-down list.
 - PDF The report will be generated in a format compatible for reading with Adobe Acrobat Reader.
 - **Excel -** The report will be generated as a Microsoft Excel spreadsheet.
 - **Word -** The report will be generated as a Microsoft Word document.
- 7. Click **validate** to generate the report.
- Schedule a report. If you choose the Weekly or Monthly option, click Schedule Report after setting schedule parameters.
- 9. Customize a report. Click **Customize Report** to set specific parameters for your report.

Figure 12-107 Customize report



The amount of time it takes to generate the report depends on the number of jobs printed over the three-month period. If you wish reports to run automatically in the future, select either Weekly or Monthly from the Schedule drop-down list.

After the report is generated, a link appears on the page.

Figure 12-108 View report link



Click the link to view and print the report using Adobe Acrobat (.pdf), Microsoft Word (.doc), or Microsoft Excel (.xls); or right-click the link and save the report to a location of your choosing.

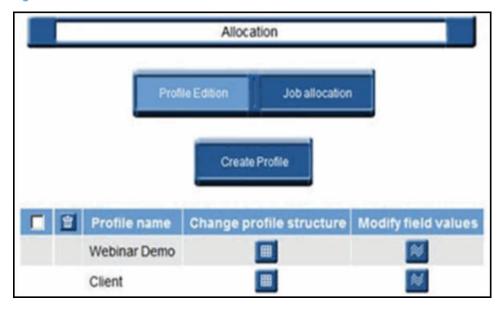


NOTE: Each new report is saved to the same location with the same name. If you wish to keep a report, save the file to another location before requesting a new report.

12.14 Allocation

The allocation feature allows additional information to be linked to print jobs. This can be useful for determining billing and expenses.

Figure 12-109 Allocation screen

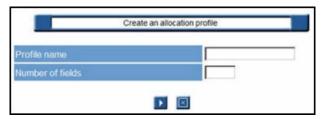


12.14.1 Create allocation profiles

Use the following steps to create an allocation profile:

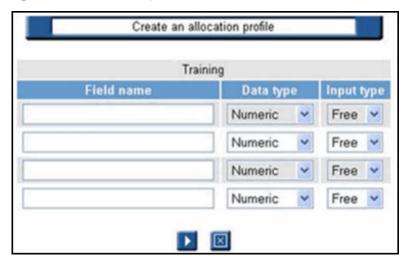
From the Allocation page, click Create Profile.

Figure 12-110 Create allocation profile



- Name the profile you want to create. Be aware that all profiles must have unique titles; two profiles cannot share the same name.
- Enter number of fields you want to attach to the profile. This number must be less than or equal to 5. 3.
- 4. Click the Go icon to accept the information, or the Cancel icon to stop the operation.

Figure 12-111 Allocation profile information



Give a name to the fields of the profile and specify their data type and their input type.

Possible data types:

- Numeric
- Text
- Date (day/month/year or month/day/year)
- True/False

Possible input types:

- Free (free input in the field when the popup window appears)
- List (predefined list of values)
- Fixed (a value can be fixed by default)

- NOTE: The names of the fields must be different. You cannot choose the input type for Boolean.
- 6. Click the Go 🚺 icon to accept the information, or the Cancel 🔯 icon to stop the operation.

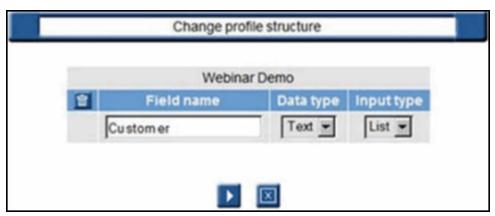
12.14.2 Modify profile structure

You can change the structure of an allocation profile only if it has not been linked to a printed job. Otherwise, the structure cannot be modified.

To edit a profile, select any of the following:

Click Change profile structure:

Figure 12-112 Change profile structure



Change the Field name, Data type, or Input type of a profile

You can modify a Field name, the Data type, or the Input type.

- Delete one or more fields in a profile
 - If no job is linked to the allocation profile, you can delete one or more fields.
- 1. Click the **change profile structure** icon.
- 2. Select the field you want to delete, then click the Delete 🔯 icon

Figure 12-113 Verify delete fields



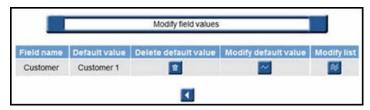
3. Click the Go icon to accept the deletion, or the Cancel icon to stop the operation.

12.14.3 Modify field values

In this section we will assign a default value in the fields of a profile.

- Click **Allocation** on the HP AC Job Accounting remote control.
- 2. Click Modify field values.

Figure 12-114 Modify field value

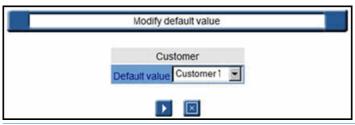


12.14.4 Modify default value

Complete the following steps to modify default values:

Click **Modify default value** to assign a default value.

Figure 12-115 Modify default value



- NOTE: The appearance of this window may vary according to the input type you previously defined in the field (Free, List, or Fixed).
- Select your default value and validate. The selected default value will be displayed in the **Default value** column.
 - NOTE: The default value is the value that is displayed first when the popup window appears.
- If you need to remove the default value, click the Delete 🔀 icon to delete it.

12.14.5 Modify list

NOTE: You can access this menu only if you have a field with a List as input type.

Use the following steps to create or modify a list of values:

Click **Modify list**:

Figure 12-116 Modify list



- Enter the value you want to add to your list in the **New value** field and click **Add value** to validate.
- 3. To delete a value, select one or more and then click the Delete 🛅 icon.
- NOTE: The names of the values must be different.

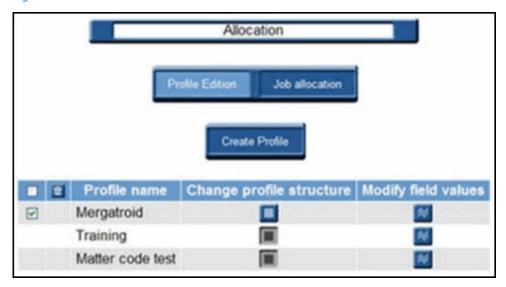
12.14.6 Delete allocation profiles

NOTE: You can delete an allocation profile only if no job is linked to this profile.

Use the following steps to delete an allocation profile:

Click **Allocation** on the HP AC Job Accounting remote control.

Figure 12-117 Select Allocation to delete



- Select the profile you want to delete. 2.
- Click the Delete icon. 3.

Figure 12-118 Verify delete allocation



Click the Go icon to accept the deletion, or the Cancel icon to stop the operation.

12.14.7 Link a job to an allocation profile

It is also possible to display the list of the printed jobs with or without allocation information and then link them to a specific profile, as described below:

- Click **Allocation** in the HP AC Job Accounting remote control. 1.
- Click Job Allocation.

Figure 12-119 Job allocation



From this screen, you can use the following filters:

- User (Windows login)
- Document name
- Profile name
- Print server
- Printer
- Allocated (Billed) job (Indifferent/Yes/No)
- Allocation information (Indifferent/Yes/No)

In addition, you can specify a date range when the related jobs were printed. The resulting list of printed jobs can then be linked to an allocation profile after the following page appears:

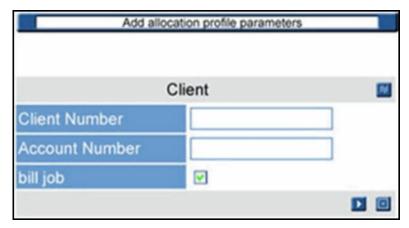
Figure 12-120 Result display, allocation



The above example shows a job that is not billed and not linked to an allocation profile. To link this job to an allocation profile, use the following steps:

Click the **Link profile** icon.

Figure 12-121 Add allocation profile parameters



You can use the current profile or choose another one by clicking the Modify **2.** icon

Figure 12-122 Allocation profile



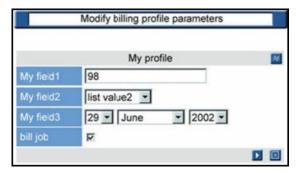
Choose ONE of the available profiles:

- Click the Go icon to accept the profile, or the Cancel icon to stop the operation.
- Enter the field values for the selected profile.
- Click the Go icon to accept again.
- The job is now linked to an allocation profile.

12.14.8 Modify allocation information

- NOTE: After a job is linked to a profile, you cannot remove this link. However, changes can be applied to the field values that make up the profile.
 - 1. Search for the job requiring field value changes.
 - 2. Click the Modify icon to modify the field.

Figure 12-123 Modify allocation information



- Keep the current profile or choose another profile.
- 4. Change the field values accordingly.
- Click the Go icon to accept the modification, or the Cancel icon to stop the operation.

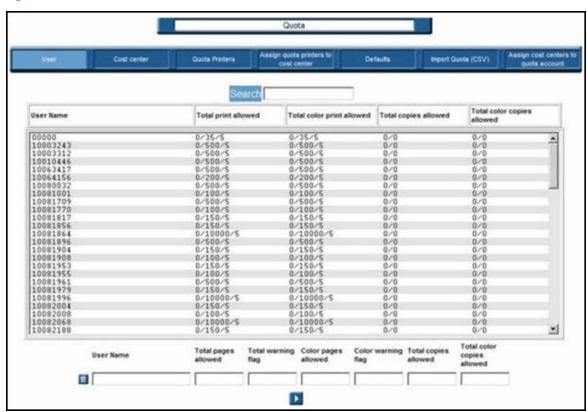
12.15 Quota module

NOTE: Quota is not supported on USB connected devices.

This optional HP AC Job Accounting feature allows the administrator to set limits on how much each user is permitted to print, copy, or digitally send. A customizable warning message will automatically notify the user as they approach their quota limit. After a user has exceeded their limit, any additional jobs are automatically deleted. Quotas can be automatically renewed after a specified time period has elapsed.

To access the Quota Module, click **Quota** in the HP AC Job Accounting tab.

Figure 12-124 Quota module



The default **Quota** screen is the User screen, which provides the following information:

- 1. Specific user names
- Total number of pages the user is allowed to print/copy/digitally send 2.
- 3. Total number of pages the user has printed/copied/digitally sent so far
- Total number of pages remaining for the user 4.
- Total number of pages remaining before the user is notified with a warning that they are approaching their printing limit
- Number of color pages the user is allowed to print/copy/digitally send

- Number of color pages the user has printed/copied/digitally sent so far
- 8. Number of color pages remaining for the user
- Number of color pages remaining before the user is notified with a warning that they are approaching their 9. limit of available color pages

12.15.1 Ouota defaults

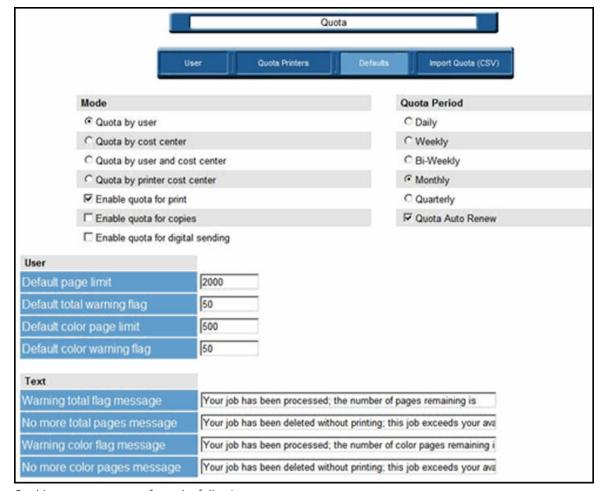
Default quota values are automatically assigned as users are added to the Quota table. After the default quota is assigned to a user, it can easily be modified later as needed.

To access the Quota Defaults screen, click **Defaults** in the menu bar at the top of the Quota page.

The duration of the quota period can be Daily, Weekly, Biweekly, Monthly, or Quarterly. After the specified duration has lapsed, Quota Auto Review can be checked to instruct HP AC Job Accounting to renew a user's quota automatically upon completion of the specified time period.

⚠ CAUTION: Make sure the Quota Auto Review option is checked. If left unchecked, the user will still be unable to print after the quota period has ended.

Figure 12-125 Quota defaults



On this page, you can perform the following:

Quota mode

- Quota by user
- Quota by cost center
- Quota by user and cost center
- Quota by printer cost center
- Enable quota for print
- Enable quota for copies
- Enable guota for digital sending

User functions

- Set a **Default page limit** (the maximum number of total pages the user can print/copy/digitally send)
- Set a **Default total warning flag** (total number of pages before quota is reached)
- Set a **Default color page limit** (the maximum number of color pages the user can print/copy/ digitally send)
- Set a **Default color warning flag** (number of color pages before guota is reached)

Cost center functions

- Set a **Default page limit** (the maximum number of total pages the cost center can print/copy/ digitally send)
- Set a **Default total warning flag** (total number of pages before quota is reached)
- Set a **Default color page limit** (the maximum number of color pages the cost center can print/ copy/digitally send)
- Set a **Default color warning flag** (number of color pages before guota is reached)

Printer cost center functions

- Set a **Default page limit** (the maximum number of total pages the cost center can print/copy/ digitally send)
- Set a **Default total warning flag** (total number of page before quota is reached)
- Set a **Default color page limit** (the maximum number of color pages the cost center can print/ copy/digitally send)
- Set a **Default color warning flag** (number of color pages before quota is reached)

Text functions

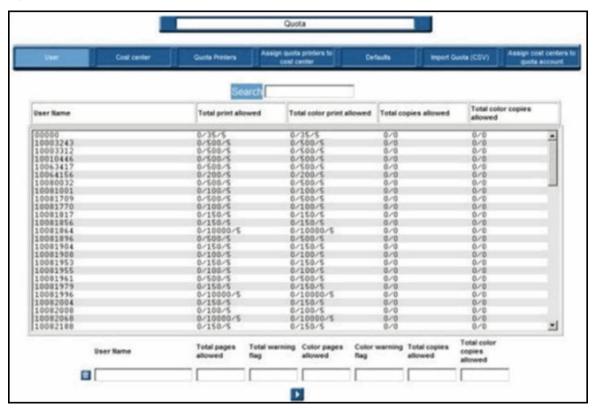
- Create a custom Warning total flag message (message the user receives when they are approaching their quota for the total number of printed pages)
- Create a custom **No more total pages message** (message the user receives after their quota has been reached for the total number of printed pages)
- Create a custom Warning color flag message (message the user receives when they are approaching their guota for the number of printed color pages)
- Create a custom No more color pages message (message the user receives after their color page quota has been reached for the number of printed color pages)
- NOTE: Users must have Messenger service enabled to receive quota messages. Messenger service is not available on Vista—quota will work, but the end-user will not be notified.

12.15.2 Quota user

The first time a user sends a job to a printer with a quota assigned, they are automatically added to the table using default values. In addition to providing basic information, the User page can also be used to alter quota settings on a case-by-case basis.

To access the User page, click **User** in the menu bar at the top of the Quota page.

Figure 12-126 Quota user



Fields provided:

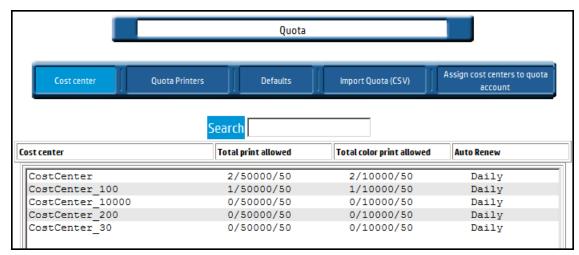
- Specific user names
- Total number of pages the user is allowed to print/copy/digitally send
- Total number of pages the user has printed/copied/digitally sent so far
- Total number of pages remaining for the user
- Total number of pages remaining before the user is notified with a warning that they are approaching their printing limit
- Number of color pages the user is allowed to print/copy/digitally send
- Number of color pages the user has printed/copied/digitally sent so far
- Number of color pages remaining for the user
- Number of color pages remaining before the user is notified with a warning that they are approaching their limit of available color pages

The selected user can be removed from the guota list by clicking **Delete**.

12.15.3 Quota cost center

To access the Quota Cost Center page, click **Cost Center** in the menu bar at the top of the Quota page.

Figure 12-127 Quota cost center



Fields provided:

- Specific Cost Center names
- Total number of pages the cost center is allowed to print/copy/digitally send
- Total number of pages the cost center has printed/copied/digitally sent so far
- Total number of pages remaining for the cost center
- Total number of pages remaining before the cost center is notified with a warning that they are approaching their printing limit
- Number of color pages the cost center is allowed to print/copy/digitally send
- Number of color pages the cost center has printed/copied/digitally sent so far
- Number of color pages remaining for the cost center
- Number of color pages remaining before the cost center is notified with a warning that they are approaching their limit of available color pages

12.15.4 Quota printers

To access this feature, click **Printers** in the menu bar at the top of the Quota page.

Figure 12-128 Quota printers



To designate an HP AC Job Accounting Printer as a Quota Printer, select the HP AC Job Accounting Printer in the left screen and click the Move right icon to move it to the right screen.

This is used only for printers with the HP AC Agent authentication solution, when Quota for copy/digital sending is enabled.

When quota control is done using HP AC Job Accounting Print Server, the quota printer is automatically added to the quota list when Quota is enabled and the web service has been configured properly.

12.15.5 Assign quota printers to cost center

To access this feature, click **Assign quota printers to cost center** in the menu bar at the top of the Quota page.

Figure 12-129 Assign to cost center



To assign cost centers to a quota printer, select the quota printer in the left screen, select the cost centers in the right screen, and then click **Assign**.



NOTE: This is used only when the mode **Quota by printer cost center** is selected.

In this mode, the user must be assigned to a cost center to be able to print. A printer can belong to multiple cost centers.

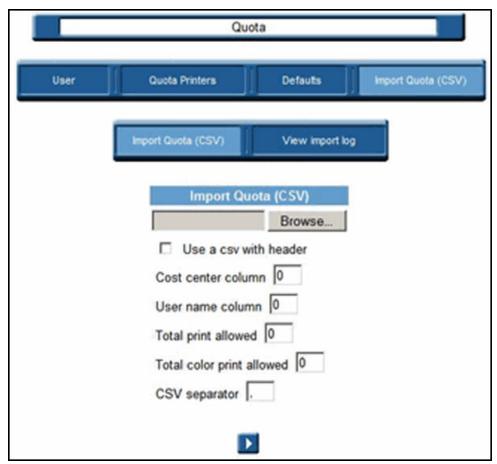
- If a user prints to a printer that belongs to the same cost center, the quota cost center will be used.
- If a user prints to a printer that does not belong to the same cost center, the default quota will be used.

Each cost center can have a different renewal period.

12.15.6 Import quota

To access this feature, click **Import Quota (CSV)** in the menu bar at the top of the Quota page.

Figure 12-130 Import quota



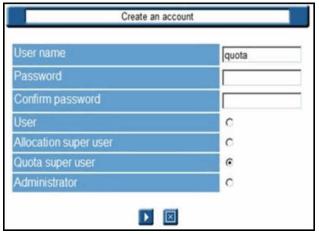
A CSV file containing the user name, cost center, quota values, and quota renewal can be imported into the database.

- 1. Browse to select the CSV file.
- 2. Assign the column number to the corresponding field.
- 3. If the CSV file does not contain the information, leave **0** as the value. Auto-renew values are:
 - 0: disabled
 - 1: Daily
 - 2: Weekly
 - 3: Monthly
 - 4: Quarterly
 - 5: Bi-weekly
- 4. Select the separator in the CSV file (the default is a comma).
- 5. Click **Import file** to import the CSV file.
- 6. Click **View Import log** to see a log of the import process.
- 7. Click the **Delete** icon to delete the log.

12.15.7 Assign cost centers to quota account

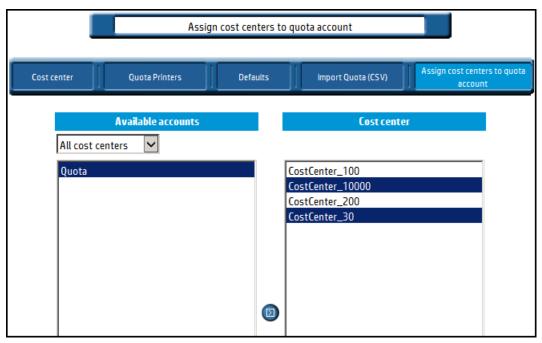
To access this feature, click **Assign cost centers to quota account** in the menu bar at the top of the Quota page. In the administration/account menu, you can create a **Quota super user** account.

Figure 12-131 Create an account



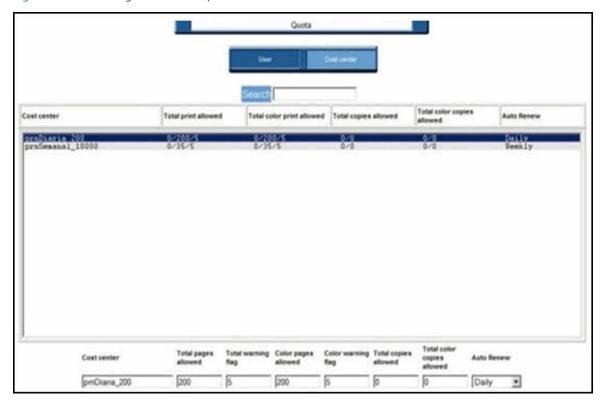
To assign cost centers to a Quota support user, select **Quota super user** in the left screen, select the cost centers in the right screen, and then click the **Assign** icon.

Figure 12-132 Assign cost center



When the quota user logs on to the application, they have the same rights as a regular HP AC Job Accounting user. The quota user also has access to the quota menu and can manage cost center quotas and the users belonging to these cost centers.

Figure 12-133 Manage cost center quotas

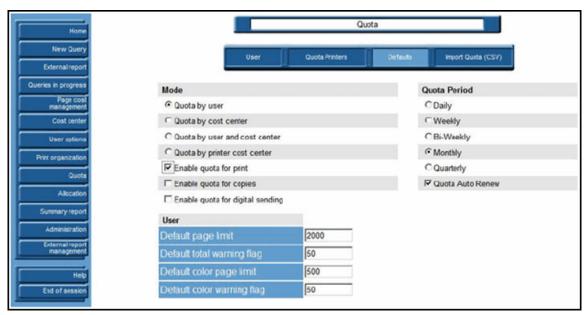


12.15.8 Configure quota for printing using print server

To configure quota for printing on a device using the print server, complete the following steps:

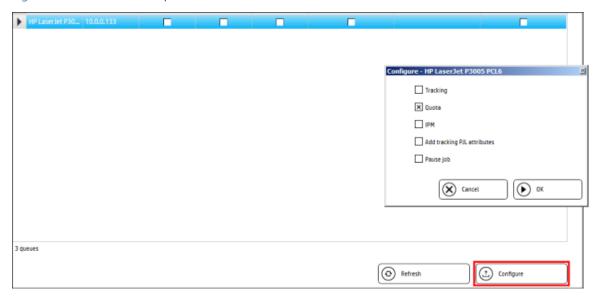
- Enable quota for print in HP AC Job Accounting.
 - In the HP AC Job Accounting Quota module, go to the **Defaults** page. a.
 - b. Click **Enable quota for print** checkbox.

Figure 12-134 Enable quota for print



Go to the Print server tile, select a device, then click **Configure**. In the Configure window, select **Tracking** and Quota. Click OK.

Figure 12-135 Print server quota



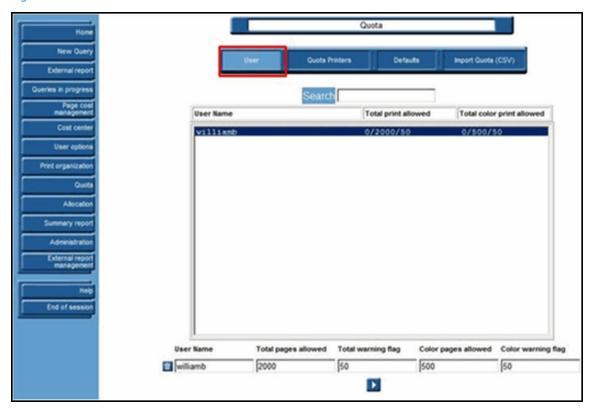
12.15.9 Adding new users to the quota control

The following sections include methods to add users to the quota control.

12.15.9.1 First print

A user is added to the quota control after the user sends his or her first print job to a device configured with quota. To view the user's name in the Quota User list, go to the HP AC Job Accounting Quota module and then click **User**.

Figure 12-136 User button

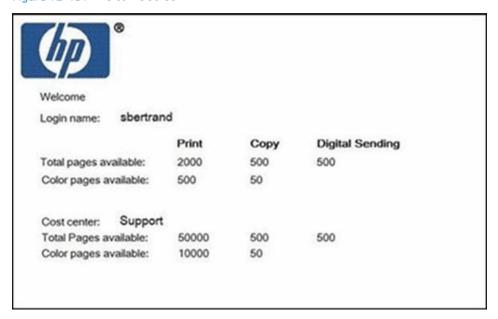


12.15.9.2 First access to the MyQuota

A user is added to the quota control after the user sends his or her first print job to a device configured with quota. To view the user's name in the Quota User list, go to the HP AC Job Accounting Quota module and then click User.

- Open a Web browser and enter the following in the address bar: 1. http://<servername>/myquota
- Where <servername> is the name of the server that has the HP AC Job Accounting quota web service installed.

Figure 12-137 Welcome screen



12.15.9.3 First install of Quota Client

A user is added to the quota control after the Quota Client is first installed on the user's desktop. You can install the Quota Client on the end-user desktop by running the "HP AC Job Accounting QuotaClient.msi" file from the following folder:

Program Files\HP\HP AC\client setup

Installation requires knowledge of the server name where the HP AC Job Accounting quota web service is installed.

The quota client will display a printer icon on the tray bar of the desktop that shows the quota limit for the user that is logged into the desktop.

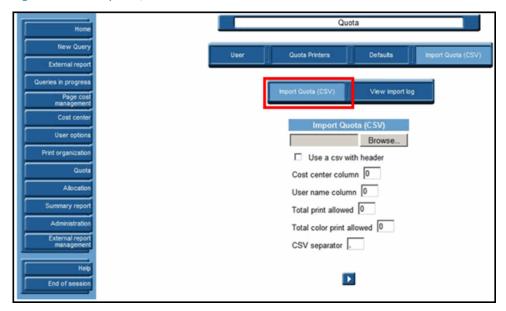
12.15.9.4 Import quota

You can also manually import users for quota control. Follow the steps below to import users.

Go to the HP AC Job Accounting Quota module.

Click Import Quota (CSV)

Figure 12-138 Import Quota



- 3. Click the **Browse** button to browse for and select the CSV file.
- 4. Click the **Use a csv with header** checkbox to accurately import a CSV file with a header.
- Enter the correct values in the following fields to determine the correct locations of information in the CSV file: Cost center column, User name column, Total print allowed, Total color print allowed, CSV separator.
- 6. Click the **Import file** button to import the CSV file.

12.15.10 End user notification

There are two options are available to notify the end user of their quota status:

- Quota client
- MyQuota website

12.16 Quota Client

You can install the Quota Client on the end-user desktop by running the "HP AC JOB ACCOUNTING QuotaClient.msi" file from the following folder:

Program Files\HP\HP AC\client setup

Installation requires knowledge of the server name where the HP AC Job Accounting quota web service is installed.

The quota client will display a printer icon on the tray bar of the desktop that shows the quota limit for the user that is logged into the desktop.

Figure 12-139 User quota limit



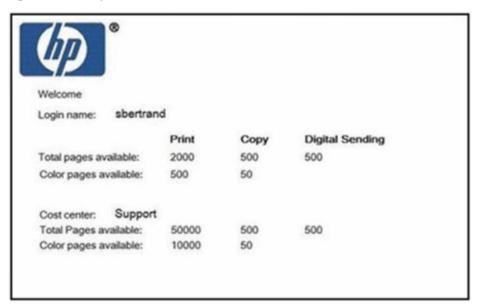
12.17 MyQuota website

End-users can access the MyQuota website to view their login's quota status. Open a Web browser and type the following in the address bar:

http://<servername>/myquota

Where <servername> is the name of the server that has the HP AC Job Accounting guota web service installed.

Figure 12-140 MyQuota web interface



12.18 Job Accounting Print Client

To track local printers connected to client desktops via USB, LPT1 or Standard TCP/IP port, install the Job Accounting Print Client. The Job Accounting Print Client is installed on client desktops where local print activity is tracked and then sent to the Job Accounting Database Server.

- Copy the HP AC Job Accounting Print Client application from the server (located in the Program Files\HP\HP Access Control\client setup folder) to the client desktop.
- 2. Run the HP AC Job Accounting Print Client application on the client desktop and follow the on-screen instructions.
- On the Setup Type screen, select one of the following configuration modes: 3.

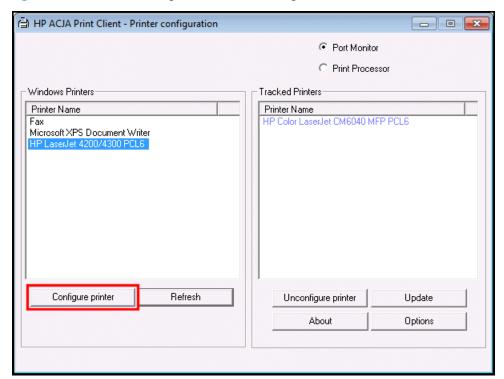
- Automatic using print processor configures all printers connected via USB.
- Automatic using port monitor configures all printers connected via Local Port or Standard TCP/IP Port.
- Manual configuration requires you to manually configure printers with Printer Configuration tool.

Click Next.

- On the Select Features screen, select Track Novell if you want to use the Novell protocol. Click Next.
- Select HTTP or FTP as the desired transfer protocol to upload print tracking data to the Job Accounting Database Server. Click **Next**.
- In the Server field, type the name or IP address of the Job Accounting server. Click Next. Click Finish.

If you selected Manual configuration during the HP AC Job Accounting Print Client installation, go to Start > All Programs > HP Access Control Job Accounting, then click Printer Configuration. In the Printer Configuration application, select installed printers from the Windows Printers list, then click Configure printer.

Figure 12-141 Job Accounting client — Printer configuration



Configured printers display in the Tracked Printers list on the right.

12.19 External reports

Select External report management on the Remote Control to set up the HP AC Job Accounting report server for external reporting functions. Use External Reporting to create and distribute reports with the following useful features:

- Schedule off-line execution of reports to minimize processing time.
- Maintain a history of executed reports (useful when existing data is changed frequently).
- NOTE: A working knowledge of SQL Reporting Services is required to use the External Reporting functions.

12.19.1 Report activities

The **External Reporting** process is comprised of three activities:

Report Authoring

The process of defining the report parameters, properties, style, and user interactivity.

Report Management

The administration of the published report.

Report Delivery

Delivering reports to end-users.

The actions required to set up the report server in HP AC Job Accounting are:

- 1. Set up and validate **Source**, **Model**, and **Report** folders.
- 2. Create and validate a data source.
- 3. Upload a model.
- 4. Assign a data source to the model and validate.
- 5. Upload a report.
- Assign a model to the report and validate.

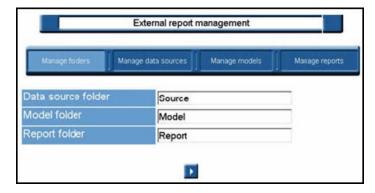
NOTE: The actions above must be performed in the listed sequence to correctly configure the report server.

12.19.2 External report management

Four management functions are available on the **External report management** screen:

- Manage folders
- Manage data sources
- Manage models
- Manage reports

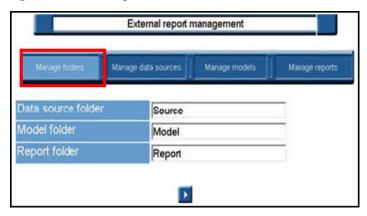
Figure 12-142 External report management



12.19.3 Manage folders

The fields for the Data source folder, Model folder, and Report folder must contain a name. Default names are provided during installation (Source, Model, Report). Type an alternative name, if desired, in any field and click the Go icon to save the change.

Figure 12-143 Manage folders button



12.19.4 Manage data sources

Use the **Manage data sources** screen to add or delete report data sources.

Figure 12-144 Manage data sources

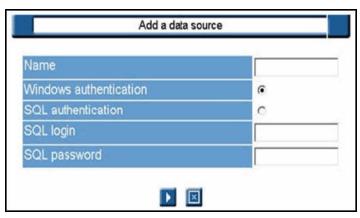


- To add a data source, click **Add a data source** button.
- To delete a data source, click the selection box and then click the Delete 🛜 icon.
- To return to the **External report management** screen, click the Back **T** icon.

12.19.5 Add a data source

Use the Add a data source page to create, view, and modify a shared data source item. A shared data source defines a connection to an external data source. With a shared data source, you can create and maintain the settings for the data source connection separately from the reports that use the data source.

Figure 12-145 Add a data source



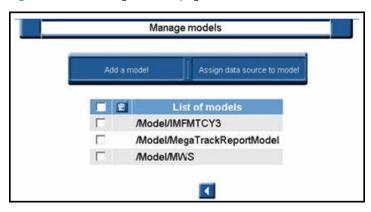
- Enter Name for the shared data source, which is used to identify the item within the report server namespace.
- Select Windows Authentication if the credentials that the user provides are Windows Authentication credentials.
- Select **SQL Authentication** if you are using SQL Server Authentication.

- Enter **SQL Login** information for SQL Server Authentication.
- Enter **SQL Password** information for SQL Server Authentication. 2.
- Click the Go icon to proceed, or the Cancel icon to quit. 3.

12.19.6 Manage models

Use the **Manage models** page to manage report models in the database.

Figure 12-146 Manage models page



Complete the following steps:

- Click Add a model to upload a .smdl model file.
- Select a model from the list displayed in the table and click **Assign data source to model**.

12.19.6.1 Add a model

Use the **Add a model** screen to upload a .smdl model file in the application.

Figure 12-147 Add a model

File to upload:		Browse
Name:		
	Date of the second seco	2-1112/00
	☐ Overwrite item i	f exists

Complete the following steps:

- Enter the name of the .smdl file to upload, or click **Browse** to locate the file.
- 2. Click **Overwrite item if exists** if the uploaded file will replace an existing file.
- Click the Go icon to validate the selection, or the Cancel icon to quit.

12.19.6.2 Delete a model

To delete a model, click the selection box and then click the Delete 🔲 icon.

12.19.6.3 Assign data source to model

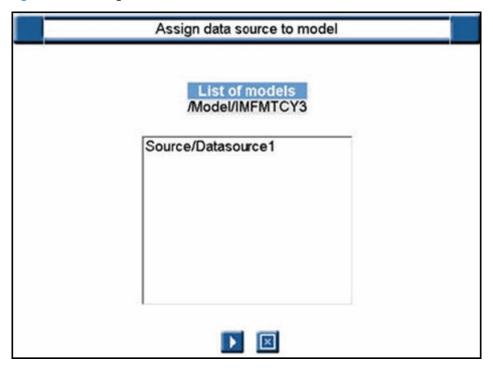
If a model is displayed in red on the **Manage Model** screen, it is not yet linked to a data source.

Use the following steps to assign a data source:

Select the model from the list on the **Manage Model** screen.

Click Assign data source to model.

Figure 12-148 Assign data source to model

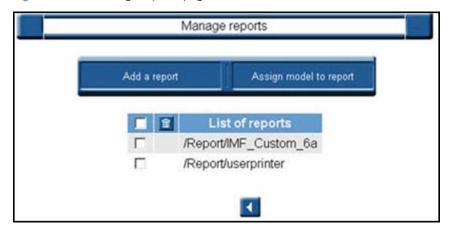


- 3. Select the data source.
- 4. Click the Go icon to proceed, or the Cancel icon to quit.

12.19.7 Manage reports

The table on the **Manage reports** page displays a list of custom reports available in the database.

Figure 12-149 Manage reports page



12.19.7.1 Add a report

Use the **Add a report** page to upload a .rdl file from the report server database.

Figure 12-150 Add a report

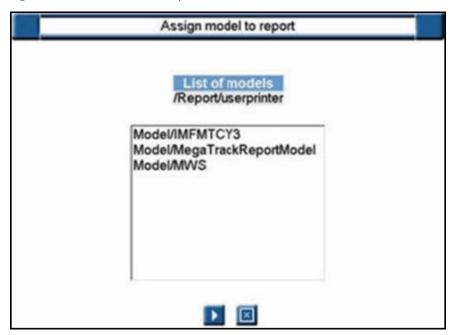
File to upload:	Browse	
Name:		
Description		
□ Overwr	☐ Overwrite item if exists	

- Enter the name of the .rdl file to upload, or click **Browse** to locate the file.
- Enter name of the file as it will appear in the report server namespace. This field is automatically filled when a file is selected with the Browse function.
- 3. Enter report Description.
- Select the **Overwrite item if exists** check box if you want to replace an existing item with a newer version. To overwrite an existing version, the name of the new item and the existing item must be an exact match.
- TIP: Only reports and models are published during a file upload. All other file types are stored as resources. The folder from which you initiate the upload operation is the folder that will contain the uploaded file.
- Click the Go icon to proceed, or the Cancel icon to quit.

12.19.7.2 Assign model to report

Use the **Assign model to report** page to assign a model from the database to a report.

Figure 12-151 Add model to report

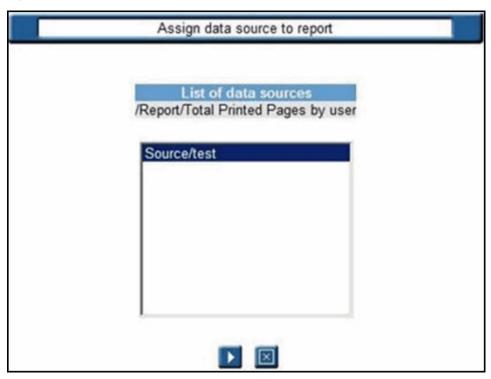


- 1. On the **Manage report** page, select a report from the list displayed in the table and click **Assign model to report** to assign a report model to an existing report.
- 2. Select a model from the list displayed.
- 3. Click the Go 🚺 icon to proceed, or the Cancel 🔲 icon to quit.

12.19.7.3 Assign data source to report

Use the **Assign data source to report** page to assign a data source to a report.

Figure 12-152 Assign data source to report page



Complete the following steps:

- 1. On the **Manage reports** page, select a report from the list displayed in the table and click **Assign data source to report** to assign a data source to an existing report.
- 2. Select a data source from the list displayed.
- 3. Click the Go icon to proceed, or the Cancel icon to quit.

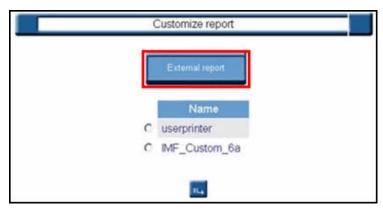
12.19.7.4 Delete a report

To delete a report, click the selection box next to the report and then click the Delete 🔲 icon.

12.19.8 Launch external report

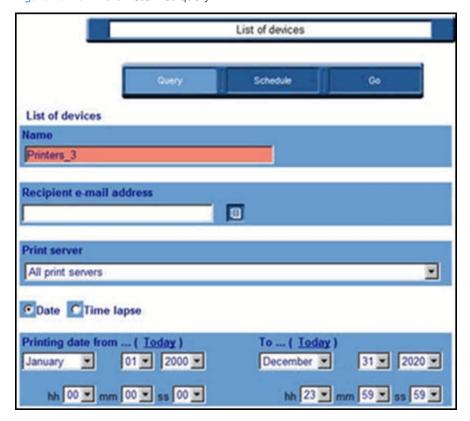
Select **External report** button on the Customize report page of the Remote Control to set parameters for your report.

Figure 12-153 External report button



- Select the report you want to customize.
- 2. Click **Parameterized mode** to customize the selected report.
- 3. Use the Parameterized query page to set parameters for the report. For more detailed information about customizing and launching the query, see <u>Section 12.11.3</u>, <u>Parameterize queries</u>

Figure 12-154 Parameterized query



12.19.9 JA reports in SQL Server Reporting Services

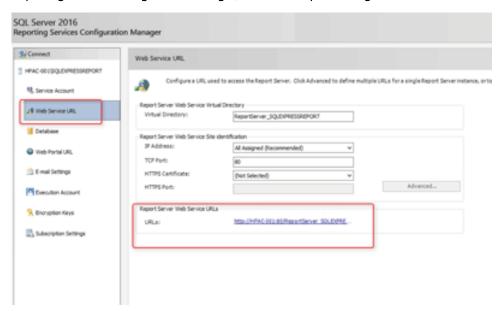
Prerequisites

- SQL Express with Advanced services (to add reporting services)
- SQL Full edition (up to 2016)

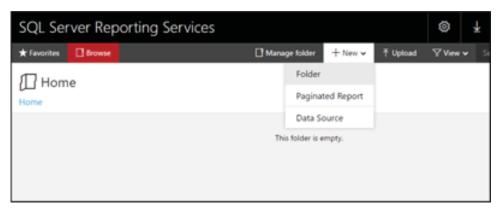
NOTE: The default SQL Express version supplied with the HP Access Control installer does not include Advanced Services and cannot be upgraded to include Reporting Services. A new instance of SQL Express with Advanced Services will need to be installed and used as the database for Reporting services. The Job Accounting HPACJA database can be separate from Reporting Services so no data needs to be transferred. The additional services required is Reporting Services - Native.

In the HP Access Control\JA Reports folder there are 32 report files that can be uploaded to SQL Server Reporting Services (SSRS). This allows users and managers to view JA data from SSRS. Complete the following steps to upload the JA reports into SSRS:

After configuring SQL Server Reporting Services, open a web browser and go to the address of the SQL reports (Example: http://servername/reports). The SQL Reports address can be found through the Reporting Services Configuration Manager, under the Report Manager URL or Web Service URL.

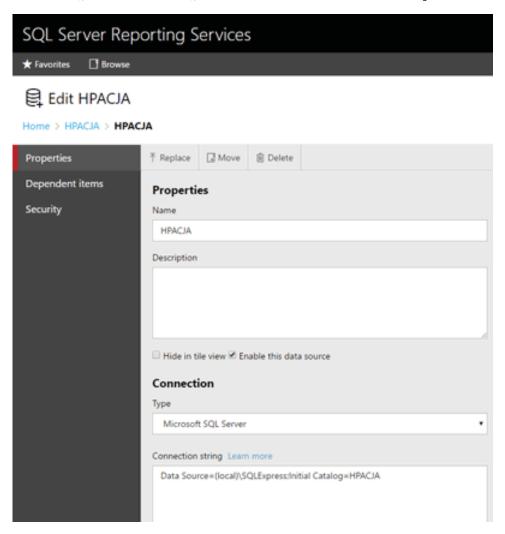


Create a new folder called HPAJCA.

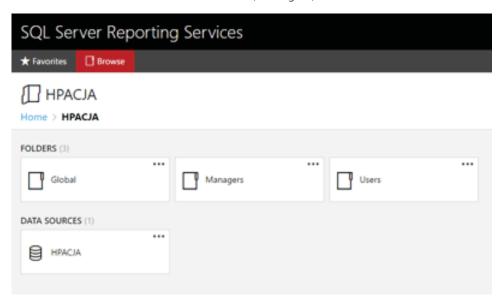


Open the new folder. 3.

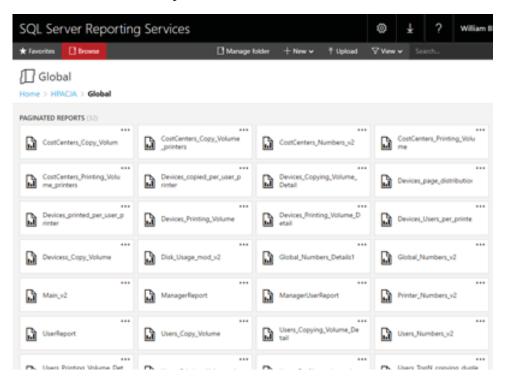
Create a new datasource inside the folder that points to the SQL Server where the HPACJA database is located. The name of the data source should be HPACJA. Use this line for the connection string: Data Source=SQLServerName\SQLInstanceName; Initial Catalog=HPACJA.



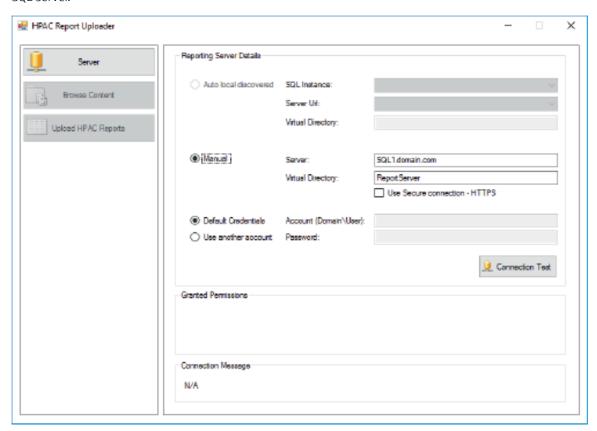
Create three new folders in SSRS called Users, Managers, and Global.



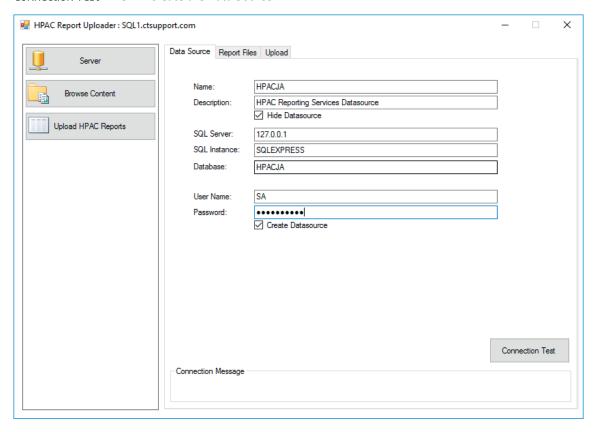
There are 32 RDL files in the \HP Access Control\JA Reports folder. Upload the 32 .rdl files into the Global folder. All files should be in your SSRS and assigned to the HPACJA data source. From the HPAC server right-click on the HPAC Report Uploader.exe and run as administrator. This tool is located in \HP Access Control\JA Reports folder.



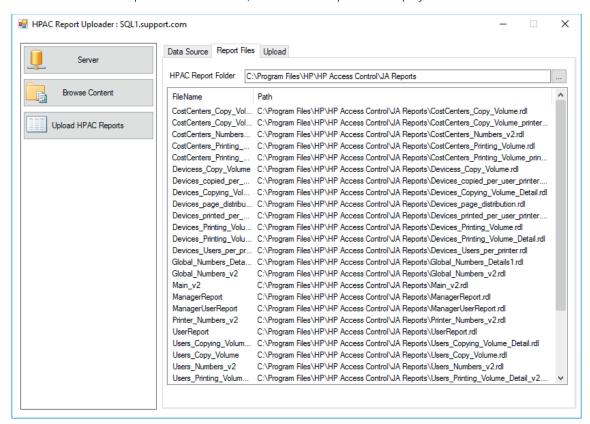
If the SQL Server is installed on the HPAC server, verify the information in the **Auto local discovered** section. If you are running HPAC Report uploader from a remote server, enter the SQL server information in the Manual section. Then enter the credentials to access the SQL server. Click Connection Test to connect to the SQL server.



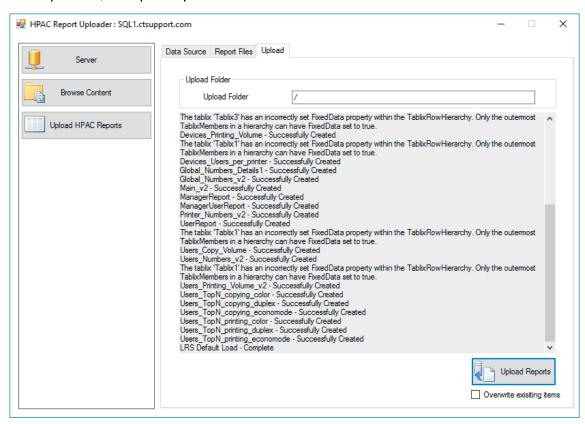
Go to Upload HPAC reports. In the Data Source tab verify the information is correct and then click **Connection Test**. This will create the Data Source.



In the Report Files tab, specify the location of the JA Report files in the HPAC Report folder field. By default, the JA Report files are located on the HPAC server in the HP Access Control\JA Reports folder. When the correct JA Report folder is entered, the list of the report files displays below.

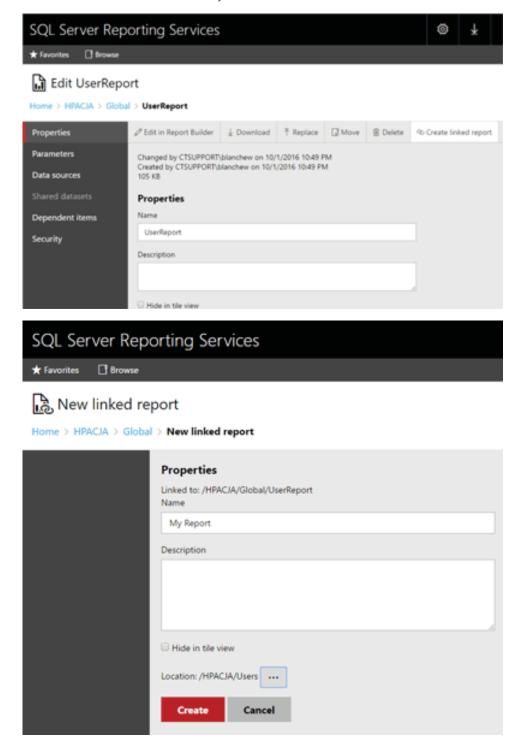


10. In the **Upload** tab, click **Upload reports**.



11. The uploaded reports are displayed on the Browse Content. Reports can now be viewed using the SQL Reporting Services web page.

12. Go to the HPACJA folder > UserReport.rdl > Manage, and click Create linked report. Place the report in the **Users** folder. This is for end users only.



- 13. Create a linked report for the ManagerReport.rdl and place it in the Managers folder. This is for managers only.
- 14. Create a linked report for the ManagerUserReport.rdl. The name for linked report should be "Report by User", and place it in the Managers folder.

- 15. Change the security for the Managers folder and Users folder, to allow the corresponding user you want to be Manager, User or Admin. The HPACJA security should be for Admin users only. The group you assign is based on AD groups and if the group does not exist an error will be displayed.
- 16. You can now create http shortcuts in your desktop to call the User report, Manager reports and Main report.

12.20 HP AC Job Accounting Dashboard

12.20.1 Introduction

The HP AC Job Accounting Dashboard is a tool that allows users to monitor detailed printer usage information by printer, user, project, department, or cost center. The data can provide meaningful analysis of printer and MFP activity and gives you a precise accounting of device usage.

The Dashboard application consists of various tabs that users can use to view and organize printing data. There are two types of installation files:

- The User version of the HP AC Job Accounting Dashboard installation file can be found in the following folder on the server:
 - C:\Program Files\HP\HP Access Control\client setup\Dashboard\User
 - The User version is intended for users with the basic ability to view and organize their printing data, as well as the printing data of the people they manage. This installs the Default Dashboard tab, the My Dashboard tab, and the Basic Designer tab.
- The Admin version of the Dashboard installation file can be found in the following folder on the server:
 - C:\Program Files\HP\HP Access Control\client setup\Dashboard\Admin
 - The Admin version is intended for administrators or managers with the authority to oversee the database and printing data of an organization. This version installs the Default Dashboard tab, the My Dashboard tab, the Basic Designer tab, and the Advanced Designer tab.
- MPORTANT: The Admin version of Dashboard requires connection to a SQL Server with SQL Analysis Services installed and configured.

12.20.1.1 Requirements

HP AC Job Accounting installed and setup on a server.

Any of the following SQL Servers installed locally or remotely:

- Microsoft SOL Server 2008 Express
- Microsoft SQL Server 2008
- Microsoft SQL Server 2012 Express
- Microsoft SQL Server 2012
- Microsoft SOL Server 2016

12.20.1.2 Installation

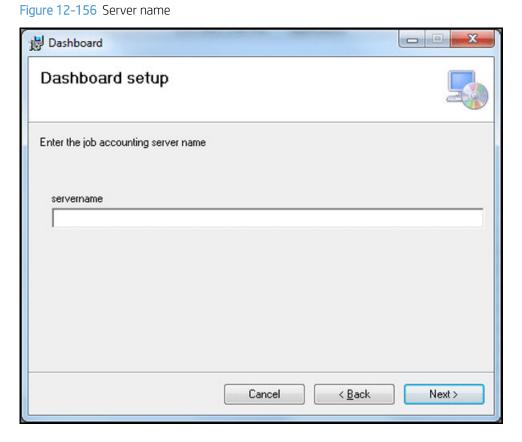
Follow the instructions below to install HP AC Job Accounting Dashboard on client computers:

Double-click the **Dashboard** installation file. The Dashboard Setup Wizard window displays. Click **Next**.

Figure 12-155 Dashboard Setup Wizard

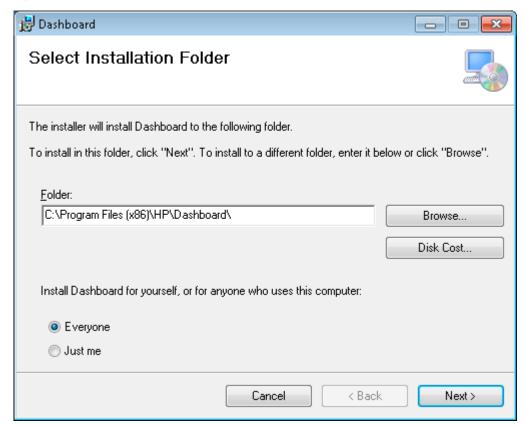


On the Dashboard Setup screen, enter the name or IP address of the job accounting server. Click **Next**.



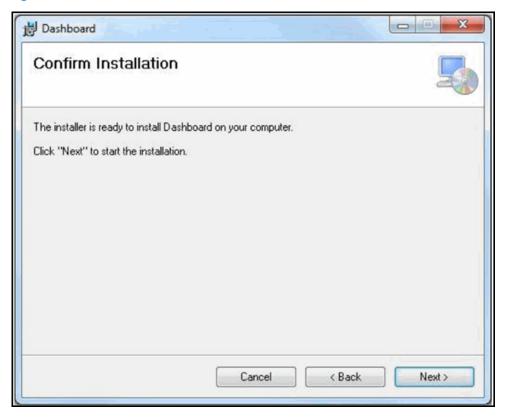
On the Select Installation Folder screen, make sure the correct folder path is displayed in the Folder field. Select **Everyone** to allow all users and guests on the computer to use the Dashboard. Select **Just me** to allow only the current user to use the Dashboard. Click Next.

Figure 12-157 Select Installation Folder



On the Confirm Installation screen, click Next.

Figure 12-158 Confirm Installation



When the installation is complete, click **Close**. To open Dashboard, double-click the Dashboard desktop icon or select **Dashboard** from the Start menu.

12.20.1.2.1 Silent mode installation

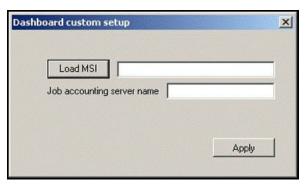
To install Dashboard in silent mode, use the **Dashboard Custom Setup** application. Dashboard Custom Setup can be found in the following folder on the server that has HP AC Job Accounting installed:

C:\Program Files\HP\HP Access Control\client setup\Dashboard

Follow the instructions below to use Dashboard Custom Setup to edit the DashboardSetup.msi file:

- On the HP AC Job Accounting server, open the **Dashboard Custom Setup** application.
- Click the Load MSI button. Locate the DashboardSetup.msi file in either the Admin folder or the User folder, depending on which version of Dashboard you want to install silently on client computers. Click Open.
- In the Job accounting server name field, enter the name or IP address of the job accounting server you want Dashboard users to connect to.
- 4. Click **Apply**.

Figure 12-159 Dashboard custom setup

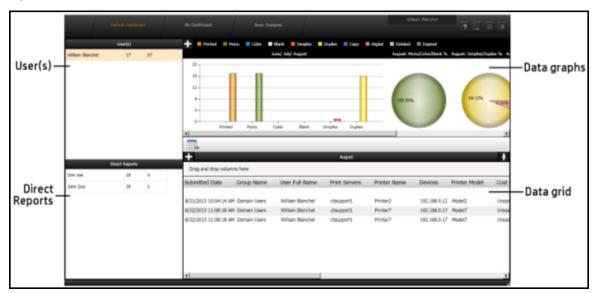


12.20.1.3 User guide

12.20.1.3.1 Default Dashboard

The Default Dashboard tab allows you to view printing information about yourself and about your group, extended information about users' printing history in your group and graphs of information about the printing history of the past three months.

Figure 12-160 Default Dashboard

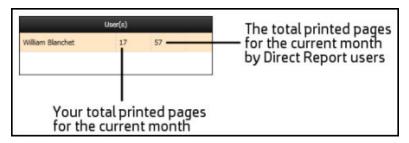


12.20.1.3.1.1 User(s) area

In the User(s) area you can see your user name, your total number of pages printed, and the total number of pages printed by the group you supervise.

The information displayed in the data visuals section and data grid section represents the printing by the user listed last in the User(s) section.

Figure 12-161 users area



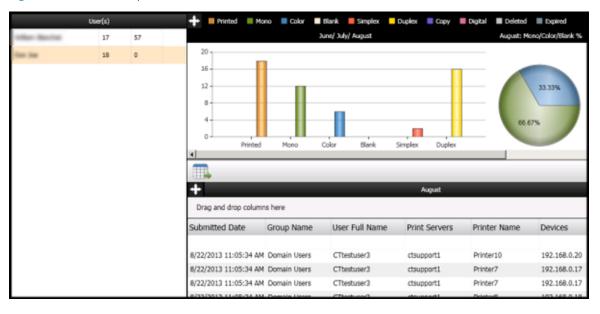
12.20.1.3.1.2 Direct Reports area

The Direct Reports section lists users in your group who report directly to you. The user name, the user's total number of printed pages, and the total number of printed pages by the group the user supervises.

To view printing information about a user in your Direct Reports, double-click a user name in the Direct Reports section. The following happens:

- This moves the user name up to the User(s) section. The User(s) section now displays the hierarchy of users.
- Information about that user's printing history displays in the data visuals and data grid sections on the right.
- The Direct Reports section also changes to display the names of users who report directly to the user selected.

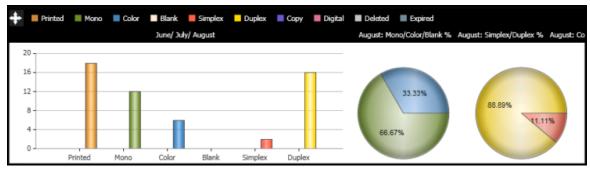
Figure 12-162 Direct reports data



12.20.1.3.1.3 Data graphs area

The information displayed in the data visuals section shows the current and previous two month's printing data related to the last user listed in the User(s) section.

Figure 12-163 Data graphs area



The data visuals section displays two types of visual: a bar graph and pie charts.

- The bar graph illustrates the user's printing data over the past three months, including the total number of pages print, the total number of mono pages printed, the total number of colored pages printed, the total number of simplex pages printed, and the total number of duplex pages printed. Each bar represents the number of pages printed for each month.
- The pie charts show the user's printing data for the current month.
 - The Mono/Color chart shows the percentage of printed pages that were black and white or color.
 - The Simplex/Duplex chart shows the percentage of printed pages that were printed using the simplex or duplex printing feature.
 - The Copy/Digital/Print chart shows the percentage of printed pages that were printed using the copy function, the digital sending function, or were printed directly to the printer.
 - The Deleted/Expired/Print chart shows the percentage of print jobs that were deleted before they were printed, that expired before they were printed, or were printed.

Click the chart popup icon to view the data visuals larger in the Chart Popup window.

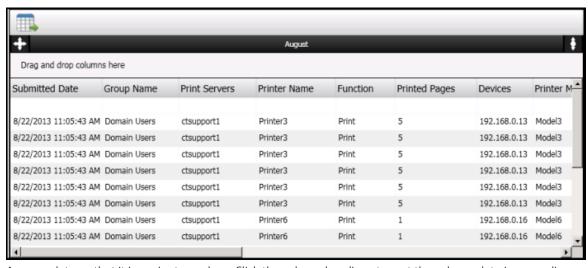
Duplex Copy Digital 33.33% 16 88.89% 11.11% 66.67% 12 100.00% 33.33% Blank

Figure 12-164 Data graphs popup icon

12.20.1.3.1.4 Data grid area

The data grid section displays columns with the user's printing data details for the current month.

Figure 12-165 Data grid area



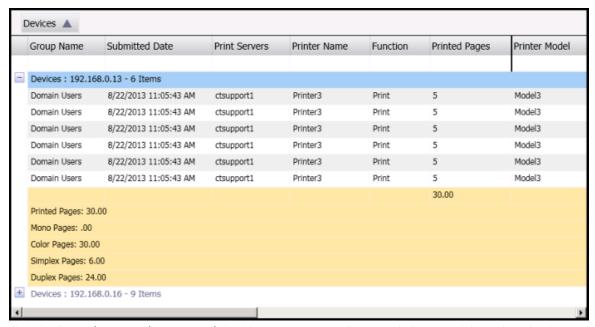
Arrange data so that it is easier to analyze. Click the column headings to sort the column data in ascending or descending order.

In the filter field, under the column headings, you can set the rules for the data that should remain visible after the filter is applied. You can type text to filter names or you can type any one of the filter operators below to filter numbers:

- less than
- <= less than or equal to
- >= greater than or equal to
- not equal to

For a more customized view of data, click and drag column headings to the Drag and drop columns here section above the column headings. This will group the data by the selected columns. For example, the figure below shows data grouped by GroupName and then by PrinterModel. The totals of pages appear highlighted in the last rows.

Figure 12-166 Group data



Click the Expand groups when grouped checkbox to automatically expand all grouped data when the data is

To export the data as a report, click the **Export report to Excel** icon . Select a save destination and save the report.

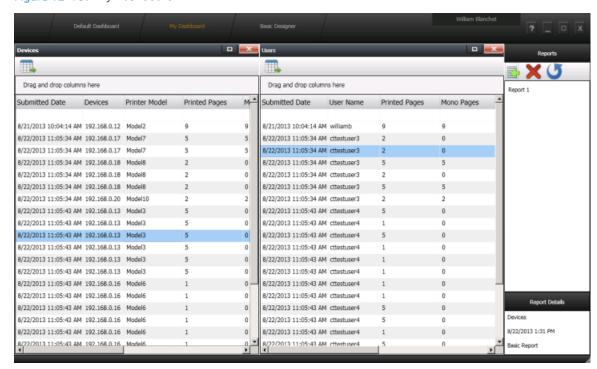
Click the Min/Max icon to maximize or minimize the data grid.

Click the expand icon to expand the data grid vertically.

12.20.1.3.2 My Dashboard

Using the My Dashboard tab, you can open multiple reports at one time to review and compare your printing data. The My Dashboard tab consists of three areas: the Reports area, the Report Details area, and the report viewer area.

Figure 12-167 My Dashboard



12.20.1.3.2.1 Reports

The Reports area lists saved reports. The reports listed are reports that were saved using the Basic Designer tab or the Advanced Designer tab. Double-click one or more report names from the list to view the report data in the report viewer area.

Click the Import an XML format report icon to import a report saved as an XML file.

Select a report from the list and then click the Delete 💓 to delete a report from the Reports area.

Click the Reset ____ to clear the report viewer area.

12.20.1.3.2.2 Report Details

The Report Details area shows information about a selected report. Click a report in the Reports area to display information about the report, including the report name, the date and time the report was created, the month relating to the report information, and the type of report.

12.20.1.3.2.3 Report viewer area

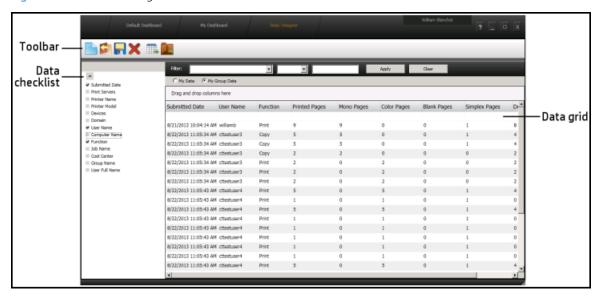
The report viewer area shows selected report data. Multiple reports can be viewed at one time for easy comparison of report information.

Click and drag the report heading to organize the order of multiple reports.

12.20.1.3.3 Basic Designer

The Basic Designer tab allows you to customize your printing data or your group's printing data.

Figure 12-168 Basic designer tab



12.20.1.3.3.1 Basic Designer toolbar

Figure 12-169 Basic Designer toolbar



Click the **New** icon to clear all data to create new customized data.

Click the **Open** icon **to** open a saved report. Select a report from the list and then click **Load**.

Click the **Save** icon **** to save a customized report. Type the name of the customized report and then click Save.

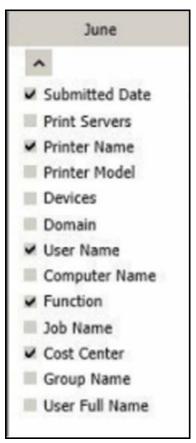
Click the **Delete** icon **t** to delete a saved report. Select a report from the list and then click **Delete**.

Click the **Export grid to Excel** icon to export the customized data as an Excel file.

Click the **Export report to XML** icon to export the customized report as an XML file. This feature is intended for managers, and displays only if there are users in your Direct Reports list.

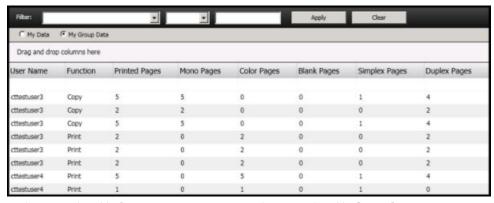
12.20.1.3.3.2 Data checklist

Figure 12-170 Data checklist



Use the checkboxes on the left to select what data you want to see in the columns.

Figure 12-171 My Dashboard Data grid area



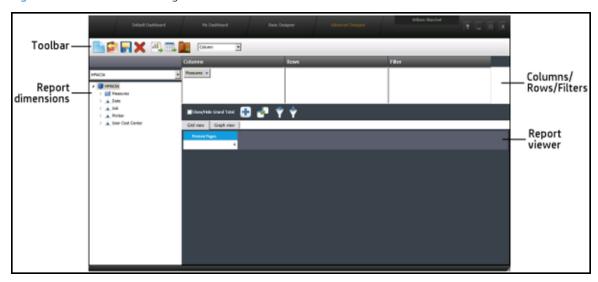
At the top, select **My Data** to view your printing data, or select **My Group Data** to view your group's printing data. These options are intended for managers and display only if there are users in your Direct Reports list.

12.20.1.3.4 Advanced Designer

IMPORTANT: The Advanced Designer tab displays only if the Dashboard administrator version is installed. Please contact your administrator for more information.

The Advanced Designer tab allows you to customize data on an advanced level using multidimensional data.

Figure 12-172 Advanced Designer



12.20.1.3.4.1 Advanced Designer toolbar

Figure 12-173 Advanced Designer toolbar



The following icons display on the Advanced Designer toolbar:

Click the **New** icon to clear all data to create new customized data.

Click the **Open** icon to open a saved report. Select a report from the list and then click **Load**.

Click the **Save** icon **** to save a customized report. Type the name of the customized report and then click Save.

Click the **Delete** icon **1** to delete a saved report. Select a report from the list and then click **Delete Export chart** to PDF icon ::

Click the Export report to XML icon to export the customized report as an XML file. This feature is intended for managers and displays only if there are users in your Direct Reports list.

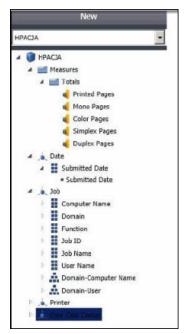
Click the **Export grid to Excel** icon to export the customized data as an Excel file.

Click the graph view drop-down menu to select a graph type to be viewed in the Viewer area.

12.20.1.3.4.2 Report dimensions

Use the drop-down menu to select the job accounting server.

Figure 12-174 Job Accounting report dimensions - drop-down menu



Click and drag the dimensions to the Columns/Rows/Filter areas to group and customize your data. The data appears in the Viewer area.

12.20.1.3.4.3 Columns/Rows/Filter area

Figure 12-175 Columns/Rows/Filter area



Click and drag the dimensions from the Report dimensions area to the Columns, Rows, or Filter area to group and customize your data.

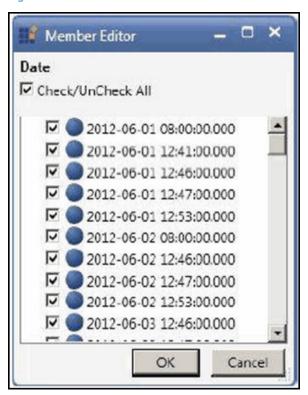
After you click and drag the dimensions, do the following:

Move your cursor over a dimension button to view the dimension options:



- Click the up arrow icon to move the dimension up in the hierarchy.
- Click the down arrow icon to move the dimension down in the hierarchy.
- Click the delete icon to remove the dimension from the hierarchy.
- Click the dimension button to display the Member Editor window. In the Member Editor window, check or uncheck the dimension attributes you want to display or not display. Click **OK** to save your changes.

Figure 12-176 Member editor



12.20.1.3.4.4 Viewer area

Figure 12-177 Report viewer



Click the **Show/Hide Grand Total** check box to hide the data totals.

Click the **Show/Hide Expanders** icon to display or not display the icon to expand the detailed data.

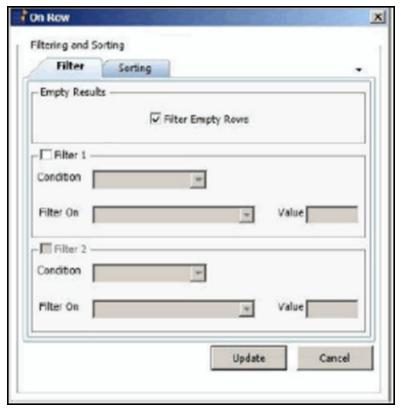
Click the Toggle Pivot icon



12.20.1.3.4.5 Filtering and Sorting window

Click the **Filtering/Sorting** icon if you want to arrange data so that it is easier to analyze. In the Filtering and Sorting window, you can filter data to quickly see only the printing data that you specify. When you are finished making changes, click Update to apply the filter or sort settings.

Figure 12-178 Filter tab



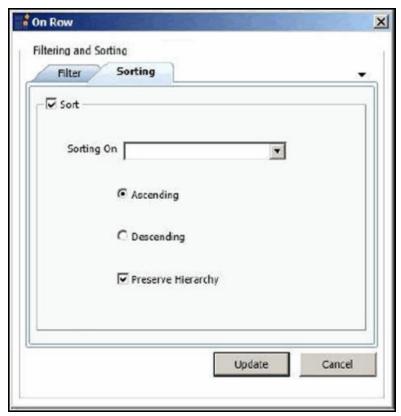
Uncheck the Filter Empty Rows checkbox if you do not want to include rows with empty data in the filter.

Check the Filter 1 checkbox to create a filter.

Select a filter condition from the Condition drop-down menu.

Click the **Filter On** drop-down menu to select a printing data value to filter by.

Figure 12-179 Sorting tab



Click the **Sort** checkbox to turn on sorting.

Click the **Sorting On** drop-down menu to select the page type that you want to sort the data by.

Select **Ascending** or **Descending** to determine the order of sorting.

12.21 Configuring for Print Server tracking

To configure a print queue, select a print queue from the installed print queues list, then click Configure. In the Configure window, select features to enable. Click **OK**.

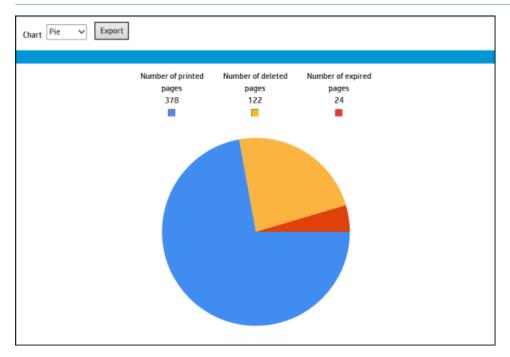
The Configure window displays the following possible features:

- Tracking: Enables tracking of print jobs sent to the selected print queue. The print queue tracking method can be either Port Monitor or Print Processor, depending on what is selected in the Settings tile > Print Server tab.
- Quota: Enables the enforcement of Job Accounting guotas for printing.
- IPM: Enables the implementation of IPM rules and costs. Select a cost per page scheme from the dropdown list. The cost per page schemes can be set in the Settings tile > IPM tab. The IPM Cost column displays the cost per page scheme assigned to the selected print gueue.
- Add tracking PJL attributes: Inserts Job Accounting PJL attributes in the data stream. If an application generates a data stream that does not include the PJL header containing the user and job information, the user and job name are reported as UNSPECIFIED in Job Accounting reports.
- Pause job: Automatically pauses print jobs in the print queue. This feature is only possible when Port Monitor is selected for print queue tracking and the Windows service HP ACJASpool Monitor is started.

13 Pull Print Savings

The Pull Print Savings tile allows administrators and users to view the number of printed pages, deleted pages and expired pages in as a graph. Click the Chart drop-down menu to view the data as a pie chart or as a bar graph. Click the **Export** button to export the data as a CSV file.

NOTE: The Pull Print Savings can also be viewed in a web browser by going to http://server/PullPrintSavings, where server is the name or IP address of the HP AC server.



14 Licensing

14.1 Licensing the product

The ID key field contains the server license number that identifies your server to the HP Licensing Support team. To receive Activation keys for components, you need to contact the licensing customer support center:

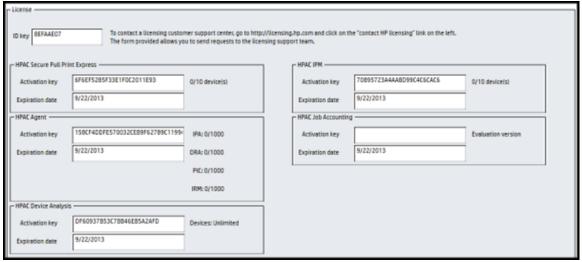
- Go to the HP licensing customer support center at http://licensing.hp.com. 1.
- Click **Contact HP Licensing** (on the left).
- Fill in all required fields. In the Your comments field, make sure to include your server license number. Then submit the form.

After your license request is processed, you will receive an email containing Activation keys. Copy the component Activation keys and paste into the **Activation key** fields in the License tile.

14.2 License tile

The License tile shows your server license number ID key and Activation key(s) for installed components and expiration dates of licenses.

Figure 14-1 License tile



NOTE:

- Information in the License tile may vary depending on what components of HP Access Control (HP AC) are installed on the server.
- The Secure Pull Print Express license resets after 24 hours. This allows for users to pull print at new devices every day.

14.3 License expiration

The red highlighted License tile on the HP AC Configuration Utility main screen indicates a component license is expired.

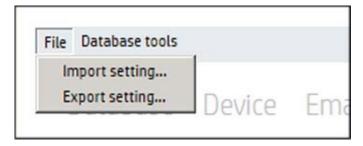


15 Best practices and troubleshooting

15.1 Importing and Exporting settings

Configuration settings can be exported as an XML file, in the event that the server or application needs to be reinstalled. Complete the following steps:

- Go to the Settings tile and under the File menu, do one of the following:
 - Click **Import setting** to import an XML file of previously saved settings or;
 - Click **Export setting** to save your current settings as an XML file.



Enter the path for the file required.

15.2 Backing up the database for re-installation

The Database tools menu allows you to repair or backup the database setting information in the event the server or application needs to be reinstalled. The information entered in the settings tile is stored in a database.

Go to the Settings tile and under the Database tools menu, do one of the following:

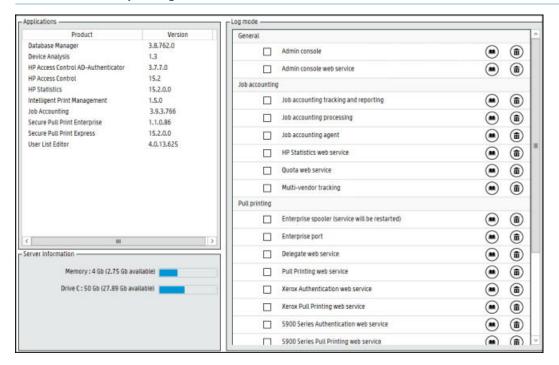
- Click **Compact and Repair database** to compact the database
- Click Backup database to save the database as an SDF file

15.3 Server information

The Server information tile displays information to help you manage HP Access Control on your server. This tile displays version numbers of installed components, storage and memory of the server, and the HP Access Control logs. This makes it easy to check if your HP Access Control components are up to date and view valuable information about your server such as hard drive space available. Click Help > About to view copyright information about HP Access Control. It is recommended to enable logs when requested by the support team. To enable logs for components, click the check box next to the component title. Click the View Log File icon to open the log file. Click **Clear Log File** to clear the log.



NOTE: Configuration at a device occurs in order, starting at the top of the Configure window list. This means the FDT workflow is always configured last on a device.



15.4 FDT tab

The HP Fleet Deployment Tool (FDT) is a standalone tool designed to install and configure your printer fleet.

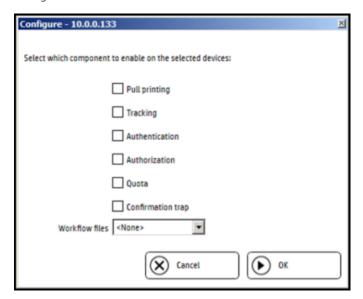
This FDT tab utilizes the customized workflows created by the HP Fleet Deployment Tool, allowing you to send firmware, in-printer agents or configuration files to multiple devices for a more automated deployment.

See the HP Fleet Deployment Tool User Guide included with the Fleet Deployment Tool application for instructions to create workflows. You can send workflow files to the device specified in the Settings > FDT tab.

NOTE:

- FDT tab displays only if the HP Fleet deployment Tool application is installed on the server.
- Configuration at a device occurs in order, starting at the top of the Configure window list. This means the FDT workflow is always configured last on a device.
- Double-click the FDT installation folder field to browse to the FleetDeploymentTool folder containing the FDTCommandLine.exe file.
- Double-click in the Workflow folder field to browse to the folder containing FDT workflow files.

To configure a device with a FDT workflow, simply select the workflow to apply to the device during configuration.



15.5 Limit the AD-Authenticator managerial websites to specific users

The Configuration, Group Manager, and User Editor Web pages can be set to limit their use to specific users only. By default these pages permit access to any user who can successfully authenticate to your domain. Because they are used only for managing the AD-Authenticator, you are encouraged to limit their use to those individuals in your organization who have been specifically selected and trained to use them. This section describes how to accomplish that.



NOTE: The Configuration, Group Manager, and User Editor pages each perform unique functions. You can allow different users access to each page. For example, you may want to give your help desk personnel access to the User Editor and limit the Configuration and Group Manager pages to system administrators only.

15.5.1 IIS 7

- 1. Open Internet Information Services (IIS) Manager.
- In the Connections pane, go to the local server name>Sites>Default Web Site. 2.
- 3. In Features View, double-click **Authorization Rules**.
- In the Actions pane, click **Add Deny Rule**. 4.
- In the Add Deny Authorization Rule select one of the following types of access:

- All users: specifies that all users, whether they are anonymous or identified, can access the content.
- **All anonymous users**: specifies that anonymous users can access the content.
- Specified roles or groups: specifies that only members of a certain roles or users groups can access the content. Enter the role or user group in the text box.
- Specified users: specifies that only certain users can access the content. Enter the user IDs in the text
- Optionally, check Apply this rule to specific verbs if you want to require that the users, roles or groups allowed to access the content can only use a specific list of HTTP verbs. Enter those verbs in the text box.
- Click OK. 7.

15.6 Change user code and device function rights email message

The contents of the email message sent to inform users of their PIC and device function rights can be modified. The following is the default email text:

```
Hello AD-Authenticator Manager,
Your code for accessing our HP MFP devices is:
107
Your device function permissions:
Yes - Copy
Yes - Color Copy
Yes - Send to Email
No - Send Fax
No - Send to Folder
Yes - Job Storage
No - Create Stored Job
No - Digital Sending Service (DSS) Secondary
No - Digital Sending Service (DSS) Workflow
Please contact your supervisor if you have questions regarding this email.
```

The text of the message, and other information, can be changed. Complete the following steps to modify the email:

Launch the Windows Notepad utility:

Navigate to Start > All Programs > Accessories > and select **Notepad**.

- Open the AD-Authenticator mailer style sheet.
 - On the Notepad menu, click File and then Open. a.
 - In the Files of type drop-down list, select All Files. b.
 - Browse to the **AD-Authenticator** installation directory (by default Inetpub\wwwroot\ADAuthenticator) and then to the mailers subdirectory.
 - d. Select the codemailers.xsl file and then click **Open**.

- 3. Change the mailer style sheet. The mailer file is a standard XSLT style sheet. An extensive tutorial in XSLT is beyond the scope of this document. The XSLT standard itself may be found at www.w3.org/TR/xslt and a tutorial is located at www.w3schools.com/xsl/. However, a user can make changes by simply comparing the contents of a received email to the portion of the style sheet beginning with the line containing Hello and ending with the line containing '
 Please contact your supervisor...' Note that
is simply the XSLT representation of a new line command.
- 4. When required changes are completed, save the updated file and close Notepad.
 - a. On the Notepad menu, click File, and then Exit.
 - **b.** Click **Yes** when asked to save the changes. Notepad saves the changes and exits.

15.7 Logs

15.7.1 IPM logs

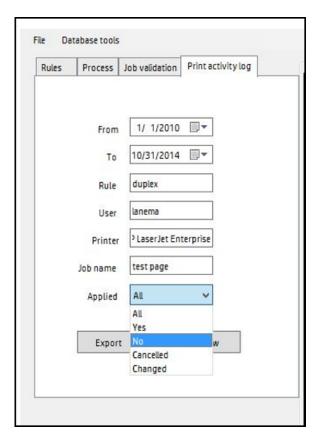
To enable a list of all jobs printed using IPM rules, the IPM log can be enabled.

Prerequisites

- HP Access Control Intelligent Print Manager installed and configured.
- Devices configured for IPM rules.

Complete the following steps:

- 1. Go to the Settings tile and click on the IPM tab.
- 2. Under Print activity, select Enable print activity log.
- 3. Click Apply.
- 4. To view the logs to the IPM tile, click **Print activity log** tab.
- 5. Enter the following information to define the report required:
 - Enter the date range in **From** and **To**.
 - **Rule**: Enter the name of the rule to view print activity with a specific rule.
 - **User**: Enter the NT username to view print activity of a specific user.
 - **Printer**: enter the print name to view activity of a specific printer.
 - **Job name**: enter the name of a job to view activity of a specific print job.
 - **Applied**: select the status of job rules to view activity of a specific rule status.



Click **View** to see the log, or click **Export** to save as a CSV file.

15.8 Testing the AD-Authenticator

Use the following steps to verify that the AD-Authenticator web service used by HP Access Control (HP AC) MFP devices is operating correctly:

- 1. Select **Test Authentication Service**.
- 2. Enter a valid PIC in the Find box.
- 3. Click Find.

The upper portion of the screen displays the user's information as provided by the AD-Authenticator web service. The information is read-only and cannot be changed.

15.9 Troubleshoot the AD-Authenticator

This section describes various error conditions that may be encountered when configuring and/or using the AD-Authenticator and how to resolve them.

15.9.1 Internet Explorer cannot display the web page

If this message displays when trying to start the AD-Authenticator Group Manager or User Editor on the server where the AD-Authenticator is installed, it is most likely caused either because the URL of the application is incorrectly entered, or because the Default Web Site is not started in IIS on the server.

Make sure the URL is correct. For the Group Manager, it should be http://localhost/AD-Authenticator/AD-Group-Manager.aspx. For the User Editor, it should be http://localhost/AD-Authenticator/AD-User-Editor.aspx.

If the URL is correct, go to the IIS Manager and check to see if the Default Web Site is running. If it is stopped, right-click it and select Start

If you encounter this error when trying to start the AD-Authenticator Group Manager or User Editor on a machine other than where the AD-Authenticator is installed, it could be caused by either of the conditions previously described, or because the firewall on the server (or another firewall between the machine and the server) is preventing access.

First, make sure the utility operates correctly when started on the AD-Authenticator server itself. If it does not, correct that problem. If it operates correctly on the server, check the server and any other firewall or router settings.

15.9.2 No LDAP server configured and unable to obtain one automatically

The AD-Authenticator can often locate the AD server automatically without requiring a specific address. If this message displays, it is unable to automatically locate the AD server and one must be specified..

15.9.3 Unable to establish a secure connection with the server

An unable to establish connection with the server error displays text similar to the following:

Server Error in '/AD-Authenticator' Application

Configuration Error

Description: An error occurred during the processing of a configuration file required to service this request. Please review the specific error details below and modify your configuration file appropriately.

Parser Error Message: Unable to establish secure connection with the

This error can be caused by an error in the connectionUsername and ConnectionPassword attribute strings.

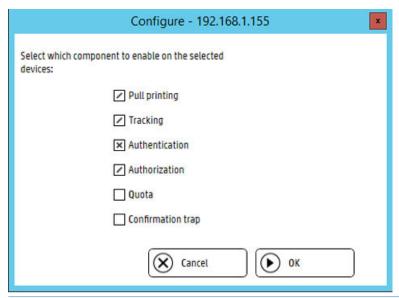
Make sure those strings contain the correct username and password for a user with read-write access to the AD. Make sure only a simple username was entered, with no domain prefix.

15.9.4 Unable to auto-detect a SMTP server

If Microsoft Exchange is implemented, AD-Authenticator can often detect the SMTP server automatically without requiring its specific address. This message indicates that it is unable to automatically locate the SMTP server and one must be specified one. For instructions on setting the SMTP server address, see Section 4.2.2.1, Set SMTP Server parameters.

15.10 Reconfiguring devices

When reconfiguring the device(s), place an X in a component checkbox to re-send the configuration file. Place a / in a component checkbox to not re-send the configuration file and leave the current configuration status as is. Clear a component checkbox to disable the component on the device.



NOTE: If the IP address of a device changes, delete the device from the device list and then re-add the device using the new IP address. This is to update the cached printer information in the admin console.

15.11 Troubleshooting devices

15.11.1 Troubleshooting OfficeJet Pro devices

When configuring OfficeJet Pro devices you may see the following errors in the messages pane:

- Error 401: Check that the OPS Server Password provided during the OPS installation matches the password in the HP AC Configuration utility.
 - In the Settings tile > Device tab under OPS Server re-enter the OPS password.
- **Error 400**: There is a communication issue between the OPS server and the device.
 - Remove the OPS certificate from the device. Go to the EWS and under Network > Certificates delete 1. the OPS certificate.
 - 2. Reboot the printer.
 - 3. Select "Overridge OPS" setting in the Settings tile > Device tab in the OPS server section.
 - Restart the OPS service. 4.
 - 5. Reconfigure the device.
 - If the error persists, reset the printer to factory defaults and reconfigure the device.

15.12 Slow authentication

If authentication performance is sluggish upon first use, contact the IIS administrator to look into disabling the Certificate Revocation List check (CertCheckMode). This has been reported to take 10-15 seconds to complete in some cases. Use of SQL Server Express or full SQL in HP AC can eliminate this issue.

15.13 Blocking disabled AD users

This is useful if accounts are not removed, but only disabled, and you do not wish to allow the accounts access to the print devices.

Locate the section of web.config file as below. The web.config file can be found here Program Files\HP\HP Access Control\AD-Authenticator.

```
<ldapAttributes>
     <add name="card" attribute="" default="" unique="true"</pre>
validate="concat('(&(objectClass=organizationalPerson)({0}=',$card,'))')" />
      <add name="code" attribute="" default="" unique="true"</pre>
<add name="username" attribute="sAMAccountName" default="" unique="true"</pre>
      validate="concat('(&(objectClass=organizationalPerson)({0}=',$username,'))')" />
     <add name="alias" attribute="displayName" default="" />
      <add name="email" attribute="mail" default="'</pre>
validate="concat('(&(objectClass=organizationalPerson)({0}=',$email,'))')" />
      <add name="domain" attribute="mail" default="" evaluate="substring-after($domain,'@')" />
     <add name="department" attribute="department" default="" />
     <add name="membership" attribute="memberOf" default="" />
     <add name="userRights" attribute="" default="000000000" />
      <add name="isDisabled" attribute="userAccountControl" default=""</pre>
       evaluate="$isDisabled div 2 mod 2" />
    </ldapAttributes>
```

2. Add the LDAP filter expression to the "validate" attribute of the "card," "code," and "username" nodes as shown below. Use care to insert the expression "(!userAccountControl:1.2.840.113556.1.4.803:=2)" EXACTLY as shown – syntax errors will render the AD-Authenticator inoperable until they are corrected.

```
<ldapAttributes>
       <add name="card" attribute="" default="" unique="true"</pre>
         validate="concat('(&(objectClass=organizationalPerson)({0}=',$card,')(!userAccountContr
ol:1.2.840.113556.1.4.803:=2))')" />
<add name="code" attribute="" default="" unique="true"
         validate="concat('(&(objectClass=organizationalPerson)({0}=',$code,')(!userAccountContr
ol:1.2.840.113556.1.4.803:=2))')
         generate="PINGenerator({0},{1},'{2}')" />
       <add name="username" attribute="sAMAccountName" default="" unique="true"</pre>
         validate="concat('(\&(objectClass=organizationalPerson)(\{\theta\}=',\$username,')\\ \frac{(!userAccountClass=organizationalPerson)(\{\theta\}=',\$username,')}{(!userAccountClass=organizationalPerson)}
validate="concat('(&(objectClass=organizationalPerson)({0}=',$email,'))')" />
       <add name="domain" attribute="mail" default="" evaluate="substring-after($domain,'@')" />
       <add name="department" attribute="department" default=" />
<add name="membership" attribute="member0f" default="" />
<add name="userRights" attribute="" default="000000000" />
       <add name="isDisabled" attribute="userAccountControl" default=""</pre>
         evaluate="$isDisabled div 2 mod 2" />
     </ldapAttributes>
```

This change will make disabled users completely invisible to the AD-Authenticator. Any card/code assigned to that user may be reused by another user.

NOTE: If the disabled account is later re-enabled, the AD-Authenticator will return one of the users with the matching card/code and will not be able to distinguish between the two. It is recommended that a user's card/code values be cleared before their account is disabled. When an Active Directory user account is disabled, it will be invisible to AD-Authenticator operations and behave as follows:

For card authentication:

- Attempting to look up the user in the AD-User-Editor will result in a "User not found." error.
- Previously enrolled users will appear in the DB-User-Editor and can be modified. Regardless of any modification there, the disabled user will still be unable to authenticate or enroll a card.
- Attempting to enroll a new card will result in a "The credentials you supplied are not correct." error.
- Attempting to authenticate a card that was previously enrolled to a now disabled user will result in an "Unknown card." error. If enrollment is permitted, the user will be prompted to enroll the card but attempts to enroll it to a disabled user will result in the "The credentials you supplied are not correct." error as stated above. The card can, however, be enrolled by another user whose account is not disabled. This can cause issues if the original account is later re-enabled because the card will now be assigned to multiple user accounts.

For code authentication:

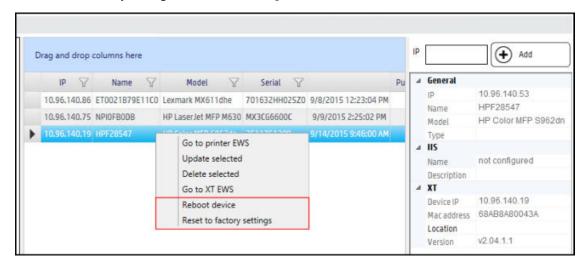
- Attempting to lookup the user in the AD-User-Editor will result in a "User not found." error.
- Previously enrolled users will appear in the DB-User-Editor and can be modified. Regardless of any modification there, the user will still be unable to authenticate or enroll a card.
- Attempting to authenticate a code that was previously assigned to a now disabled user will result in an "Unknown code." error.
- A disabled user's code can be reassigned to another user whose account is not disabled through either the AD-User-Editor or MyCode pages. This can cause issues if the original account is later reenabled because the code will now be assigned to multiple user accounts.

15.14 Resetting XT devices

When in the Devices tile, you can right-click on a device to display a drop-down menu:

Reboot device to restart an XT device.

Click **Reset to factory settings** to remove all configurations on an XT device.

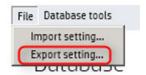


15.15 Post installation tasks

As a best practice, after configuring your HP AC installation, you should backup the configuration so that it can be easily recovered if needed.

- Go to the Settings tile.
- Under the File menu select Export Setting....

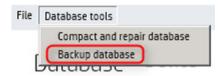




Save the file. When complete you will get an export successful message.



Go to the Database Tools and choose Backup Database. The database stores the admin console configuration and the login rights for the admin console.



15.16 Enabling CORS on FutureSmart devices

If CORS is enabled on any of the FutureSmart devices than the following is required to be done in the device's Embedded Web Server:

- If using Secure Pull Print Express, add the server name to the CORS Trusted Sites list. See the device's documentation for instructions.
- If using Job accounting and tracking is required, make sure the Job Accounting server is listed in the CORS Trusted Site list.
- If using Secure Pull Print Enterprise, make sure "localhost" is listed in the CORS Trusted Sites list.

15.17 User rights not being enforced

When configuring user rights for access to device functions, if the user is able to access a restricted function check the following:

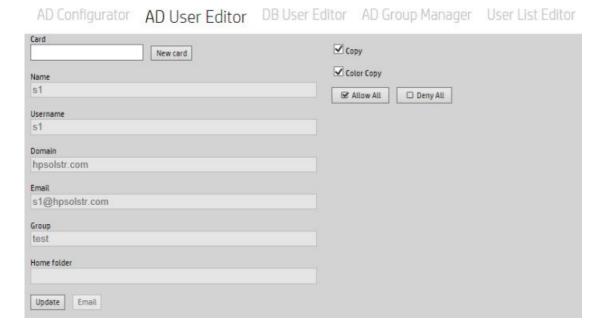
In the device's EWS ensure that the function is controlled by HPAC-DRA or HPAC-IRM and that the quest user is locked out (displays a lock icon).



In the IRM tile > DB User Editor you can search on the user and under the rights column it should show 1's (permitted access) or 0's (not permitted access).



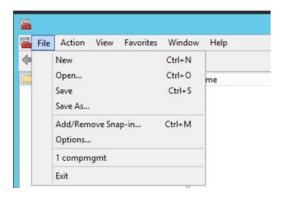
In the AD User Editor (IRM tile) check the rights for the individual user. Checked means that the user has access, unchecked means they will be forbidden access.



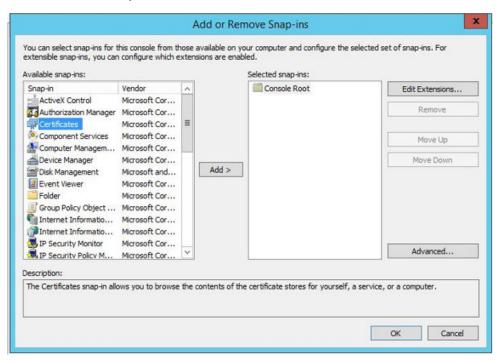
15.18 Reinstalling HP OPS

To reinstall OPS, the OPS certificates need to be deleted before reinstall as the certificate created by the new installation will not override the previous certificate.

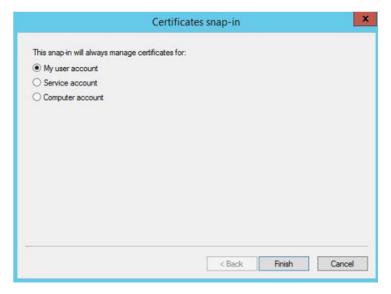
On the HP AC server, open Microsoft Management Console. Go to File and select Add/Remove Snap-in....



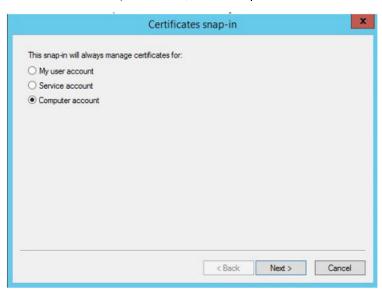
From the Available snap-ins section, select Certificates and then click Add.



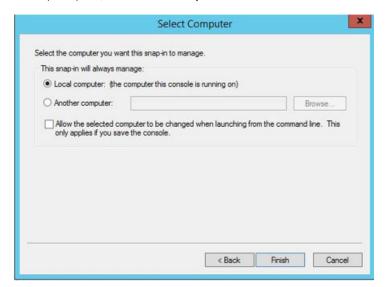
For Certificates snap-in, select My user account and click Finish.



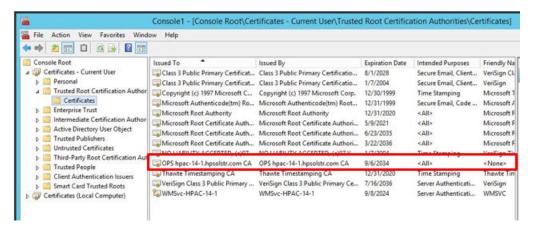
- Add another Certificate snap-in. 4.
- In the Certificates snap-in window, select **Computer account** and click **Next**.



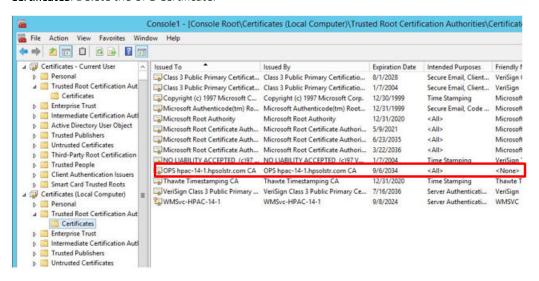
When prompted, select Local Computer. Click Finish and OK.



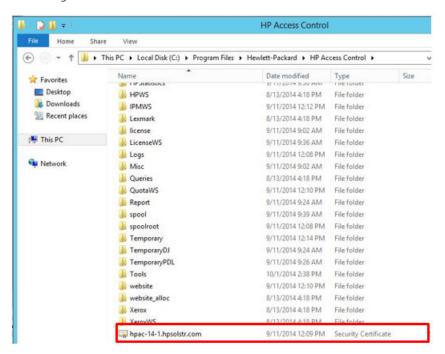
Under Console Root, select Certificates-Current User > Trusted Root Certification Authorities > Certificates. Delete the OPS certificate.



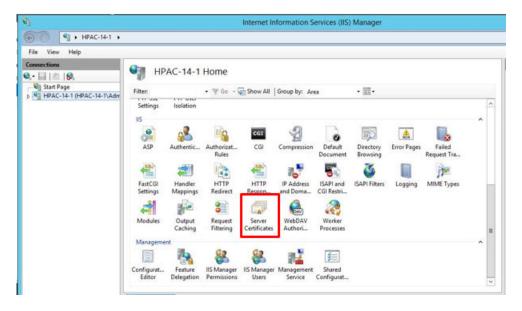
Under Console Root, select Certificates (Local Computer) > Trusted Root Certification Authorities > Certificates. Delete the OPS Certificate.



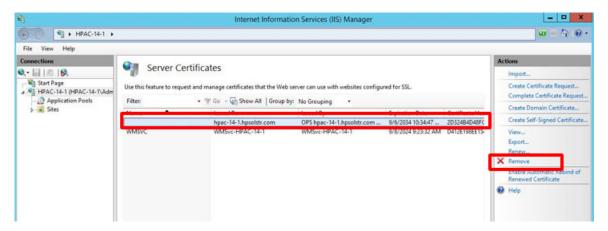
Go to Program Files > HP > **HP Access Control** folder and delete the OPS certificate.



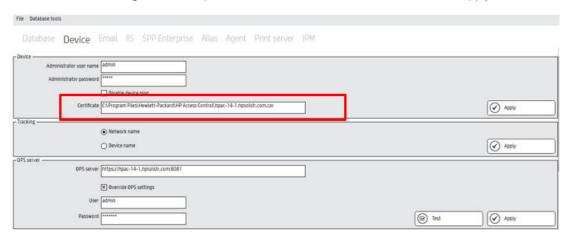
10. Open Internet Information Services (IIS) Manager and select local machine. In the center pane, double-click Server Certificates



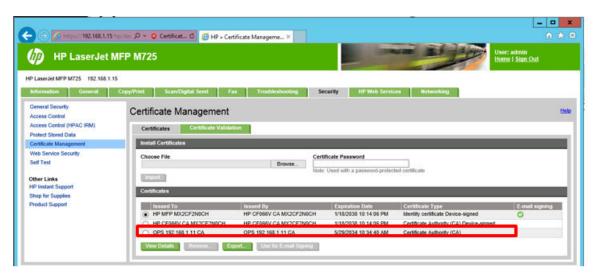
11. Select the OPS certificate and choose **Remove**.



12. Launch the HP AC configuration utility. Delete the text in the Certificate field and click Apply.



- 13. Remove the OPS certificate from all configured devices:
 - For HP FutureSmart and non-FutureSmart devices, go to the device's Embedded Web Server and navigate to Security > Certificate Management. Remove the OPS certificate.
 - For HP OfficeJet Pro devices, go to the Embedded Web Server and select Network > Certificates. Remove the OPS certificate.



14. Run the OPS installer from Program Files > HP > HP Access Control > Misc folder, and run opssetup.exe as an administrator.

15.19 Changing the drive where HP AC Enterprise stores pull print iobs

If you want to store pull print jobs in a different location other than the C drive, perform the following steps.

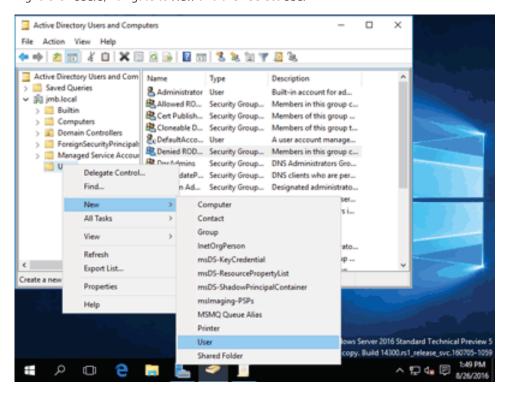
- After the installation is finished, stop the HP AC SPP Enterprise service.
- Move the \spoolroot folder and subfolders to the new local drive. This cannot be a network share or mounted drive.
- Open the \bin\vpsstart.ini file and enter the new location on the SERVROOT line.
- Save the file and restart the service after the folder has been moved.

15.20 Configure a user account to logon as a service without interactive logon rights

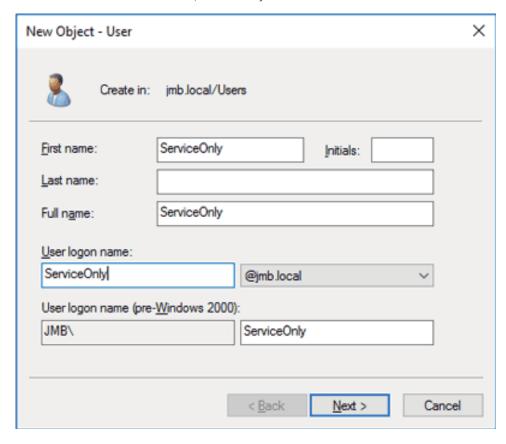
Complete the following procedure to configure a domain user with the ability to "logon as a service", and to deny their ability to perform an interactive logon.

Launch Active Directory Users and Computers.

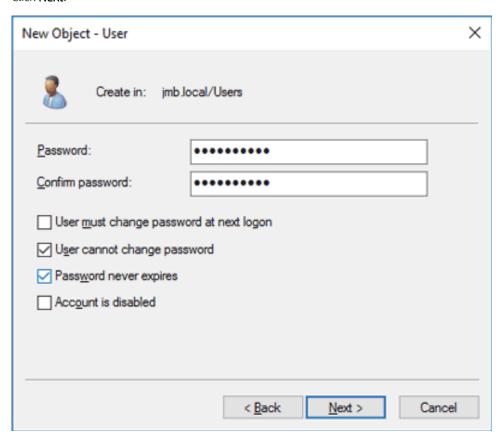
Right-click **Users**, navigate to **New** and then select **User**.



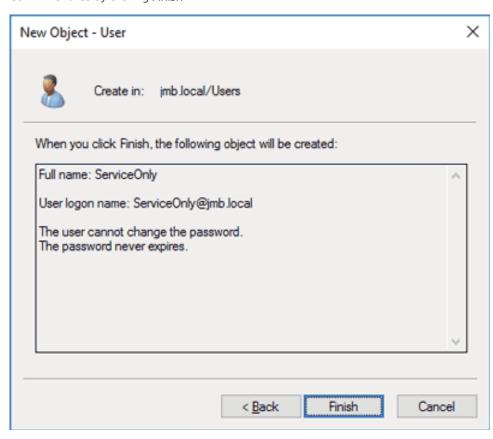
Enter the information for the new, service-only user and click Next.



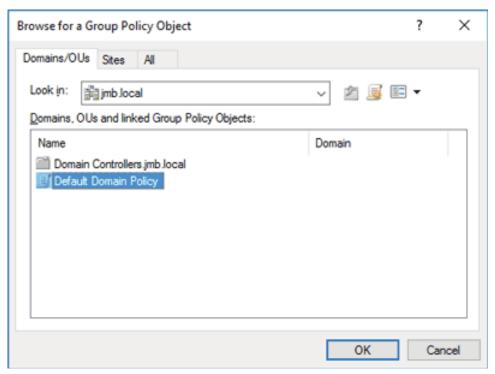
Enter a password. Make sure both **User must change password at next logon** and **Account is disabled** are both unchecked. Make sure **User cannot change password** and **Password never expires** are both checked. Click Next.



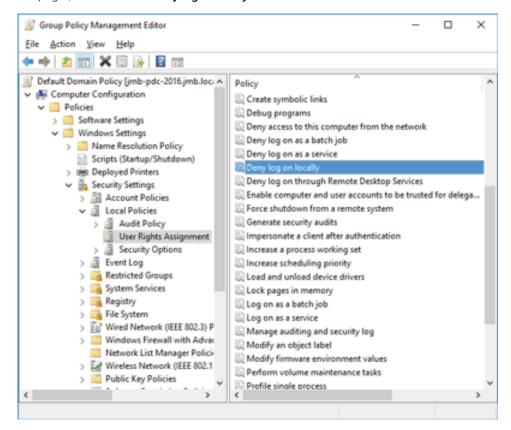
Confirm entries by clicking Finish.



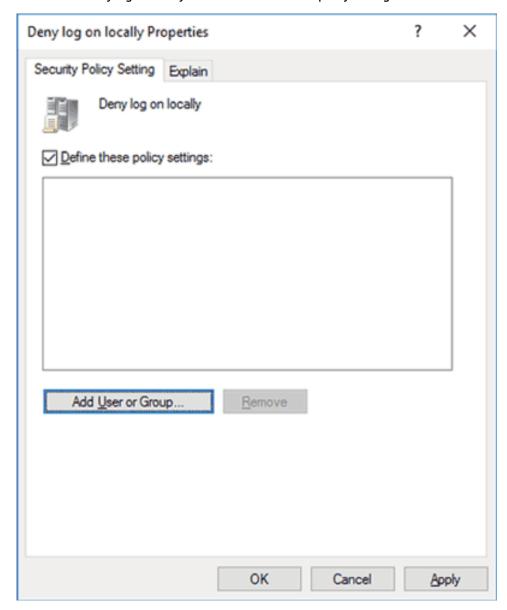
Launch the domain Group Policy Management Editor by typing "gpme.msc" at the Start menu. Double-click the **Default Domain Policy** entry in the **Domains, OUs and linked Group Policy Objects** section.



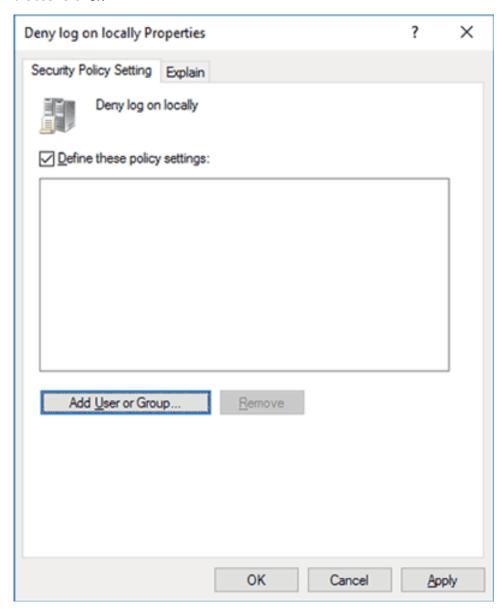
Under Default Domain Controllers Policy, expand Computer Configuration, Policies, Windows Settings, Security Settings, and Local Policies. Click User Rights Assignment. On the Policy list (on the right side of the page), scroll down to **Deny logon locally**.



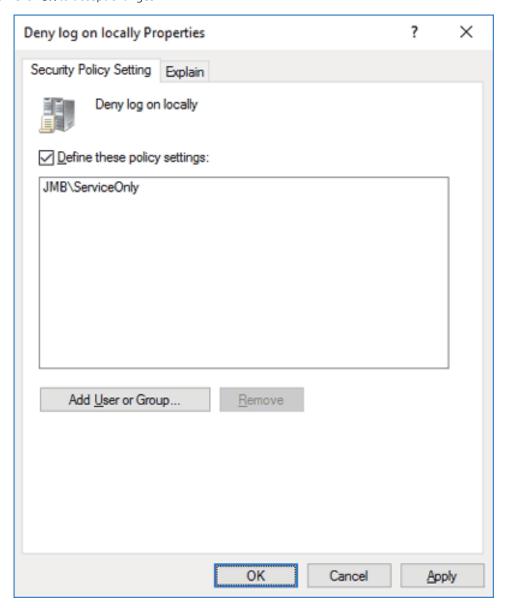
Double-click **Deny log on locally**. Make sure **Define these policy settings** is checked. Click **Add User or Group**.



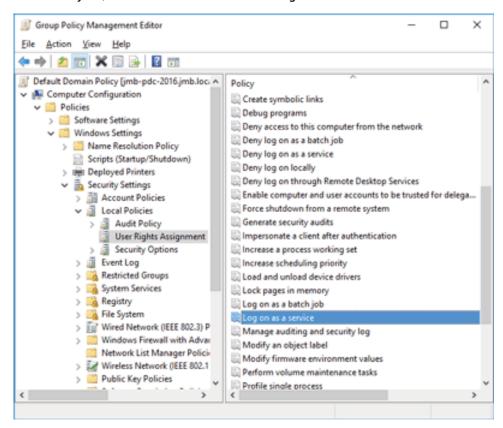
Enter the fully qualified username of the service user. It might be helpful to use the **Browse** button to locate the user. Click **OK**.



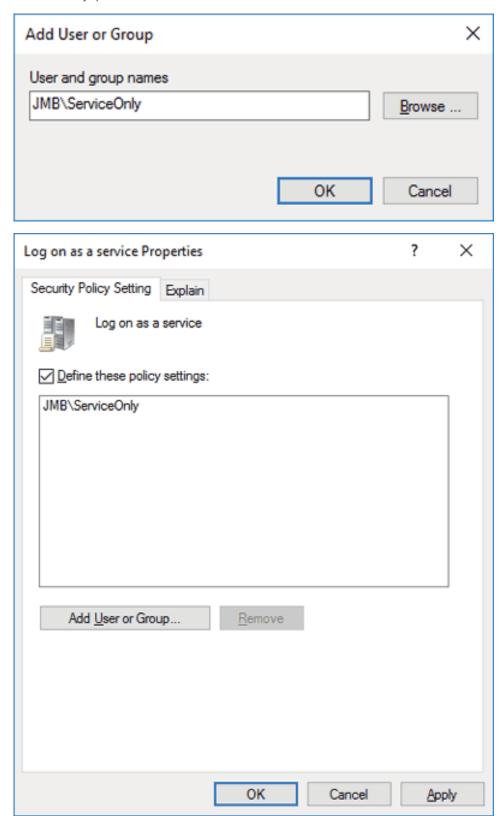
10. Click **OK** to accept changes.



11. On the **Policy** list, scroll down to and double-click **Log on as a service**.



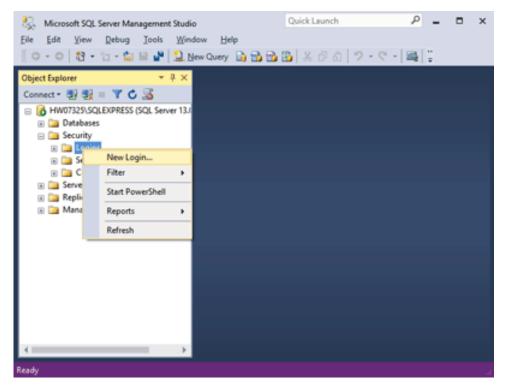
12. Enter the fully qualified username of the service user. Click **OK**.



The user for use only as a service is now properly configured.

Once the user is configured, give the user access to the SQL Server. These steps require that the optional Microsoft "SQL Server Management Studio" be installed:

- Launch the SQL Server Management Studio. Expand **Security**, right-click **Logins** and select **New Login**.
- 2. Create a new login with the "restricted rights" user.



NOTE: Make sure the service only account is a local admin on the HPAC server.

16 Appendix A: Network ports and firewalls

16.1 Secure Pull Print Server ports

Port	Inbound (to Server)	Outbound (to another)	Description	Used for
TCP 25 SMTP or TCP		1	Outgoing email notifications	(only required if email notifications are used)
587 TLS			(optional)	HP Access Control server to mail server. Using 587 will encrypt the mail. Used to send emails for Job Accounting, IPM notifications, Pull Print notifications, and Device Analysis scans.
TCP 80 HTTP		✓	Print device configuration	 Configuration data for multivendor devices
				 For configuration of HP devices. Initial communication with HP devices is via HTTP and is automatically switches to HTTPs
TCP 80 HTTP	1		Delegate/Group Printing (optional)	(only required if using Delegate/Group Printing - HP AC Enterprise only)
				For the HP AC Print Client to connect to the HP AC Pull Print Server and check the delegate and group print options.
TCP 110 POP3/995	✓	Pull Printing for email messages	(only required if mobile printing is used)	
SSL or 142 IMAP/993 SSL			(optional)	Allows users to email jobs for pull printing either over POP3 or IMAP. Default port for POP3 is 110, but can be encrypted using 995. Default port for IMAP is 142, but can be encrypted using 993. Choice is dependent on what the customer is using.
TCP 139, 145	✓		Windows shared queues (optional)	(only required if using Windows shared queues)
UDP 137, 138				Needed for Windows shared queues in the HP AC Server to be reachable from Client PCs to submit print jobs.
UDP 161 SNMP	✓	✓	Print Devices configuration	Non-FutureSmart device agent configuration
				Device discovery SNMP data
TCP 443 HTTPS	✓		Job list and job retrieval from print devices	Used for job list and job print / delete request for pull printing to HP AC Server from Print devices.
TCP 443 HTTPs	1		Job list and job retrieval from mobile devices (optional)	(only used when retrieving pull print jobs through mobile devices)
				Used for job list and job print / delete request for pull printing to HP AC Server from mobile devices.

	Configuration data for HP de OfficeJet Pro X, and licensing platforms.	Print device configuration	1		TCP 443 HTTPs
based Pull Printing - HP	(only when using Client-base AC Enterprise only)	Client-based Pull Printing Configuration	1		TCP 443 HTTPs
to the HP AC Server to	During configuration, the HF application will connect to the find some configuration para				
	(only required when using IF print devices – HP AC Enterp	Print job (optional)	✓		TCP 443 IPPS
	Used by SPP Enterprise to so devices using the IPP protocis the protocol chosen.				
	(HP AC Enterprise only)	Print job (optional depending on	✓	1	TCP 515 LPR
R print jobs. Specifies t SPP Enterprise will equests. This port	This is the default port that the use for inbound LPD/LPR prithe local TCP/IP port that SP open for inbound LPD requenumber can be changed.	config option)			
jobs are sent to the	For outbound, depending or selection on the server, jobs printer either to this port, or				
	(only required if print jobs ar HP Access Control server us - HP AC Enterprise only)	Print job (optional depending on config option)		1	TCP 631 IPP
	Used for inbound IPP connectients to the HP AC server.				
	(only used when Pull Print ro configured across multiple s Enterprise only)	Roaming for Pull Printing (optional)	✓	1	TCP 631 IPP
	Used for communication bet remote printing (roaming).				
obs, and for the primary IP AC Enterprise. Port and needs to match	Checking user alias with HP alias, groups, delegate jobs, license server with the HP A number is configurable and with SQL server settings.	HP Access Control server to SQL Server	✓		TCP 1433 SQL
t has XT Device	(only used when the fleet ha Controllers)	KT Device Controller configuration optional)	1		TCP 2000 TCP 2001
	Configuration files sent from server to XT Device Controlle				TCP 200 T
ed Pull Printing - HP AC	(used only for Client-based F Enterprise only)	Client-based Pull Printing (optional)		✓	TCP 5500
nd jobs metadata to the	Used by the Client to send jo server				
	(HP AC Enterprise only)	nternal			TCP 5501
	Used by the Enterprise spoorequests. Port number is con				
	(only used when the print fle OfficeJet Pro X Print Devices	nternal			TCP 5984
sp s o	server (HP AC Enterprise only) Used by the Enterprise sprequests. Port number is a construction only used when the print				

				Internal on HP Access Control server and is used to get OfficeJet Pro X devices configuration stored in the CouchDB. Port number is configurable.
TCP 7501		1	Client-based Pull Printing (optional)	(only required when Client-based Pull Printing is used - HP AC Enterprise only)
				Used by the HP AC Pull Print Server to launch a print or delete command to the client for client-based pull print jobs.
TCP 7627		1	Print Devices configuration (with HP FutureSmart firmware) (optional)	(only used when the print fleet contains HP FutureSmart Print Devices)
				Configuration of FutureSmart devices from HP Access Control server.
TCP 8081	1		Print Devices configuration (HP OfficeJet Pro X)	(only used when the print fleet contains HP OfficeJet Pro X Print Devices)
				Used for the configuration of HP OfficeJet Pro devices. When the device boots it will pull the configuration from the HP AC server from a web service that publishes this (OXPd Service). Port number is configurable.
TCP 9100		✓	HP Access Control Server sending configuration and print jobs to print devices	 Device agent installation (non-HP devices) Device configuration Print jobs from the HP Access Control server to the print device (optional, depending on print protocol)
UDP 11000	1	✓	XT Device Controller configuration (optional)	(only used when the fleet has XT Device Controllers)
				Device discovery with SNMP for XT Device Controllers
TCP 50080	1	✓	License information (optional)	(only enabled when multi-server Enterprise license is configured)
				Enterprise Licensing for HP AC Enterprise only. Used by Primary License server and Client License Server to exchange license information. Port is configurable but must be identical on the primary server and all client licensing servers.

16.2 Authentication Server ports

Port	Inbound (to Server)	Outbound (to another)	Description	Used for
TCP 389 LDAP		✓	User credentials & details check to Active Directory/LDAP server (optional)	Authentication credentials and user details check from HP AC Server to an AD/LDAP server, in case LDAP is used. Port number is configurable and needs to match with AD/LDAP server settings.
TCP 443 HTTPS	1		User credentials check to HP AC Server	HP Access Control Server from print devices and mobile devices. Authentication credentials

			check from printing device or mobile device to HP AC Server.
TCP 636 LDAPS	/	User credentials & details check to Active Directory/LDAP server (optional)	Authentication credentials and user details check from HP AC Server to an AD/LDAP server, in case LDAP over SSL is used. Port number is configurable and needs to match with AD/LDAP server settings.
TCP 1433 SQL	✓	User details check to SQL Server (optional)	Used to check user alias and delegate/group settings in the SQL database (off-server). Port number is configurable and needs to match with the SQL server settings.

16.3 Job Accounting and Intelligent Print management Server ports

Port	Incoming (Server)	Outgoing (Server)	Description	Used for	
TCP 21 FTP or TCP 80 HTTP	1		Job Accounting in-device tracking for HP non-FutureSmart-based	(only required for in-printer tracking in HP non- FutureSmart-based print devices)	
			print devices (optional)	Print device to send tracking data to Job Accounting server or to intermediate tracking server.	
TCP 21 FTP or TCP	1		Job Accounting Client PC tracking	(only required for tracking at Client PCs)	
80 HTTP			(optional)	Print device to send tracking data to Job Accounting server or to intermediate tracking server.	
TCP 21 FTP or TCP 80 HTTP or TCP 443 HTTPS	✓	✓ Job Accounting data consolidation across servers (optional)			(only required when tracking data is collected from other servers than the main Job Accounting Server)
			For either Print Servers with a tracking agent, Pull Print servers for deleted/expired jobs or any other distributed tracking data collector, to send that data to the main Job Accounting server.		
TCP 80 HTTP or TCP 443 HTTPS	1	Job Accounting in-Device tracking for HP FutureSmart print devices	(only required for in-printer tracking in HP FutureSmart print devices)		
			(optional)	Print device to send tracking data to Job Accounting server or to intermediate tracking server.	
TCP 80 HTTP	1		Quota (optional)	(only used with quota restrictions)	
				 HP printing devices to the quota web service in the HP Access Control Job Accounting server to check user's quota balance for copy and digital sending (only when using quota for MFP copy and/or digital send) 	
				 HP Access Control Print Client to the quota web service in the HP Access Control Job Accounting server to check the user's quota balance for printing (only when restricting print quota at Client PCs). 	

TCP 80 HTTP	✓		Allocation (optional)	(only when using the Allocation Client)
				Used by the Allocation client for PCs to check the allocation codes in the HP Access Control Job Accounting server.
UDP 161 SNMP	1	/	SNMP tracking (optional)	(only when using SNMP tracking through Direct Tracking Module) From HP Access Control server to devices to connect to the device's MIB for confirmation traps (DTM).
UDP 162 SNMP	✓	1	SNMP tracking (optional)	(only when using SNMP tracking through Direct Tracking Module)
			(ориотат)	From HP printing device to Job Accounting server. Used by trap service to listen for print job completion. This port can be changed.
TCP 1433 SQL		✓	Connection to external Job Accounting database (optional)	(only when using a SQL database in a different server than the Job Accounting one)
				HP AC Job Accounting server will connect to the database to do the needed transactions when entering data or when creating a report and reading the data. Port number is configurable and needs to match with the SQL server settings.

16.4 Client PC and Mobile Devices Ports and Applications

Port	Incoming (Client)	Outgoing (Client)	Description	Used for
TCP 80 HTTP		1	Card Enrollment Application (optional)	(only for Administration PCs when card enrollment is manually done from a PC)
				From the Enrollment application for PC to the HP Access Control server (AD-Authenticator). Can be configured as https if desired, using port 443.
TCP 80 HTTP		1	Rules-based printing (IPM)	(only required if using IPM)
		(optional)	IPM print client to connect to IPM web services in IPM Server for print rules check.	
TCP 80 HTTP		1	Delegate/Group Printing (optional)	(only required if using Delegate/Group Printing - HP AC Enterprise only)
				For the HP AC Print Client to connect to the HP AC Pull Print Server and check the delegate and group print options.
TCP 80 HTTP		1	Allocation (optional)	(only required when using the Allocation Client)
				Allocation client to connect to HP Access Control Server to check the possible Allocation codes.
TCP 139, 145		✓	Windows shared queues (optional)	(only when using Windows shared queues)
UDP 137, 138				

				Needed to connect to Windows shared queues in the HP AC Server from Client PCs to submit
TCP 443 HTTPS		✓	Mobile devices (optional)	print jobs. (only when using a mobile printing app)
10. 443111113		·	nobic devices (optional)	Mobile printing app in the mobile device connecting to the HP AC Server for Kerberos authentication, job list, and job retrieval.
TCP 443 HTTPS		1	Client-based Pull Printing configuration (optional)	(only when using Client-based Pull Printing - HP AC Enterprise only)
				During configuration, the HP AC Client application will connect to the HP AC Server to find some configuration parameters.
TCP 445	1		IPM notification (optional)	(only when using IPM Desktop Notification Agent)
				Named pipes from the HP AC Server to the client PC
TCP 445	1		HP AC Admin console web client (optional)	(only if using the web client version of the HP AC Admin Console)
				Used for communication between the admin console web service to the admin console web client.
TCP 515 LPR		1	Sending Pull Print jobs to HP Access Control Server (optional)	(only for server-based Pull Printing when sending jobs from the Client to the HP AC Pull Print Server with LPR protocol - HP AC Enterprise only)
				Sending pull print jobs through LPR from a Client PC with a local queue to the HP AC Server, in case this is the protocol chosen. This port number can be changed.
TCP 631 IPP		✓	Sending Pull Print jobs to HP Access Control Server (optional)	(only for server-based Pull Printing when sending jobs from the Client to the HP AC Pull Print Server with IPP protocol - HP AC Enterprise only)
				Sending pull print jobs through IPP from a Client PC with a local queue to the HP AC Server, in case this is the protocol chosen. This port number can be changed.
TCP 5500		1	PC client to HP Access Control Server (optional)	(only required when Client-based Pull Printing is used - HP AC Enterprise only)
				Used by the HP AC Enterprise print client to transfer job metadata from client PCs to the HP AC server when using local job storage. The port number is configurable.
TCP 7501	1		Delete and print commands from Server to Client (optional)	(only required when Client-based Pull Printing is used – HP AC Enterprise only)
				Used by the HP AC Pull Print Server to launch a print or delete command to the client for client-based pull print jobs.
TCP 7515			Job transfer between components (optional)	(only required when Client-based Pull Printing is used – HP AC Enterprise only)

			Internal port used by the pull print queue for local job storage.
TCP 50101	1	Rules-based Printing (IPM) (optional)	(only required when using IPM Desktop Notification)
			Print policy notification (IPM) with the IPM Desktop Notification Agent.
TCP 50102	1	Rules-based Printing (IPM) (optional)	(only required when using IPM Opt-in/Opt-out rules)
			Opt-in/Opt-out notification from the HP Access Control server to the client

16.5 Print device ports

Port	Incoming (Print device)	Outgoing (Print device)	Description	Used for
TCP 21 FTP or TCP 80 HTTP		✓	Print Devices to HP Access Control Job Accounting Server (optional)	(only required for in-printer tracking in HP non- FutureSmart-based print devices)
				Print device to send tracking device to Job Accounting server or to intermediate tracking server.
TCP 80 HTTPS	1		Configuring Print Devices	Configuration data from server to printer
TCP 443 HTTPS				
TCP 80 HTTP or TCP		/	Pull Print jobs metadata and	(only when using Pull Printing)
443 HTTPS			commands (optional)	Job list inquiry and job accounting data (unless SSL is configured)
UDP 161/UDP 162	1	1	Print devices configuration	Printer Discovery during the configuration.
TCP 443 HTTPS		1	Authentication (optional)	(only when using authentication)
				Authentication data exchanged with HP AC Server
TCP 443 HTTPS	1		Pull Print jobs (optional)	(only when using Pull Printing)
				Sending pull print jobs from the HP AC Server (for server-based pull printing) or from the client (for client-based pull printing) (used depending on the print protocol chosen).
TCP 515 LPR	1		Pull Print jobs (optional)	(only when using Pull Printing)
				Sending pull print jobs from the HP AC Server (for server-based pull printing) or from the client (for client-based pull printing) (used depending on the print protocol chosen).
TCP 7627	1		HP Access Control server to print	(only for FutureSmart devices)
			devices (optional)	Configuration of HP FutureSmart devices by the HP AC Server configuring the Print Devices.
TCP 8081		✓	Configuration (optional)	(only for OfficeJet Pro X devices)

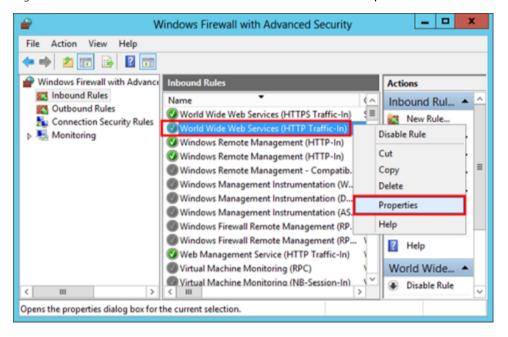
			Configuration of OfficeJet Pro X devices, pulled by the OfficeJet Pro X device.
TCP 9100	✓	Configuration	Printer configuration by HP AC Server.
TCP 9100	✓	Print jobs (optional)	(only when using Pull Printing)
			Sending pull print jobs from the HP AC Pull Print Server (for server-based pull printing) or from the client (for client-based pull printing) (used depending on the print protocol chosen).

16.6 Firewall

To establish reliable connections between the server and devices, it is highly recommended to turn off the Windows Firewall on the HP Access Control server.

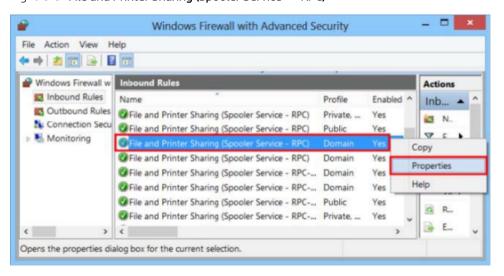
However, if the firewall cannot be turned off, perform ONE of the following steps to establish stable communication with devices:

- Allow the server to accept inbound packets from devices that have passed through the firewall by changing the World Wide Web Services properties
 - On the HP Access Control server, go to Control Panel > Windows Firewall > Advanced Settings > 1. Inbound Rules.
 - 2. Right-click World Wide Web Services (HTTP Traffic-In) and select **Properties**.

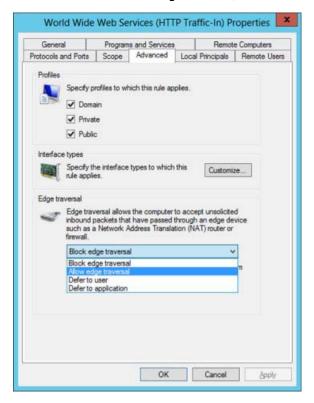


- In the Advanced tab under Edge traversal, select Allow edge traversal. Click OK.
- Allow the server to accept inbound packets from devices that have passed through the firewall by changing the Spooler Service properties.
 - On the HP Access Control server, go to Control Panel > Windows Firewall > Advanced Settings > Inbound Rules.

Right-click File and Printer Sharing (Spooler Service — RPC) 2.

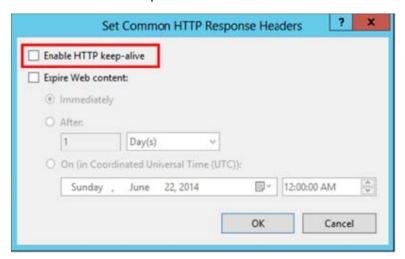


In the Advanced tab under **Edge traversal**, select **Allow edge traversal**. Click **OK**. 3.



- Disable the HTTP keep-alive response header to force new connections to be established between the server and devices.
 - Open Internet Information Services (IIS) Manager and go to the local machine > Sites > Default Web
 - 2. Double-click HTTP Response Headers.
 - 3. In the Actions page on the right, click **Set Common Headers**

Unselect **Enable HTTP keep-alive** and click **OK**. 4.



17 Appendix B: Remote SQL Server requirements

17.1 HP Access Control (HP AC) Job Accounting Remote SQL Server

If the remote SQL Server is running SQL 2005 or a later version, the database must be created using a SQL login. The setup will not create a SQL login for HP AC Job Accounting, and a trusted connection will be used with named pipes. The Job Accounting Agent must be started with a domain account to connect to the remote database.

If the remote server is running SQL 2000 version, either Windows or SQL authentication can be used to create the database. The setup will not create a SQL login for Job Accounting, and a trusted connection will be used with named pipes. The Job Accounting Agent must be started with a domain account to connect to the remote database.

17.2 Database access when HP Access Control (HP AC) Job Accounting is installed using a remote SQL Server

When the Job Accounting database is installed on a remote server, the database connection must be configured for the following activities:

- To allow Job Accounting to process job accounting files.
- To allow the end user to connect to the Job Accounting website to schedule and view reports.

Two methods are available to connect to the remote database: Windows Authentication and SQL Authentication.

17.2.1 Using Windows Authentication (default)

When Windows authentication is used, anonymous authentication must be enabled in IIS using a Windows account with database access to the Job Accounting database. The Job Accounting Agent service must be started with the same account.

- Create a Windows account with dbo access to the Job Accounting database.
- 2. Log onto the Job Accounting application server using your new Windows account login information (Step 1, above).
- From your desktop, navigate to Start > All Programs > HP Access Control, and click Configuration Utility. 3.
- 4. Go to the **Options** tab and select **Database Server**.
- 5. Select Windows authentication.
- Unselect Local System account. 6.
- Enter the Windows account user and password (created in step 1) to replace 'Local System'. This login will be used to start the HP AC Job Accounting Agent service and for **Anonymous Authentication** in IIS.
- 8. Select Enable IIS anonymous authentication.
- Select **Restart services after update**.

17.2.2 Using SQL Authentication

When SQL authentication is used, the SQL password will be stored non-encrypted in the HP AC Job Accounting Agent service configuration file (Agent.exe.config). The HP AC Job Accounting application will store the SQL password encrypted in the registry.

- Create a SQL user and password on the remote SQL Server and give this account dbo access to the HP AC Job Accounting database.
- 2. From your desktop, navigate to Start > All Programs > HP Access Control, and click Configuration Utility.
- 3. Go to the **Options** tab and select **Database Server**.
- Select **SQL** Authentication and enter the SQL login and password you created above (Step 1). 4.
- Un-select **Use Local System account**. 5.
- Enter a Windows domain user account and password to replace 'Local System'. This login will be used to start the HP AC Job Accounting Agent service. This step is required for Active Directory connection and if polling mode is selected. This login does not require any access to the database.
- Unselect Enable IIS anonymous authentication. 7.
- Select **Restart services after update**.

17.2.3 Common steps for Windows and SQL authentication

Common steps for Windows and SQL authentication include the following:

- Click **Test connection.** If any errors are reported for the database connection or HP AC Job Accounting Agent login, verify that the login has access to the database and credentials to start a service.
- 2. Click **Update**. A series of popup messages displays:
 - Database connection updated successfully
 - Service login changed successfully
 - ApplicationPool created successfully
 - IIS anonymous authentication changed successfully
 - Agent configuration updated successfully
 - Quota web service configuration updated successfully
 - Report server configuration updated successfully
 - Report manager configuration updated successfully
 - HP AC Job Accounting Agent service restarted
 - w3svc service restarted
 - HP AC Job Accounting Agent service restarted
- Log on to HP AC Job Accounting and run a simple report.

18 Appendix C: Installing and configuring HP AC on the Scanjet Enterprise 8500

18.1 Overview

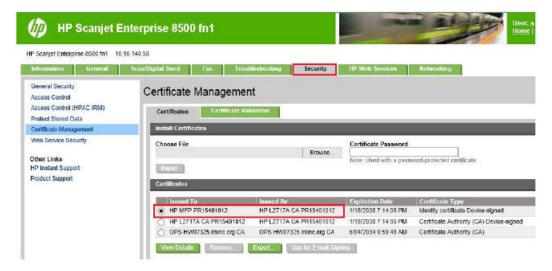
This section provides the steps necessary to install and configure the HP AC agent to utilize card or code authentication on the HP Scanjet 8500 xx. The HP AC Admin Console utilizes port 9100 to install and configure the solution. Previous generations of Scanjets had supported port 9100, however, this port is no longer supported on the SJ 8500, and an alternate method of installation and configuration was required. This section outlines the steps to install and configure HP AC on an individual basis.



NOTE: This configuration does not support Scan to Home Folder workflow.

Prerequisites

- Verify the password has been set in the EWS.
- It is suggested, but not required, to perform a partial disk clean.
 - CAUTION: Stored information and settings may be lost when performing a partial disk clean.
- Open the printer EWS and check for a valid certificate. The example below is pointing to a certificate installed on an HP MFP.



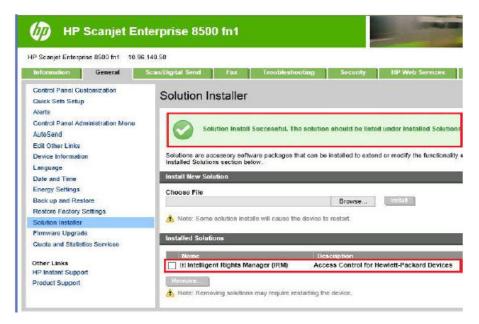
18.2 Installing the Agent

Go to the device EWS > General tab > Solution Installer page.

- Click Choose File, browse to the location of where the HP AC Agent is stored, and select the HP AC Agent BDL file. Then click the **Install** button.
 - NOTE: The current build is HPAC-SPPE-Agent-XXXXXXXX-FutureSmart-10.bdl. Please note that this may change, so it is important that you have the most current version.



After the HP AC Agent file is successfully installed, Intelligent Rights Management Manger (IRM) displays under the Installed Solutions section.



18.3 Configuring the Agent

Go to the device EWS > Security tab > Access Control (HPAC IRM) page.

Under the Authenticators section, select the HPAC - IRM Server checkbox. Then click Update. You will notice that the solution is not licensed. The following steps will address licensing the product.



In the printer's URL, append the following "?page=services" and hit enter. Your URL string should now look like the example below:

🞒 https://10.96.140.50/hp/device/Solution.AccessControl.Jedi.WebSetup/Index?page=services

In the License Service URI field, enter the following:

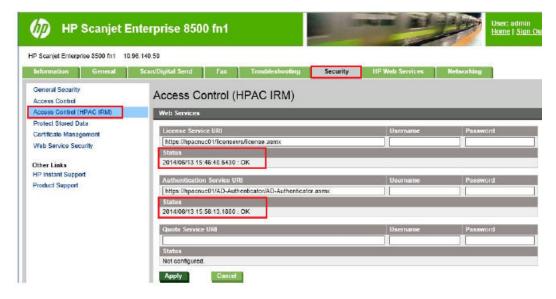
https://HPAC serverIP or DNS/licensews/license.asmx

In the Authentication Service URI field, enter the following:

https://HPAC server IP or DNS/AD-Authenticator/AD-Authenticator.asmx Click **Apply**.



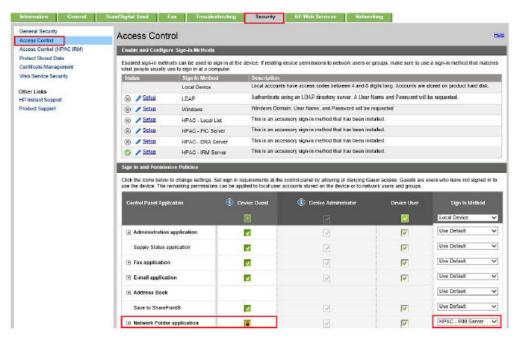
Powercycle the device and review the Access Control (HPAC IRM) page to ensure the settings have not changed.



Check to see the license is now valid. There should be no error message displayed at this time.



Go to the Security tab > Access Control page. Configure the **Network Folder** application to use **HP AC – IRM Server** as the Sign In Method. Remember to press **Apply** after changing the setting.



Install the reader and configure your Scan to Folder as required.

NOTE: If you change the authentication method in IRM, make sure to go to the https://serverIP/hp/ device/Solution.AccessControl.Jedi.WebSetup/Index?page=servicespage and click **Apply** to reapply the IRM settings.