

HP Web Jetadmin



HP Web Jetadmin Reference Manual

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Documentation conventions

This document uses the conventions described below.

Bold

Bold is used to identify the names of options, buttons, and pages within HP Web Jetadmin software.

Italic

Italic is used for emphasis.

Monospace font

Monospace font is used to identify a command that the user types.

Blue, underlined text

Blue, underlined text is used to identify hypertext links. Depending on the settings in a particular browser, these links might be formatted differently.

Page references

HP Web Jetadmin documentation contains references to pages within the software. These references tell you how to navigate to that page using the expandable tree in the **Navigation** area. For example, to navigate to the **Device Management > Device Lists > All Devices** page, expand the **Device Management** folder, expand the **Device Lists** folder, and then select **All Devices**.

Notes, cautions, and warnings



NOTE Notes contain important information.



CAUTION Caution messages appear before procedures that, if not observed, could result in loss of data or damage to equipment.



WARNING! Warning messages alert the reader to a specific procedure or practice that, if not followed correctly, could cause personal injury or catastrophic loss of data or equipment.

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Section 1

Introduction to HP Web Jetadmin

This section contains the following:

[Chapter 1, Introducing HP Web Jetadmin](#)

[Chapter 2, Documentation](#)

[Chapter 3, Getting started for the first-time administrator](#)

[Chapter 4, Planning and implementing HP Web Jetadmin](#)

1 Introducing HP Web Jetadmin

This section covers the following topics:

- [HP Web Jetadmin overview](#)
- [Integrating HP Web Jetadmin into the network](#)
- [Security](#)
- [Benefits for network administrators](#)
- [Benefits for the help desk](#)
- [Benefits for other network users](#)

HP Web Jetadmin overview

Every network administrator wants better performance on his or her network. Carefully managing network-connected devices, such as HP printers, scanners, multifunction products, and print server appliances, can go a long way toward improving performance. HP Web Jetadmin allows you to manage and optimize network-connected devices. The HP Web Jetadmin intuitive browser interface lets you remotely manage a wide range of network-connected devices across platforms and from anywhere in the world with access to your local intranet.

HP Web Jetadmin provides a simple, comprehensive way to proactively manage network peripherals and optimize printing productivity. Key printer information, such as capabilities and status, helps you keep network printers functioning smoothly, anticipate and resolve problems with minimal user impact, and generally stay one step ahead of users demands.

Use HP Web Jetadmin to perform the following management tasks:

- create print queues
- configure printer options
- create multiple print queues at once
- troubleshoot printer problems
- schedule discoveries to update the device cache during off-peak hours
- search for a specific printer or group of printers based on a wide variety of criteria, such as IP address, color capability, or model name
- check the current status of a printer
- check the status of printer consumables, such as paper and ink levels
- verify the type of media loaded in printer trays
- verify the capabilities of a printer
- organize printers in logical groups
- create a virtual office layout with dynamic site maps

Do all this, and more, with multiple levels of security. HP Web Jetadmin saves time, increases user productivity, and reduces the total cost of ownership for network peripherals.

Ease of use

HP Web Jetadmin has an integrated Web server, which means that installation is easy. You do not have to install any client software. You can also configure printer options for multiple HP Jetdirect-connected printers at the same time.

Enhanced print job management capabilities

Prior to our current, sophisticated network technology, printer administrators focused much of their efforts on managing the jobs that users sent to printers. Although this constitutes only a small percentage of network printer administration, it continues to be an important function. The high volume of printing tasks that current network printers must process requires an effective solution for accommodating changing print job priorities and resource requirements.

Network administrators and help desk personnel can use HP Web Jetadmin to ensure that jobs flow smoothly through the network printers and to implement changes with minimal impact on user productivity. For example, they might use HP Web Jetadmin to perform the following tasks:

- check print job status
- verify information about a print job, such as the print job owner
- verify that appropriate media is loaded

Timesaving features

HP Web Jetadmin saves time in many ways.

- Remote status, diagnostics, and configuration information helps identify and resolve printing problems before user productivity is affected.
- The configurable alerts feature sends email notifications to the appropriate person as soon as printer problems occur.
- The most advanced discovery feature reliably finds devices on the network and adds them to a device cache, eliminating the need to manually enter information about each device into the device cache.
- General device searches, or searches for devices based on specific criteria such as IP address, color capability, or device model, make it easy to find and manage devices.
- The device group and site map features organize devices into workgroups with virtual office maps for easy management.
- The enhanced consumables status feature uses HP toner gauge technology to provide toner and paper consumables status for selected HP devices.



NOTE HP Web Jetadmin provides a toner gauge for any Standard Printer MIB-compliant printer.

Integrating HP Web Jetadmin into the network

HP Web Jetadmin supports the broadest range of printers, peripherals, server platforms, and browsers in the industry. HP Web Jetadmin provides the industry with the most complete multi-vendor printer management solution using the Standard Printer Management Information Base (MIB), which is defined by Request for Comments (RFC) 1759.

If you prefer to manage printers from within your existing network or systems management packages, HP Web Jetadmin integrates into several of the most widely used solutions, including HP Systems Insight Manager and HP OpenView Network Node Manager.

Protocol support

HP Web Jetadmin supports both TCP/IP and IPX/SPX protocols.

HP Web Jetadmin supports Internet Protocol version 4 (IPv4), which is the current Internet Protocol standard. With the expanding use of network addresses a new version, Internet Protocol version 6 (IPv6), is being developed. One of the main differences between the two versions is that IPv4 supports 32-bit IP addresses compared to IPv6 which supports 128-bit IP addresses. While HP Web Jetadmin does not support IPv6, you can use HP Web Jetadmin to view some IPv6-specific information and configure limited IPv6 settings on IPv6-capable devices. If the device has IPv6 capabilities, you can access the configuration options on the **Device Configuration** or **Multiple Device Configuration** pages.

Supported platforms

See the readme file for a list of the operating systems that HP Web Jetadmin supports.

Network printer support

See the readme file for a list of the operating systems that allow HP Web Jetadmin to create print queues.

Network peripheral management support

HP Web Jetadmin provides complete printer management software. HP Web Jetadmin can manage all HP and non-HP printers that are connected through HP Jetdirect print servers, and all Standard Printer MIB-compliant, third-party, network-connected printers.






NOTE HP Web Jetadmin supports HP Embedded Jetdirect-connected devices.

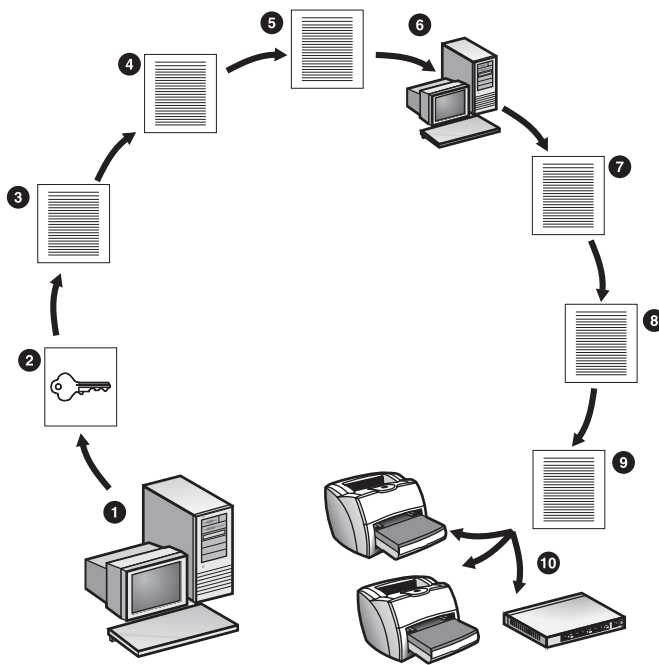
Browser support

HP Web Jetadmin supports Mozilla Firefox for Linux environments and Microsoft® Internet Explorer for Windows environments. See the readme file for a list of the versions that HP Web Jetadmin supports.

Security

HP Web Jetadmin provides several levels of security that allow you to customize and protect device management on the network. The following diagram shows these levels of security.

Icon	Description	Icon	Description
	HP Web Jetadmin host machine		Print Server Appliance
	Printer		



1	HP Web Jetadmin user — Starts the process of accessing HP Web Jetadmin.
2	SSL/TLS — Encrypts information passed between the HP Web Jetadmin host machine and Web browsers using HTTPS, which protects any sensitive information, such as Windows NT® passwords.
3	Allow list — Limits HP Web Jetadmin access to machines with specific IP addresses.
4	Login passwords — Prevents unauthorized users from accessing HP Web Jetadmin and determines which functions and features authorized users can access within HP Web Jetadmin. Assign passwords to profiles in HP Web Jetadmin or you can use the Windows NT domain authentication feature to associate Windows NT domain users and groups to profiles.
5	Profiles — Controls which product features various classes of users can access. For example, you can use profiles to prevent unauthorized users from changing system-wide settings, starting discoveries, and creating device groups.
6	HP Web Jetadmin host machine — Allows access to the HP Web Jetadmin host machine.
7	Device group password — Prevents unauthorized users from making changes to a device group.
8	Individual device password — Prevents unauthorized users from changing network device settings.



NOTE HP Web Jetadmin product teams continue to strive toward greater simplicity in managing device security. The device password has been a part of the HP Web Jetadmin security feature set for several years but will be discontinued in future releases of this software. Other security features such as SNMPv3 will continue to enable device security. For more information regarding HP Web Jetadmin and device security, go to <http://www.hp.com/go/webjetadmin>.

- 9 SNMPv3 — Secures communications between HP Web Jetadmin and network devices. HP Web Jetadmin uses SNMPv3 to prevent unauthorized users from viewing or changing network device settings.
 - 10 Devices — After all levels of security are validated, the HP Web Jetadmin user can access a device, such as a printer.
-

Additionally, Web browsers and intranets have vendor-supplied security measures of their own, and HP Web Jetadmin works within these environments.

Benefits for network administrators

HP Web Jetadmin provides numerous benefits for network administrators.

Economical

Download HP Web Jetadmin free of charge from the HP Web site. To download a copy of HP Web Jetadmin, go to <http://www.hp.com/go/webjetadmin>.

If you already have a corporate intranet set up, HP Web Jetadmin integrates into the intranet seamlessly. If you do not, there is no need to purchase Web server software separately because HP Web Jetadmin acts as its own Web server.

Installs quickly and easily

You only have to install HP Web Jetadmin once on a machine that is centrally accessible on the network.

You do not have to configure the Web server. HP Web Jetadmin sets up the Web server automatically.

You do not have to install special software on client workstations. Only a supported Web browser is required.

Consistent look and feel

HP Web Jetadmin looks and works the same regardless of which operating system the workstation is running or which platform HP Web Jetadmin is running. HP Web Jetadmin remains consistent even if you are managing devices that run on different network operating systems or platforms.

Convenient

Use HP Web Jetadmin to perform the following tasks:

- Configure and diagnose printers and create print queues remotely, all from one software package.
- Configure multiple devices at once, eliminating the need to type configuration options multiple times.
- Configure alert notifications for a single device or for multiple devices.
- Update firmware. You no longer have to use separate downloaders for devices in different environments or manually find new firmware images on the Web.
- Access HP Web Jetadmin from any location that lets you connect to your corporate intranet. For example, you can respond to a pager call immediately, no matter where you are.
- Use the search function to quickly find devices. Search for devices based on criteria such as capabilities, status, location, or model name.
- Check device status, diagnose problems, and often put printers back online or reset them remotely.
- Monitor the toner and ink levels in devices remotely. Proactively order and replace consumables, minimizing downtime.
- Create groups of printers, scanners, and other devices to manage resources more easily.
- Manage groups of devices from a remote location, which gives you and your users greater flexibility.

- Create an image map that displays a group of devices and shows their locations.
- Assign device group ownership so other users can change devices in groups, add new devices, or remove devices without your help.

Third-party vendor support

HP Web Jetadmin supports devices from many third-party vendors. These devices must be Standard Printer MIB compliant.

If you have a third-party device, you can use HP Web Jetadmin to remotely accomplish tasks on the device including the following:

- View status information.
- View and change configuration options.
- View diagnostic information.
- View the embedded Web server.
- Print a test page.
- Configure alert properties.



NOTE Some third-party manufacturers offer third-party plug-ins that add functionality to HP Web Jetadmin. For example, a third-party plug-in can add the ability to view and change additional device configuration options using HP Web Jetadmin. See [Discovering third-party devices](#) for more information.

Extensive diagnostics

HP Web Jetadmin provides the most extensive diagnostics available in any Web-based device management package.

Enhanced feature set

HP Web Jetadmin provides an enhanced feature set, including the following:

- scheduled discoveries
- multiple device configuration
- customized site maps
- device group management
- multiple levels of security
- support for HP device alerts
- cross-platform firmware downloader
- toner and ink gauges

Benefits for the help desk

Using HP Web Jetadmin, help desk personnel are better able to assist users. From a local or remote location, they can perform the following tasks:

- check the status of network devices
- determine which printers support the features that particular jobs require and which ones can print jobs most efficiently
- receive email notification of device problems through configurable HP device alerts
- determine what type of intervention a printer needs, such as adding toner or paper
- find out who is responsible for a device and let that person know when the device needs intervention
- turn HP Jetdirect print servers and some printers off and on remotely
- put some printers back online remotely

Even if your company outsources help desk support to third-party vendors, HP Web Jetadmin provides effective device support with minimal training. You do not have to be a Microsoft Certified Support Engineer or a Certified Novell Engineer to use the HP Web Jetadmin intuitive Web browser interface.

Benefits for other network users

HP Web Jetadmin also provides several benefits for other network users. Using HP Web Jetadmin, they can perform the following tasks:

- View the status, configuration, and capabilities of printers, scanners, and other devices.
- Quickly find the devices that they need to use. Users can search for devices based on criteria such as capabilities, status, location, or model name.
- View the device groups that you have set up, as well as monitor the status of those devices.

Allowing other network users to perform these simple tasks reduces dependence on network administrators and help desk personnel, freeing their time for other tasks.

2 Documentation

This section covers the following topics:

- [Documentation overview](#)
- [Browsable help](#)
- [Context help](#)
- [Printable manual](#)

Documentation overview

HP Web Jetadmin provides documentation in three formats: browsable help, context help, and a printable manual. The following sections discuss each of these formats.

Browsable help

The browsable help contains conceptual information about HP Web Jetadmin features. Access the browsable help directly from anywhere within HP Web Jetadmin.

To access the browsable help

1. In the **Navigation** area, expand the **Help** folder.
2. Select **HP Web Jetadmin**.

When you expand the **HP Web Jetadmin** folder, you can access the **Glossary**, **Index**, **Readme**, **License**, **About**, and **Feedback** pages.

Context help

Each page in HP Web Jetadmin has a help icon on the content toolbar. When you click the help icon, HP Web Jetadmin displays context help for that page. By default, HP Web Jetadmin displays context help in a separate browser window. However, you can configure profiles to display the context help within the page. See [Integrated context help](#) for more information.

The purpose of the context help is to provide only the information you need for the page you are on, the task you are performing, or a specific option. This means that the text in the context help is much shorter than the printable manual or browsable help. If you need more information about a concept or task, look in the browsable help or your printed manual.

Some pages in HP Web Jetadmin have a help icon next to a text box or option. When you click the help icon, HP Web Jetadmin displays specific information about that particular text box or option.

The drop-down list in the **Context Help** area has three options: **What**, **Why**, and **How**. The information that HP Web Jetadmin displays in the **Context Help** area depends on which one of these options you select. The **What** option provides a general description of the page, topic, task, or option. The **Why** option provides a general description of why you should be concerned about that page, topic, task, or option. It also describes the impact the settings on that page have on network performance. The **How** option provides instructions for the tasks you can perform on that page.

Printable manual

The printable manual is a Portable Document Format (PDF) file that you must download from the HP Web site. This manual contains all of the information that the browsable help contains.

To view the PDF file, you must install Adobe® Acrobat® Reader. Once you open the PDF file in Adobe Acrobat Reader, print the entire manual, the current page, or a range of pages.

3 Getting started for the first-time administrator

This section is a guide to help you get started with HP Web Jetadmin. Use this chapter as a checklist when implementing HP Web Jetadmin.



NOTE Even though HP Web Jetadmin provides many features, you do not have to use them all. For example, if you have a small network, it might not be necessary for you to create device groups and site maps or use the multiple device configuration feature.

Install HP Web Jetadmin

HP Web Jetadmin requires minimal effort to install. See [Chapter 5, Installing HP Web Jetadmin](#) for instructions.

Configure discovery methods

Configure the way that HP Web Jetadmin finds devices on the network. See [Chapter 14, Overview of discovery methods](#) for instructions.

Customize HP Web Jetadmin

Configure the options that determine how HP Web Jetadmin looks and works. See [Customizing HP Web Jetadmin appearance](#) and [Customizing HP Web Jetadmin functionality](#) for instructions.

Set security options

HP Web Jetadmin provides multiple levels of security that let you control who can access the product and its features.

- By default, HP Web Jetadmin is accessed by all browsers using the SSL/TLS protocol. To access this setting, go to the **General Settings > Security > SSL/TLS** page. You can also specify the level of encryption that the browsers use from this page.
- Create an allow list that limits HP Web Jetadmin access to machines with specific IP addresses. See [HTTP \(Web\) settings](#) for instructions.
- Assign a password to the Admin profile, preventing unauthorized users from changing system-wide settings, starting discoveries, or creating device groups. See [Profile passwords](#) for instructions.
- Create multiple profiles for various classes of users. Through these profiles, you can control which product features a class of users can access. See [Chapter 10, Configuring profiles](#) for instructions.
- If you create profiles, you can associate Windows NT domain users and groups with those profiles. By associating Windows NT domain users with profiles, those users do not need to learn a new

password for the profile; they can use their current Windows NT domain user name and password. By associating Windows NT groups with profiles, you can save time by authorizing access to HP Web Jetadmin for multiple users at one time. See the context help for **General Settings > Profiles Administration > Authentication** page for instructions.

- Assign device group passwords that prevent unauthorized users from making changes to a device group. See [Device group security](#) for instructions.
- Assign individual device passwords that prevent unauthorized users from changing network device settings. See the context help on the **Device Configuration** page for instructions.
- Configure individual devices to use SNMPv3, which prevents unauthorized users from viewing or changing network device settings. See the context help on an SNMPv3-capable **Device Configuration** page for instructions.

Manage certificates

Create self-signed certificates, create certificate-signing requests, and install certificates signed by a third-party Certificate Authority. See the context help on the **General Settings > Security > SSL/TLS** page for instructions.

Find devices

Search for devices on the network, filter a device list based on specific criteria, and sort device lists by a specific column. See [Chapter 23, Searching for devices](#) and [Sorting lists](#) for instructions.

Create a print queue on a host machine

Remotely create print queues on a host machine. See the following chapters for instructions that are appropriate for your network:

- [Chapter 17, Managing print queues](#)
- [Chapter 18, Managing Novell print queues](#)

Create device groups

Create device groups that organize devices by specific criteria, such as location or department. See [Creating device groups](#) for instructions.

Add devices to a device group

Add devices, such as printers and scanners, to device groups. See the context help on the **Device Management > Device Groups > group name** page for instructions.

Configure multiple devices

Configure two or more devices at once, assigning the same values to selected options. See [Multiple device configuration](#) for instructions.

Upload and edit maps

Assign predrawn site maps to device groups, showing device locations. See [Chapter 29, Managing site maps](#) for instructions.

Select a default view for device groups

Change the way device groups display. Map view displays the devices in a group graphically while Devices view displays the devices in a list. See [Default device group view](#) for instructions.

Select a default device group

Assign a default device group that displays each time a user starts HP Web Jetadmin in a browser, when a user clicks the home icon on the content toolbar, or when a user clicks **Refresh** or **Reload** in a browser. See [Default home page](#) for instructions.

Define the support URLs

Define links to Web support pages. Users can then link to the Web support pages when they need help with a network device or HP Web Jetadmin. See [Support settings](#) for instructions.

4 Planning and implementing HP Web Jetadmin

This section covers the following topics:

- [Phase 1: Determining what you want to accomplish](#)
- [Phase 2: Deciding how to accomplish your goals](#)
- [Phase 3: Installing HP Web Jetadmin](#)
- [Phase 4: Customizing HP Web Jetadmin](#)
- [Phase 5: Operating HP Web Jetadmin](#)
- [HP product information and support](#)

Phase 1: Determining what you want to accomplish

This section covers the following topics:

- [Non-system-based and system-based tasks](#)
- [Determining your implementation goals](#)

Non-system-based and system-based tasks

For successful implementation, you need to perform two types of tasks.

- Non-system-based tasks are business and management decisions that describe why you should implement HP Web Jetadmin and how you will determine what system components and features will be most useful for your organization. Examples of non-system-based tasks include deciding how many printers you will manage with HP Web Jetadmin, how many network administrators and users will be responsible for monitoring and maintaining printer resources, and the business needs that make implementing HP Web Jetadmin necessary.
- System-based tasks produce the tangible results that are a direct result of using computer and networking technology, including HP Web Jetadmin itself and the servers and workstations where you will install and use HP Web Jetadmin. Examples of system-based tasks are defining device groups that contain the printers that particular users will manage and monitoring the use of consumables to determine how much monthly inventory you should keep on hand.

After you have determined the non-system-based tasks that you need to accomplish, you can determine which system-based tasks will help to meet your goals.

Determining your implementation goals

You may have unique situations where you want to use HP Web Jetadmin to enhance network printer management. HP Web Jetadmin offers specific benefits for each situation.

The following table categorizes HP Web Jetadmin features according to various implementation goals. This table also shows who might use the features. If you know who will be using HP Web Jetadmin, choose your implementation goals based on user functions within the organization.

Examine the features and personnel in this table to determine which implementation goals are appropriate for your environment. As you review the table, note any features that might be useful. Choosing one implementation goal does not prevent you from using features listed under another. All of the features are included in every installation of HP Web Jetadmin.

Implementation goal	Features	Person using HP Web Jetadmin
Installing network printers	<ul style="list-style-type: none">● Create print queues on a wide variety of platforms● Configure multiple devices● Update HP Jetdirect print server firmware remotely from any workstation (integrated firmware downloader)	Printer specialist

Implementation goal	Features	Person using HP Web Jetadmin
	<ul style="list-style-type: none"> Discover devices without manually entering information Implement multiple levels of security to prevent unauthorized changes to devices or to the HP Web Jetadmin software 	
Help desk and troubleshooting	<ul style="list-style-type: none"> Discover devices and build a device cache without manually entering information Display site maps, showing the location of devices Search for printers with specific capabilities Group devices according to location, specific features, or other criteria View printer status Perform remote diagnostics View and configure HP device alerts Put printers back online remotely Turn printers off and on remotely Support non-printer devices, such as HP network scanners, multifunction products, and server appliances Configure support links for users to easily access help desk or support personnel 	Help desk personnel
Enterprise management	<ul style="list-style-type: none"> Integrate with packages like HP Systems Insight Manager and HP OpenView Configure HP device alerts Enable and disable protocols on HP Jetdirect print servers Turn off Service Advertising Protocol (SAP) broadcasts on HP Jetdirect print servers Support HP network-connected devices, such as HP scanners and printers 	Enterprise and IT manager

Business decisions for an organization are often used as the basis for determining the most appropriate HP Web Jetadmin implementation goals. The following are examples of reasons for implementing HP Web Jetadmin to achieve certain system-based functionality.

Installing network printers

- During installation, the network administrator wants to find out what features a printer has and assign the appropriate printer driver or model script.
- A company with a large number of printers wants to save time by configuring multiple printers simultaneously.
- The individual who installs printers wants to establish a print queue for shared network printers.

Help desk and troubleshooting

- Users want to know why their print jobs did not print.
- A company with multiple buildings only has one help desk in the main building. To cut down on trips to other buildings for minor problems, the help desk manager wants to know where a printer resides.

Enterprise management

- The network administrator wants a tool that provides cross-platform support.
- New HP Jetdirect print servers have arrived, and the network administrator wants to update firmware quickly and consistently.
- The network administrator wants to manage printers remotely, which means that a specific printer console is not required.

Phase 2: Deciding how to accomplish your goals

Now that you have determined what you want to accomplish with HP Web Jetadmin, decide how to use HP Web Jetadmin features to help meet your goals. To make the necessary decisions, you must gather information about device management problems within the network and then decide how best to address them.

Step 1: State your business objective

State your reasons for implementing HP Web Jetadmin. You might want to use the non-system-based tasks you determined in Phase 1 to formulate your business objective.

Step 2: Assemble the implementation project team

Decide who should be involved in the project team for implementing HP Web Jetadmin. You might want to include network administrators, information technology managers, and network printing professionals.



NOTE You will probably add more experts to the project team at various points during implementation.

Step 3: Gather network information

Gather the following network information:

- Network topology (infrastructure, routers, remote sites, and management of remote sites)
- Operating systems
- Protocols
- Printers
- Print server brands (such as HP Jetdirect)
- Services (DHCP, NDS, BOOTP, DNS, WINS, and any others)
- Physical site layout (for maps)
- People who need access, and those who should not have access to HP Web Jetadmin
- HP Web Jetadmin and OS security

Step 4: Design a strategy for creating print queues

In many network environments, you must answer several questions before you can create a print queue. The network administrator is the person most likely to serve as project manager for this task. You should also consult the people assigned to manage printers in your organization.

The following questions should help you design a strategy for creating print queues:

- What do users need to print? What operating systems do they run?
- What are your print needs and where do the print requests originate (for example, client/server or peer-to-peer)?
- Do you want HP Web Jetadmin to support the existing printing infrastructure (for example, Novell, standard port monitor, or line printer remote) or do you want to migrate to a new one?

- Do you want print services to be centralized or distributed?
- How many print queues can be hosted on a single machine? This number varies according to printer type and relates to whether print queues are centralized or distributed.



NOTE Since the machine that hosts print queues does not have to be the same one that runs HP Web Jetadmin, deciding where to create print queues does not necessarily affect deciding where to install HP Web Jetadmin.

- What types of print jobs do you support (for example, mainframe or workstation)?
- What operating system do you want print queues to reside on? This includes issues such as what platform you create print queues on and if print queues are centralized or distributed.

See [Chapter 17, Managing print queues](#) for more information about creating print queues.

Step 5: Select a protocol

HP Web Jetadmin lets you use either TCP/IP or IPX/SPX protocol to manage printers. For example, you can use IPX/SPX to manage printers in Novell environments and other IPX/SPX-based networks, and you do not have to configure an IP address for these printers. However, if you need to create print queues in a Windows® environment, each printer must have an existing IP address or you must assign one when you create the print queue.



NOTE If you plan to implement HP Web Jetadmin in a Novell NetWare environment, see [Chapter 18, Managing Novell print queues](#) for specific information about creating print queues in that environment.

If you plan to use TCP/IP to manage printers, you must determine which method to use for assigning IP addresses. You can assign IP addresses either manually or automatically.

Manually assigning IP addresses

Use HP Web Jetadmin to assign IP addresses to HP Jetdirect print servers individually or through the multiple device configuration feature, even if TCP/IP is the only protocol on the HP Web Jetadmin machine. HP Web Jetadmin uses the hardware address to communicate with the HP Jetdirect print server until you assign a valid IP address. You can only assign IP addresses manually to devices that are on the same subnet where HP Web Jetadmin is installed. When you configure a static IP address for an HP Jetdirect print server, the HP Jetdirect print server continues to use that IP address even after it is turned off and turned back on.

Automatically assigning IP addresses

Use either Bootstrap Protocol (BOOTP) or Dynamic Host Configuration Protocol (DHCP) to assign IP addresses. HP Jetdirect print servers transmit BOOTP and DHCP requests whenever they are turned on with the factory default settings. The BOOTP and DHCP server then replies by assigning an IP address to the device. If an HP Jetdirect print server does not receive a reply after five minutes, it defaults to an IP address of 192.0.0.192. If that HP Jetdirect print server is turned off and back on, it repeats this process.

When a DHCP server assigns an IP address to an HP Jetdirect print server, that IP address is only valid for a period of time known as a lease. As long as the HP Jetdirect print server is turned on and connected to the network, it keeps its lease for that IP address. When the HP Jetdirect print server is turned off or disconnected, it could lose that lease.

When the HP Jetdirect print server is turned back on or reconnected to the network, it contacts the DHCP server to verify that its lease is still valid. The HP Jetdirect print server tries to use the IP address that was originally assigned. However, if enough time has elapsed, the HP Jetdirect print server may have lost its lease for that IP address. If another device has acquired that IP address, the HP Jetdirect print server leases a different IP address from the DHCP server.

While automatically assigning IP addresses saves time and lets you focus on other tasks, there are several issues that you need to address.

- While the HP Jetdirect print server is transmitting BOOTP and DHCP requests and waiting for a response, it does not have a TCP/IP configuration. HP Web Jetadmin cannot discover or communicate with the HP Jetdirect print server during this time.
- If the IP address for a printer that is configured to use HP Standard TCP/IP Port Monitor (for example, in a DHCP environment) has changed, a Windows Internet Naming Service (WINS) server is queried to determine the new IP address. If a WINS server does not exist or cannot provide new information about the printer, you must reconfigure the port. A rediscovery based on the MAC address is not performed as it is for HP Jetdirect Port.
- Discovery methods that find devices by the IP addresses cannot find the devices that have been assigned new IP addresses. This applies to the Specified Addresses and IP Range discovery methods.

Despite these issues, automatically assigning IP addresses provides significant benefits. Use reservations to make sure that the IP addresses assigned to HP Jetdirect print servers through DHCP remain consistent. This ensures that the IP addresses do not change over time, even when the HP Jetdirect print server is turned off or disconnected from the network for an extended period of time.

Step 6: Select the operating system

If you only plan to use HP Web Jetadmin to manage devices, it does not matter how you created print queues. You can manage HP Jetdirect print servers with HP Web Jetadmin no matter how you originally configured them, and there is no need to recreate print queues. For example, you can use HP Web Jetadmin to manage HP Jetdirect print servers that were configured using any of the following methods:

- HP Jetadmin (HP Jetdirect Port Monitor)
- HP Web Jetadmin (HP Standard TCP/IP Port Monitor)
- HP network printer installer
- Internet Printing Protocol (IPP)
- Line printer remote (lpr)
- Novell Directory Services (NDS), Bindery, and Remote Printer mode support
- Novell Distributed Print Services (NDPS)

If you plan to use HP Web Jetadmin to create print queues, the operating system where you create the print queues determines where you should install HP Web Jetadmin. Use the following guidelines to determine the correct platform:

- To create print queues in a Windows NT, Windows 2000, Windows XP, or Novell environment, you can install HP Web Jetadmin on either Windows NT, Windows 2000, or Windows XP.
- To create print queues in a UNIX®/Linux environment, you can install HP Web Jetadmin on either Windows NT, Windows 2000, Windows XP, or Linux.

- If you want IPX/SPX support in a mixed environment or if you want to discover printers configured with IPX/SPX, you must install HP Web Jetadmin on Windows NT, Windows 2000, or Windows XP. These are the only platforms that support IPX/SPX protocol.
- If you plan to use HP Web Jetadmin in a Novell NetWare environment to configure NDS or Bindery print queues, make sure that you install Novell NetWare Client. Microsoft NetWare client is not compatible. See the readme file for a list of the supported versions of Novell NetWare Client. You will get an error message if you use HP Web Jetadmin to configure NetWare printing when Novell NetWare Client is not installed. See [Chapter 18, Managing Novell print queues](#) for more information.

Step 7: Select a hardware platform

See [Chapter 5, Installing HP Web Jetadmin](#) and the HP Web Jetadmin readme file for a list of the machine hardware requirements to install HP Web Jetadmin.

Step 8: Select a browser

Because users interact with HP Web Jetadmin through a browser interface, make sure that the browser selected supports the required features and is readily available to everyone who will access HP Web Jetadmin. See [Browser support](#) and the HP Web Jetadmin readme file for a list of the browsers that HP Web Jetadmin supports for each environment.

If you plan to run HP Web Jetadmin in a high-security environment, consider the browser security features. Internet Explorer's highest security setting does not allow Java applets to run. To take advantage of the HP Web Jetadmin complete feature set, such as dynamic real-time status reports and advanced configuration, you must set a security level of Medium or lower in Internet Explorer. This might not be an option in all environments, so make sure that the security policies where you will be implementing HP Web Jetadmin let you set Medium or lower security. If the security policies require a high level of security, you might be able to define a lower level only for the HP Web Jetadmin URL and keep the high setting for other URLs.

Step 9: Decide on a discovery strategy

See [Chapter 14, Overview of discovery methods](#) for guidelines for developing a discovery strategy that best suits your particular network topology and traffic patterns. This chapter contains overview information for each discovery method. Use this information to understand how much and what type of network traffic is generated, what network topology is supported, and what level of accuracy is expected.

Step 10: Decide how many copies to install

Install a single copy of HP Web Jetadmin or you can install multiple copies, depending on how you will use the software. The following guidelines can help you determine how many copies of HP Web Jetadmin you need to install.

Installing a single copy of HP Web Jetadmin

Do you want to manage all of the devices or track all of the assets in your network or organization from a central location? If so, you probably want to install one copy of HP Web Jetadmin because multiple copies cannot share a device cache. After HP Web Jetadmin creates a device cache, only that copy of HP Web Jetadmin can use the device cache. A single copy of HP Web Jetadmin compiles one device cache that includes information about every device.

Installing a single copy of HP Web Jetadmin provides the following benefits:

- centralized device cache
- centralized asset management database
- centralized control of network devices

Installing multiple copies of HP Web Jetadmin

Will different groups of devices be managed separately? If so, it might be more appropriate to install multiple copies of HP Web Jetadmin. For example, if different people will manage devices on different subnets, install a separate copy of HP Web Jetadmin on each subnet. Multiple copies of HP Web Jetadmin also ease the discovery process across large networks.

Installing multiple copies of HP Web Jetadmin provides the following benefits:

- device discovery on remote sites
- device discovery across routers with slow links
- reduced discovery traffic on large networks

Step 11: Decide on a security strategy

HP Web Jetadmin offers a variety of security options that you can use to customize the most effective level of security for your organization. After you have identified your security goals, use the following guidelines to decide how to best accomplish them:

- **Do you want to enforce SSL/TLS for all Web browsers that access HP Web Jetadmin?** By default, HP Web Jetadmin is accessed by all browsers using the SSL/TLS protocol. If you choose to not enforce SSL/TLS, most of the communications between HP Web Jetadmin and Web browsers are sent unencrypted using HTTP. This means that the information being passed between HP Web Jetadmin and a Web browser is subject to capture.
- **What level of encryption do you want Web browsers to use?** Choose the level of encryption—low, medium, or high—that meets your organization’s specific needs. The high level of encryption is slower and might not work with all browsers, but it is more secure.
- **What type of certificates do you want to use?** HP Web Jetadmin can create a self-signed certificate or you can install a certificate that is signed by a third-party Certificate Authority.
- **Do you want to implement security so that only one person can make changes to HP Web Jetadmin and other users can only access information?** This is the most popular way to configure HP Web Jetadmin security. One way to accomplish this goal is to define a password for the default Admin profile and define device passwords. Only the person who knows the password for the Admin profile can make changes to HP Web Jetadmin. Anyone who knows the password for a particular device can access and change device settings, but cannot configure HP Web Jetadmin.
- **Do you want to allow only one person to access HP Web Jetadmin?** Define an allow list that only lets machines with specific IP addresses access HP Web Jetadmin. If you always use specific workstations to access HP Web Jetadmin and those workstations will always have the same IP address, use the access control list to prevent other workstations from running HP Web Jetadmin. However, you should review the Dynamic Host Configuration Protocol (DHCP) issues discussed in [Step 5: Select a protocol](#). Make sure that the workstations that will access HP Web Jetadmin are configured with static IP addresses or have reservations with the DHCP server so

that their IP addresses will not change. If you plan to access HP Web Jetadmin from multiple workstations and do not know the IP address for each workstation, this method is not appropriate.

- **Do you want to allow different classes of users to see specific features in HP Web Jetadmin?** Create profiles that specify what various classes of users are allowed to do in HP Web Jetadmin. For example, you could define a profile that prevents users from creating print queues and changing devices, device groups, and the HP Web Jetadmin software, but lets them view device status.
- **Do you want to prevent unauthorized users from changing network device settings?** Assign a password to those devices that you want to have limited configuration authorization. If a device supports SNMPv3, you can use SNMPv3 to prevent unauthorized users from viewing or changing device settings.

Step 12: Decide on a backup strategy

Hewlett-Packard recommends that you back up HP Web Jetadmin whenever you perform any of the following tasks:

- create or update the device cache
- download new firmware
- create or update site maps
- define or update security options
- define or update device group settings
- define or update discovery settings

It would be best if you archive your entire installation of HP Web Jetadmin. At a minimum, you should back up the following files:



NOTE This list refers to a root directory. The root directory is where you installed HP Web Jetadmin on your system. All of the directories listed are relative to this root directory.

- For configuration options (such as security, discovery, and device groups), back up all of the INI files (*.ini) in the root directory and in its subdirectories.
- For the device cache, back up all of the DAT files (*.dat) in the root directory.
- For the site maps, back up all of the files (*.*) in root directory\doc\plugins\hpjwja\maps.
- For all of the firmware images, back up all of the directories under root directory\doc\firmware and all of the files in those directories. This saves having to download the firmware images again from the HP Web site.

Step 13: Decide on a printer driver management strategy

You must decide how users will obtain printer drivers and where HP Web Jetadmin will be located in relation to the printer drivers.

- This is not an issue in the UNIX/Linux environment. If you are only managing printers in a UNIX/Linux environment, see [Step 14: Decide whether to implement device groups](#).
- In a Windows environment, set up Point and Print so that the printer driver is automatically downloaded to users. See [Windows printer drivers](#) for more information about the Point and Print feature.

Hewlett-Packard recommends that you install printer drivers on the same machine where you install HP Web Jetadmin.

Step 14: Decide whether to implement device groups

Device groups can be tremendously useful if you group devices in ways that help users access information about the devices quickly and easily. For example, users who are assigned to monitor devices in their department might benefit from having those devices defined as a single group. This makes it easier for them to check device status without having to wade through a longer list of all of the devices on the network.

The following are some examples of how you could group devices:

- A group called *Graphics Printers* that contains all of the printers that support 279.4 by 431.8 mm (11 by 17 inches) paper and higher amounts of RAM.
- A group that contains all of the printers that a particular support person monitors.
- A group called *Marketing* that contains all of the printers in the marketing department.

It is important to consider what types of management tasks are required for devices before defining device groups. Defining device groups incorrectly could inhibit effective management. For example, when a help desk representative only supports color printers that are scattered throughout your site, it is not useful to base device groups on location. Grouping only color printers together would let the help desk representative monitor their status from a single list; there would be no need to check through multiple groups of printers located in different areas to find all of the color printers.

The following are some questions to consider when deciding how to implement device groups:

- **Will help desk personnel use HP Web Jetadmin to track specific subsets of devices that they support?** Create device groups that only show the printers that each help desk representative supports, printers in specific locations, or printers that require frequent checking, such as those considered mission-critical or those that require frequent maintenance.
- **Will you create site maps that show the location of devices and device groups throughout your organization?** If so, help desk personnel or network administrators can navigate through the device groups on site maps to quickly find individual devices.

Step 15: Decide whether to implement site maps

Because site maps display device groups within HP Web Jetadmin, you must define device groups before you can implement site maps.

Once again, it is important to evaluate what kind of tasks you want to accomplish with HP Web Jetadmin before you can decide whether site maps will be useful in your environment. For example,

maps are generally more useful to help desk personnel. Define device groups hierarchically, allowing them to navigate through nested device groups. This makes it easy to track devices in particular locations, such as departments, floors, or buildings. Help desk personnel can see printer locations on a site map and then contact someone close to the printer when the printer requires intervention.

Because special effort is required to create and maintain site maps, you should carefully evaluate whether they will be useful for your organization.

- If the tasks you want to accomplish will not be helped by a visual representation of device locations, you will not gain enough advantages from site maps to be worth the effort of maintaining them.
- If you move devices frequently, carefully weigh the advantages of using site maps against the time it takes to keep the maps updated.
- You must create site maps in a graphics program that can save the file in a GIF format. If you do not have access to such a program, you must acquire one or hire a consultant to create your site map files. You can use a number of graphics programs to create site maps. For example, Visio version 5 outputs the correct file format and includes an extension to aid floor planning. In addition, you can use Adobe Photoshop®, Corel® PhotoPaint, and Jasc Paint Shop Pro. Most scanning software packages support the GIF format.



NOTE The third-party products mentioned here are only provided as examples of programs that can be used to create site maps for HP Web Jetadmin. Hewlett-Packard does not endorse any of these products, and Hewlett-Packard acknowledges that you can also use other products.

Phase 3: Installing HP Web Jetadmin

HP Web Jetadmin requires minimal effort to install. See [Chapter 5, Installing HP Web Jetadmin](#) for more information. The following are the basic steps required to install HP Web Jetadmin and prepare it for use:

1. Install HP Web Jetadmin. Remember that you must have administrator access in Windows or root access in Linux. During the installation process, you should assign a password to the default Admin profile.
2. Configure the discovery options that are appropriate for your network.
3. Perform an initial discovery to create the device cache.
4. Create print queues.

Phase 4: Customizing HP Web Jetadmin

Once HP Web Jetadmin is installed, there are several ways that you can customize the software to suit your needs. For example, you can:

- Configure discoveries to run on specific days and times. You might want to enable different discovery methods so that they are more appropriate for maintaining the device cache.
- Decide if you want to provide local support information. If so, configure the URL for local support in HP Web Jetadmin.
- Fine tune HP Web Jetadmin performance in the following areas:
 - Amount of information stored in the device cache
 - DNS lookup
 - Browser version
- Customize your profiles. Control how HP Web Jetadmin looks and works, such as the default page displayed when users start the HP Web Jetadmin software. Apply the same settings to all of your profiles or you can select each profile and apply different settings.
- Configure the device list views and specify how frequently you want to update device views and the **Device Status** page.
- Decide which printer settings should be common to all network printers and use the multiple device configuration feature to configure them.
- Configure the security settings. Hewlett-Packard recommends that you define device passwords. Use the multiple device configuration feature to do this. You can also create profiles that control which product features various classes of users can access.
- Decide if you want to use HP device alerts. If you do, you must configure the SMTP server to enable the email gateway. If your printers and HP Jetdirect print server firmware support alerts, all you have to do is configure them. Decide which alerts you want to trap and who should receive notification about them. If your printers or HP Jetdirect print servers do not support alerts, download new firmware or check into acquiring new printers.
- If you want to use device groups, define them.
- If you want to use site maps, upload them to HP Web Jetadmin. If they do not exist, you or someone else needs to create them.

Phase 5: Operating HP Web Jetadmin

Once HP Web Jetadmin is installed and customized, there are several tasks you need to perform on an ongoing basis that will keep HP Web Jetadmin running smoothly. The following are some of these tasks:

- Monitor the impact of tasks on network traffic.
- Maintain the device cache. Monitor the impact of discovery traffic and the accuracy of discovery results to ensure that you are using the most efficient discovery methods for your organization.
- Maintain existing device groups and create new ones when needed. Ask the people who use the device groups to determine when changes are needed to make them more effective.
- Maintain customized site maps. Remember to update the maps when you move devices, change your site, or add or change device groups.
- Monitor HP Web Jetadmin performance and fine tune it as necessary.
- Interpret and troubleshoot normal system messages, such as *Unable to communicate*.
- Execute your backup strategy. Make sure that you back up the files that are essential to your implementation of HP Web Jetadmin when you make changes to them.

HP product information and support

Hewlett-Packard maintains an extensive Web presence to provide information and assistance when implementing the strategies discussed in this document. The following Web sites provide detailed information about HP network device management solutions. When applicable, these sites also provide links for downloading software tools and updates.

Product	URL
HP Web Jetadmin	http://www.hp.com/go/webjetadmin
HP Jetdirect	http://www.hp.com/go/jetdirect
HP OpenView	http://www.openview.hp.com/

Resellers can obtain a variety of support information and assistance for HP products, including technical support, repair assistance and services, self-paced and classroom training, parts and warranty information, product availability and literature, and network assistance. Access the support Web site at <http://www.hp.com/go/support>.

Section 2

HP Web Jetadmin software

This section contains the following:

[Chapter 5, Installing HP Web Jetadmin](#)

[Chapter 6, User interface](#)

[Chapter 7, Customizing HP Web Jetadmin](#)

[Chapter 8, Updating HP Web Jetadmin software](#)

5 Installing HP Web Jetadmin

This section covers the following topics:




- [Installing overview](#)
- [HP Web Jetadmin front end and back end](#)
- [Web server configuration](#)
- [Installation requirements](#)
- [Windows installation](#)
- [Linux installation](#)
- [Stopping and starting HP Web Jetadmin](#)
- [Viewing HP Web Jetadmin](#)
- [Setup Wizard](#)

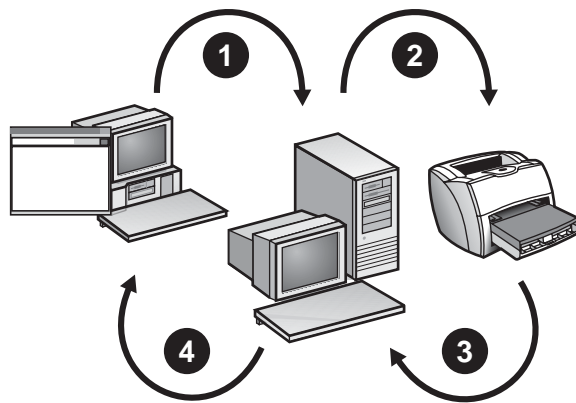
Installing overview

HP Web Jetadmin requires minimal effort to install. Simply run the install program and follow the instructions on the screen.

If you are installing a newer version of HP Web Jetadmin over a previous installation of version 6.5 or greater, you can keep your customized settings, such as device groups, from your previous installation.

HP Web Jetadmin front end and back end

Icon	Description
	HP Web Jetadmin host machine
	Workstation running a Web browser
	Printer operating on the Intranet



1	HTTP request
2	SNMP request
4	SNMP response
3	HTTP response

With HP Web Jetadmin you can construct a server (back end) and manage your devices from a Web browser (front end). With the Web server, network clients, such as help desk personnel, can use HP Web Jetadmin to manage devices from the TCP/IP Web browser desktops running on their client machines.

In Windows environments, the Windows machine where HP Web Jetadmin runs does not need to establish a TCP/IP communications line to the devices that you are managing because HP Web Jetadmin supports both TCP/IP and IPX/SPX. This means that devices do not need to run TCP/IP for you to use HP Web Jetadmin to manage them.

As the figure shows, the HP Web Jetadmin back end operates as follows:




1. When you request device status information through a Web browser (also known as a Web client), the Web server back end sends a Hypertext Transfer Protocol (HTTP) request for status information to HP Web Jetadmin.
2. HP Web Jetadmin converts the HTTP request to a Simple Network Management Protocol (SNMP) request and forwards the request to the appropriate device.
3. The device sends an SNMP response to HP Web Jetadmin with its status information.
4. HP Web Jetadmin composes HTML pages containing the status information and returns these HTML pages to the Web client.

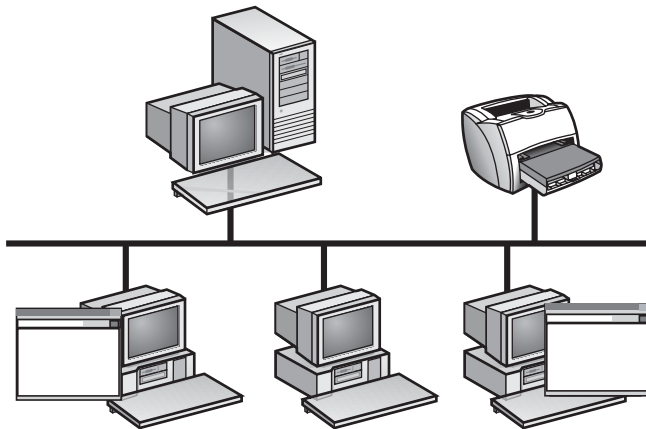
The Web client uses TCP/IP, or a proxy service for TCP/IP, to communicate with the Web server. If you want to use HP Web Jetadmin to manage printers, it is best if the printers have a TCP/IP address. However, this means that users who access HP Web Jetadmin can see devices even if they are only running IPX/SPX, such as in a mixed Novell NetWare and Windows environment.

Use HP Web Jetadmin to manage HP Jetdirect print servers regardless of how they are configured, including the following methods:

- HP Jetadmin or NDPS in a Novell environment
- HP Jetadmin in a direct-mode environment, such as Windows
- HP network printer installer in a Windows environment
- Line printer remote (lpr) in a TCP/IP environment

Web server configuration

Icon	Description
	HP Web Jetadmin host machine
	Workstation running a Web browser
	Printer



Because HP Web Jetadmin is Web-based, it relies on Web server components to distribute information to the client workstations on the network.

The HP Web Jetadmin master control process runs continuously on the host machine, waiting for incoming HTTP requests that originate from Web browsers on client workstations. The Web browser might ask the HP Web Jetadmin Web server to get a text or graphics file or to retrieve a ZIP file. The HP Web Jetadmin Web server components then send the information, files, or program results back to the requesting Web browser.

Because HP Web Jetadmin has integrated Web server components, it integrates into your corporate intranet. Unless you specify a different port during installation, HP Web Jetadmin defaults to port 8000, which means that any Web servers that you already have continue to operate.

The HP Web Jetadmin Web server components require very little setup. Accept all of the default settings for HP Web Jetadmin and then change the options that you want to have non-default settings. For example, you might want to change the port number from HP Web Jetadmin's default of 8000 to 80, which is the default HTTP network port for Web browsers.

Installation requirements

Before installing HP Web Jetadmin, your system must satisfy the following requirements.

Operating system and hardware

The network must run an approved operating system and the machine where you will install HP Web Jetadmin must meet specific hardware requirements. See the readme file for a list of the operating system and hardware requirements.



NOTE The size of the machine where you install HP Web Jetadmin depends on the size of your network, how widely distributed your network is, and the number of devices supported on the network. For smaller networks, install HP Web Jetadmin as another service on someone's desktop. For larger networks, install HP Web Jetadmin on any machine up to a dedicated multiprocessor server with extensive redundant hardware.

Novell NetWare print queue support

Novell NetWare print queue support is available if you are using a Windows version of HP Web Jetadmin that is running the Novell NetWare Client. See the readme file for a list of supported versions of Novell NetWare Client.

Supported Web browsers

You must install Mozilla Firefox (Linux) or Internet Explorer (Windows) on each workstation where you will access HP Web Jetadmin. See the readme file for supported browser versions.

Screen resolution and color palette

Hewlett-Packard recommends the following settings for the machine where the browser is running:

- Screen resolution: 1024 by 768 pixels
- Color palette: at least 256 colors

Downloading HP Web Jetadmin

Download a copy of HP Web Jetadmin to a local directory from one of the following sites:

Product	URL
World Wide Web	http://www.hp.com/go/webjetadmin
HP FTP site	ftp://ftp.hp.com/pub/networking/software/wja

Windows installation

To install HP Web Jetadmin in Windows

1. Go to the local or network location where you downloaded the HP Web Jetadmin EXE file. Double-click the EXE file.
2. Follow the instructions on the installation screens.
 - If you are upgrading from HP Web Jetadmin version 6.0 and greater, a previous installation dialog box appears. If you want to keep the settings (such as device groups, site maps, and HP Web Jetadmin settings) from your existing installation, select the directory where that installation resides. If you do not want to keep previous settings, select **New Installation**.
 - A default value appears for Machine Name. If the default is incorrect, type the correct machine name. If a default machine name does not appear, type the DNS hostname. If a DNS hostname does not exist, type the machine's TCP/IP address.



NOTE To find the DNS hostname on Windows NT 4.x, right-click **Network Neighborhood**, and select **Properties, Protocols, TCP/IP Protocol, and DNS**.

- The default for Port Number is **8000**, unless that port is already in use. See [Web server configuration](#) for more information about port numbers.
 - The default for Destination Path is **Program Files\HP Web Jetadmin**.
 - The default for Program Folder is **HP Web Jetadmin**.
3. Click **Finish**.

HP Web Jetadmin runs on Windows as a service. The service starts after installation and each time you restart the system where it is installed.

Linux installation

The HP Web Jetadmin for Linux install program is a self-extracting executable (SELFEX).

Upgrading from a previous version of HP Web Jetadmin

Use the install program upgrade option to upgrade from a previous version of HP Web Jetadmin. When running the install program, specify the following option:

```
-u <olddir>
```

where `<olddir>` is the path to the directory where the previous version of HP Web Jetadmin is installed (for example, `/opt/hpwebjet`).

If a previous version of HP Web Jetadmin is already installed and you do not specify the `-u <olddir>` option, the previous installation is left undisturbed.

Using the install program



NOTE You must be logged in as the root user to install HP Web Jetadmin.

1. Start the install program:

```
./<file name>.selfx
```

2. Follow the instructions on the installation screens.

- When prompted, press **Enter** to view the software license agreement. To scroll through the license agreement, press **Enter** repeatedly or press the **Spacebar**. To continue the installation, type **yes** to accept the terms of the license agreement. If you type **no**, you will not be allowed to continue with the installation.
- Specify the directory where you want to install HP Web Jetadmin (for example, `/opt/hpwebjet`). If a parent directory already exists, the install program can create a leaf subdirectory for you. For example, if you want to install HP Web Jetadmin in `/opt/hpwebjet` and `/opt` already exists, the install program can create the `hpwebjet` subdirectory. However, if `/opt` does not exist, the install program generates an error message.
- Specify the number of the system port where you want HP Web Jetadmin to listen for requests. The default port is 8000.

Alternative way to use the install program



NOTE You must be logged in as the root user to install HP Web Jetadmin.

It is possible to avoid interacting with the install program altogether. You can give the install program the command line options with the information that the install program normally prompts you for.

To view all of the command line options for the install program, start the install program as follows:

```
./<file name>.selfx -h
```

If you do not supply an option on the command line, the install program prompts you for most of the information. However, the install program will not prompt you for an upgrade directory. You must supply the upgrade directory information on the command line.

Verifying the configuration

Type the following URL in a supported browser: `http://server.domain:port` where `server.domain` is the hostname of the HP Web Jetadmin host machine and `port` is the port number you specified during the installation.

Stopping and starting HP Web Jetadmin

The install program starts HP Web Jetadmin when it is done. However, you might need to stop and start HP Web Jetadmin to enable some settings. The following sections explain how to stop and start HP Web Jetadmin for the different operating systems.

Windows

To stop HP Web Jetadmin

1. In **Control Panel**, double-click **Services**.
2. Select **HP Web Jetadmin** from the list.
3. Click **Stop**.

To start HP Web Jetadmin

1. In **Control Panel**, double-click **Services**.
2. Select **HP Web Jetadmin** from the list.
3. Click **Start**.

Linux



NOTE You must have root-level access to perform these operations.

To stop HP Web Jetadmin

Type the following command:

```
▲ /etc/rc.d/init.d/hpwebjetd stop
```

To start HP Web Jetadmin

Type the following command:

```
▲ /etc/rc.d/init.d/hpwebjetd start
```

Viewing HP Web Jetadmin

To view HP Web Jetadmin in a supported Web browser from a client workstation, type one of the following URLs:

- `http://server.domain:port/` where `server.domain` is the hostname of the HP Web Jetadmin host machine and `port` is the port number that you entered during the installation (the default port is 8000). This information is available in the `url.txt` file, which is stored in the directory where HP Web Jetadmin is installed.
- `http://ipaddress:port/` where `ipaddress` is the IP address of the machine where HP Web Jetadmin is located.

Setup Wizard

When you access HP Web Jetadmin for the first time after installation, the Setup Wizard displays. You can also access the Setup Wizard on the **General Settings > Setup Wizard** page. The Setup Wizard identifies features that you can configure to obtain the most benefit from HP Web Jetadmin. For example, you can use the Setup Wizard to configure support URLs, security features such as SSL/TLS, HTTP network settings, and discovery methods.



NOTE For tips on determining the best way to implement HP Web Jetadmin for the specific needs of your organization, see [Chapter 4, Planning and implementing HP Web Jetadmin](#).

- Welcome page – Lists all of the settings that you can configure during the Setup Wizard. If you do not want to configure a specific setting during the Setup Wizard, click the check box to clear it. You can configure any of the settings that you do not configure when the Setup Wizard first displays at a later time, through the appropriate page in HP Web Jetadmin or from the **General Settings > Setup Wizard** page. If you do not want HP Web Jetadmin to start the Setup Wizard again, select the check box labeled **Do not show this page again**.
- Page 1 – Configures the administrator name and local support URL that can link to any Web page that users can access for support information. In addition to specifying a URL, you can specify an email address. See [Administrator information](#) and [Local support URL](#) for more information.
- Page 2 – Configures the page that HP Web Jetadmin displays first when users access HP Web Jetadmin. See [Default home page](#) for more information.
- Page 3 – Configures the authentication method that HP Web Jetadmin uses to allow users to access the software. HP Web Jetadmin can authenticate users based on profiles or based on Windows NT domain users and groups. You can also assign passwords to profiles. See [Authentication methods](#) for more information.
- Page 4 – Configures the HTTP port that HP Web Jetadmin listens on for requests and the HTTP proxy settings that HP Web Jetadmin uses to access the Internet. If you specify the HTTP proxy settings, the HP Web Jetadmin Intelligent Update feature can access the HP Web site to download the latest software packages when you want to update the product (for example, HP Jetdirect firmware). See [HTTP port](#) and [HTTP proxy](#) for more information.
- Page 5 – Configures an allow list that controls which machines can access HP Web Jetadmin. Allow only specific IP addresses to access HP Web Jetadmin or deny access only for specific IP addresses. See [Allow list](#) for more information.
- Page 6 – Configures the SMTP server that HP Web Jetadmin uses to send email messages, such as alert messages. You can then send a test message to verify that the SMTP server is working correctly. See [SMTP \(mail\) host](#) for more information.
- Page 7 – Configures the network protocols that HP Web Jetadmin uses to search the network to discover devices and add those devices to the device cache, and starts the discovery. You must run a discovery before you can search the device cache for devices, configure devices, and manage devices. See [Chapter 14, Overview of discovery methods](#) for more information.
- Page 8 – Schedules the time to automatically run discoveries. See [Scheduling discoveries](#) for more information.
- Page 9 – Describes the HP Web Jetadmin certificate management feature. See [SSL/TLS](#) for more information.
- Page 10 – Configures the encryption level that the HP Web Jetadmin host machine uses to establish communications with a Web browser. If a Web browser does not support the specified

encryption level, HP Web Jetadmin does not allow that Web browser to access the software. See [SSL/TLS](#) for more information.

- Page 11 – Turns the SSL/TLS security feature on or off. See [SSL/TLS](#) for more information.

6 User interface

This section covers the following topics:

- [User Interface overview](#)
- [Page layout](#)
- [Making changes in HP Web Jetadmin](#)

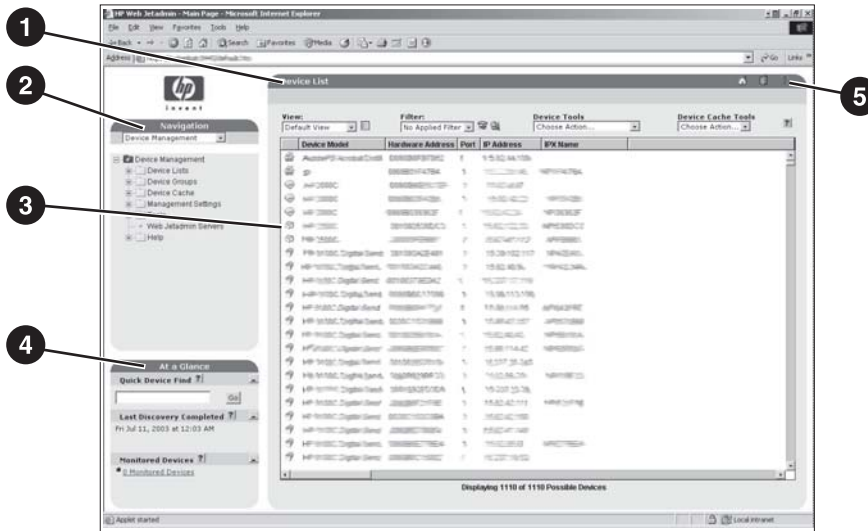
User Interface overview

This chapter describes the HP Web Jetadmin user interface (UI) and provides instructions for navigating through the software.

Page layout

The UI is designed to make completing a task faster, make the steps to complete a task more intuitive, decrease the number of steps required to complete a task, and streamline the operation.

Each HP Web Jetadmin page is divided into the following areas:



1	Content title bar
2	Navigation area
3	Content area
4	At a Glance area
5	Context help



NOTE If upgrades to the HP Web Jetadmin software are available and you have enabled HTTP downloads, a message displays above the **Navigation area**.

Navigation area

The **Navigation** area provides an expandable tree that you can use to navigate to the page that you need. HP Web Jetadmin functionality is grouped into four main options: **Device Management**, **Print Queue Management**, **Product Update**, and **General Settings**.



NOTE The **Plug-ins and Extensions** option in the **Navigation** area provides a way to set up access and view Web-based applications and to access certified application plug-ins from the HP Web Jetadmin software.

NOTE If you have installed any HP Web Jetadmin application plug-ins, there might be additional options available in the **Navigation** menu.

When you select one of the options from the **Navigation** tree, HP Web Jetadmin expands the tree menu so that you can access all of the pages for that area of functionality.

HP Web Jetadmin documentation contains references to pages within the software. These references tell you how to navigate to that page using the expandable tree in the **Navigation** area. For example, to navigate to the **Device Management > Device Lists > All Devices** page, expand the **Device Management** folder, expand the **Device Lists** folder, and click **All Devices**.

At a Glance area

The **At a Glance** area provides the following functionality.

Quick Device Find

Use the **Quick Device Find** section to search for a specific device by typing the device address (for example, IP address, hardware address, or hostname). When you click **Go**, HP Web Jetadmin displays the **Device Status** page. This option is useful if you already know a device address.

You can also search for multiple devices by separating the addresses with a semicolon. When you click **Go**, HP Web Jetadmin opens a temporary device group.

Background Tasks

The **Background Tasks** section displays the background tasks that HP Web Jetadmin has either processed or is processing.

Monitored devices

The **Monitored Devices** section indicates how many devices HP Web Jetadmin is monitoring for alerts. When you click the **Monitored Devices** link, HP Web Jetadmin displays the **Monitored Devices** page, listing all of the monitored devices. From the **Monitored Devices** page you can add devices to and remove devices from the list of monitored devices and change the alert settings for a particular device.

If HP Web Jetadmin is monitoring devices for alerts, this section also indicates how many of the monitored devices have generated critical alerts and caution alerts. Critical alerts occur when a device has an error that must be resolved before it can continue. Caution alerts occur when a device has an error, but can continue without user intervention. When you click the **Critical Devices** or **Caution Devices** link, HP Web Jetadmin opens a temporary device group listing the devices that have generated alerts. To display a **Device Status** page, select the device, and then click **Open**.



NOTE If you are not monitoring devices for alerts, HP Web Jetadmin does not display the **Critical Devices** and **Caution Devices** links.

You can remove the **Monitored Devices** section from the **At a Glance** area. See [Monitored Devices, Critical Devices, and Caution Devices alerts](#) for more information.

Content area

The content area is the main area of each page. This is where HP Web Jetadmin displays information, where you can apply settings, and where you can perform other tasks. The content area contains the following sections.



NOTE In the content area of some HP Web Jetadmin pages you can apply multiple options from an expandable tree or list view to a device or a device group, or select multiple devices or device groups from an expandable tree or list view. To select a range of options or devices in a list, press and hold the **shift** key while selecting a range. To select specific options or devices in a list, press and hold the **ctrl** key while clicking the specific options or devices.

Device list

A device list displays in the center of the content area.





Content title bar

The content title bar identifies the current page.

Content toolbar

The content toolbar contains the following features:

- On the top of the content toolbar, some pages provide drop-down lists that you can use to access other related pages. For example, when you access a **Device Status** page, the drop-down list on the content toolbar provides access to other device-related pages, such as the **Device Configuration** page and the **Device Diagnostics** page.
- On the right side of the task bar, several icons are available.

Icon	Description
	The refresh icon appears on the content toolbar for pages like a device Device Status page. When you click the refresh icon, HP Web Jetadmin updates the device status.
	The home icon displays the HP Web Jetadmin home page. See Default home page for instructions on defining the default home page.
	The bookmark icon adds the current page to the Favorites list. When you select Favorites from the Navigation tree, HP Web Jetadmin displays a list of the bookmarks that you have added on the navigation tree.
	The help icon displays the context help for that page. See Integrated context help for more information.



NOTE There might be additional help icons on the page. When you click a help icon on the page, HP Web Jetadmin displays the context help for that option.

- During some processes, HP Web Jetadmin displays a progress indicator on the content toolbar showing the percentage of the process that has been completed.

Context Help area

The **Context Help** area is where HP Web Jetadmin displays the context help if you have HP Web Jetadmin set up to display the context help within the page. By default, HP Web Jetadmin displays the context help in a separate browser window. See [Integrated context help](#) for more information.

Making changes in HP Web Jetadmin

When you type information in a text box on the screen or select an option, you must click **Apply**. HP Web Jetadmin does not implement your changes until you click **Apply**.

7 Customizing HP Web Jetadmin

This section covers the following topics:

- [Customizing overview](#)
- [Language support](#)
- [Configurable views](#)
- [Profiles](#)
- [Temporary and permanent device groups](#)
- [Direct links to support](#)



Customizing overview

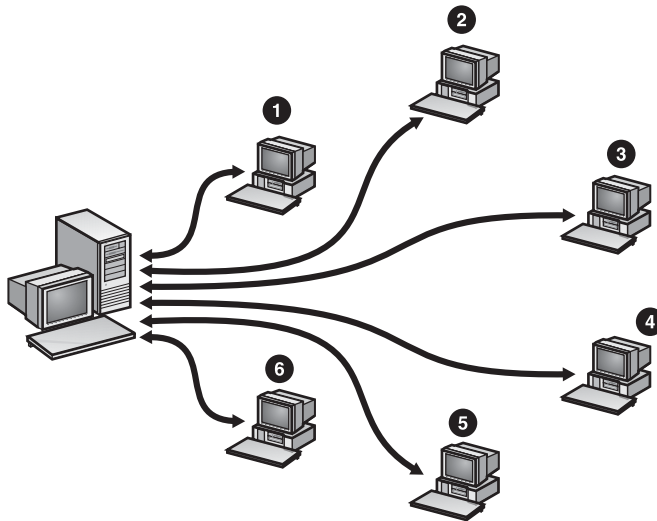
HP Web Jetadmin provides several ways to customize the software so that it works best for your environment.

Language support

HP Web Jetadmin consists of two separate pieces: the software executable and the language packs. Each language pack consists of the translated user interface (UI) dialogs (strings, bitmaps, and so on) for one of the languages that HP Web Jetadmin supports. The separation of the software executable and the translated UI dialogs has an important impact on the way HP Web Jetadmin works in a multilingual environment.

Install the software one time on a single host machine. Choose which languages you want to support and install those language packs. Using the separate language packs, this single software executable can simultaneously service multiple browser sessions in multiple languages.

Icon	Description	Icon	Description
	HP Web Jetadmin host machine		Workstation



1	English
2	French
3	Polish
4	Japanese
5	Spanish
6	Korean

A multilingual HP Web Jetadmin provides the following benefits:

- You only have to install the software once without specifying a language, which means that there is only one machine to configure.
- There is only one device cache, which means that you do not have to spend time keeping multiple device caches synchronized.
- There is only one copy of HP Web Jetadmin performing discoveries instead of multiple copies of HP Web Jetadmin running multiple discoveries to find the same devices. This means that there is less network traffic.
- If you have a multilingual workforce—for example, an office in San Francisco with employees who speak Chinese, Spanish, and English—each employee can work in the language that they prefer.
- If you have a mobile work force—for example, an employee who works in Great Britain and speaks English, but travels a lot in Germany and prefers to work in German—each employee can work in the language that they prefer.



NOTE HP Web Jetadmin supports 20 languages and always tries to display consistent languages. However, each device that HP Web Jetadmin manages may support a different set of languages. As a result, HP Web Jetadmin may display different languages on the same screen. For example, the basic user interface on a **Device Status** page may be displayed in Dutch. If that particular device does not support Dutch, HP Web Jetadmin may display the device-specific information on the **Device Status** page in English instead of Dutch.

Adding language support

After you install HP Web Jetadmin, use the Intelligent Update feature to add language packs. See [Adding and removing languages](#) for more information.

Specifying language preferences in the browser

Each HP Web Jetadmin user can specify a prioritized list of the languages that he or she wants to work with in the browser. If a language that HP Web Jetadmin supports is not in the browser language list, the user can manually type an entry for that language and add it to the list.

A language entry consists of a language code and, sometimes, a country/region code. For example, the code for English in the United States is en-US and the code for French in Canada is fr-CA. The built-in codes are standard ISO language tags. See the online browser help for more information about specifying language preferences and adding user-defined language codes.



NOTE Adding a language to the list in the browser does not guarantee that HP Web Jetadmin will display that language. First, HP Web Jetadmin must support that language. Second, a font that can display the language must be installed on the same machine as the browser.

Configurable views

HP Web Jetadmin contains a large amount of information about devices on the network and many options for configuring each device. If you have a large network with many devices, the amount of information that HP Web Jetadmin displays increases dramatically. Configure HP Web Jetadmin in the following ways to limit the amount of information displayed:

- Device lists – When viewing a list of devices or device groups, sort the information in the list by any of the columns. See [Sorting lists](#) for more information. You can also filter the device information to make it easier to find specific information. See [Filtering lists](#) for more information.
- Custom views – Although HP Web Jetadmin provides several views that display specific information about a list of devices, those views might not meet your needs. Create a custom view that only displays the information that you need to see, and then select your custom view for any displayed list. See [Custom views](#) for more information.
- Quick Sets – On the **Device Configuration** page, you can create a quick set that contains the options you typically configure for devices. See the context help for the **Device Configuration** page for more information.

Profiles

Use the **General Settings > Profiles Administration** pages to customize how HP Web Jetadmin looks and works for the various profiles that you create. Apply the same settings to all of your profiles or you can apply different settings to each profile. See [Chapter 10, Configuring profiles](#) for more information.

Temporary and permanent device groups

Create both temporary and permanent device groups. When you select one or more devices from a device list and click **Open**, HP Web Jetadmin creates a temporary group that contains those devices. Temporary device groups let you perform one-time searches and tasks. HP Web Jetadmin does not save temporary device groups. Once you select another view, group, or device filter, the temporary device group is lost.

Create a permanent device group under a name that you assign. Permanent device groups are useful when you have to manage or maintain several devices on a regular basis. See [Creating device groups](#) for more information.

Direct links to support

HP Web Jetadmin provides direct links to technical support, general information, and training information Web pages. These links give network administrators and help desk personnel quick access to information relating to HP Web Jetadmin. Access the Web links on the **Help > Support and Training** page.

In addition, you can create a link to a support page on your organization's intranet. A local support link greatly reduces help desk personnel dependency on the network administrator, lowering support costs and saving valuable time.

See [Support settings](#) for more information.

8 Updating HP Web Jetadmin software

This section covers the following topics:

- [Intelligent Update](#)
- [Installing software components](#)
- [Removing software components](#)
- [Adding and removing languages](#)
- [Enabling proactive update notification](#)
- [Uploading packages](#)

Intelligent Update

Use the HP Web Jetadmin Intelligent Update feature to download and install optional software components as well as the latest versions of the components that you are already using. You can also use the Intelligent Update feature to remove software components from HP Web Jetadmin.

The HP Web Jetadmin Intelligent Update feature provides the following benefits:

- You do not need to manually find and download the packages that you want to install.
- You only have to install the software components that you need.
- You can add the latest support packages to HP Web Jetadmin without having to download and install the entire product.

HP Web Jetadmin connects to the HP Web site to determine what packages are available for installation. Make sure that you have configured the proxy settings on the **General Settings > HTTP (Web)** page.



NOTE If you have installed HP Web Jetadmin on an isolated network where HTTP access to the HP Web site is not possible, you must manually download the components and then install them. See [Uploading packages](#) for more information.

Installing software components

Use the **Product Update > Install** page to download and install the following components:

- New packages that provide additional support, for example, support for new devices or software components required for print queue and remote discovery on new platforms.
- Application plug-ins that provide functionality that is not available in HP Web Jetadmin.
- Patches that address issues with any current HP Web Jetadmin software components.



WARNING! If a package fails to install for any reason, HP Web Jetadmin rolls all of the files on the disk, not just the ones that failed, back to the state that they were in before you started the install. A partial or failed install will not leave the software in an undefined state.

In some cases, a package might contain files that upgrade some part of HP Web Jetadmin and that require a restart of the HP Web Jetadmin service. If this is the case, the **Action** column on the **Install** page contains the **Upgrade (Restart of HP Web Jetadmin Required)**. The restart occurs automatically during the upgrade process.

Removing software components

If you no longer need to support a software component, use the **Product Update > Remove** page to remove the component from HP Web Jetadmin. Removing an unused software component frees up disk space on the host machine where you installed HP Web Jetadmin.



CAUTION HP Web Jetadmin checks to see if any of the remaining installed packages are dependent on the packages that you are uninstalling. If there are any dependencies, you cannot continue with the uninstall.

Adding and removing languages

Use the **Product Update > Languages** page to add language packs to HP Web Jetadmin. HP Web Jetadmin retrieves the new language packs directly from the HP Web site.

The **Available Languages** list on the **Languages** page identifies all of the available languages that you have not installed. The **Target Languages** list identifies all of the languages that you have installed.

If any of your HP Web Jetadmin users prefer to work in a language other than the default language and HP Web Jetadmin supports that language, consider adding that language pack.

If you no longer need to support a language, use the **Languages** page to remove that language pack from HP Web Jetadmin. Removing an unused language pack frees up disk space on the host machine where you installed HP Web Jetadmin.



NOTE If you have installed HP Web Jetadmin on an isolated network where HTTP access to the HP Web site is not possible, you must manually download the components and then use the **Upload** option on the **Product Update > Install** page to install them. Components are available from http://www.hp.com/go/wja_components.

Enabling proactive update notification



NOTE This option is enabled by default. If this option is enabled, HP Web Jetadmin downloads a file containing update notifications from the HP Web site each day. If upgrades to the HP Web Jetadmin software are available and you have enabled HTTP downloads, a message displays above the **Navigation** area.

NOTE You must log in to HP Web Jetadmin using the Admin profile to receive the notification for proactive updates. Also, HTTP downloads must be enabled.

You can use the proactive update notification feature to automatically download an update notification file from the HP Web site each day, based on the scheduled download time. HP Web Jetadmin reads the update notification file and compares the packages listed in the file to what is installed on the HP Web Jetadmin host machine. If there is a new HP Web Jetadmin package available, information about the available package displays on the **Product Update > What's New** page. You can download any available package on the **Product Update > Install** page.

The advantage of this feature is that you do not need to manually verify that the most current version and features are running on the HP Web Jetadmin host machine. You can view and then choose to install new HP Web Jetadmin packages to expand the functionality of HP Web Jetadmin, such as updates that include support for new devices and software features, new applications, and patches that address issues with any current HP Web Jetadmin software components.



NOTE Each time HP Web Jetadmin downloads a file from the HP Web site, the Web site logs the transaction like any other visit to the Web site. No personally identifiable information, such as user name, email address, or physical address, is gathered as part of this process. HP does monitor Web logs in order to understand our customers and improve our products. All Web site transactions are subject to the HP privacy policy that can be found at: <http://www.hp.com>. Click **Privacy statement**.

Uploading packages

If you have installed HP Web Jetadmin on an isolated network where HTTP access to the HP Web site is not possible, you must manually download any new or updated software components. Once you have downloaded the files, use the **Product Update > Install** page to upload the file and install it.



NOTE Components are available from http://www.hp.com/go/wja_components.

Section 3

Configuration settings

This section contains the following:

[Chapter 9, Configuring general settings](#)

[Chapter 10, Configuring profiles](#)

[Chapter 11, Configuring network properties](#)

9 Configuring general settings

This section covers the following topics:

- [General Settings overview](#)
- [Support settings](#)
- [HTTP \(Web\) settings](#)
- [SMTP \(mail\) host](#)
- [Synchronized HP Web Jetadmin host machines](#)

General Settings overview

Specify the following information on the **General Settings** pages:

- The **Support Settings** page allows you to specify the administrator name and URL, as well as the URL for local and HP support.
- The **HTTP (Web)** page allows you to specify what port HP Web Jetadmin listens on, HP Web Jetadmin ability to access the Internet, and what machines can access HP Web Jetadmin.
- The **SMTP (Mail)** page allows you to specify the email address for printer alert messages.
- The **Synchronize** page allows other installations of HP Web Jetadmin to access device cache information. You can specify a password so that only authorized HP Web Jetadmin host machines can access the device information.

Support settings

This section covers the following topics:

- [Administrator information](#)
- [Local support URL](#)

Administrator information

The administrator name is displayed at the bottom of pages where users might need to know who to contact for help. For example, if users cannot update or create device groups, having the administrator name at the bottom of the page lets them know who to contact.

The URL can be an email address (for example, <mailto:username@domain.com>) or a Web page that provides support or information (for example, http://domain.com/homepage/specific_file.htm).

Local support URL

The local support URL can link to a Web page on your local intranet where users can find support information that you provide about HP Web Jetadmin or network devices. You might want to create a local support link to perform the following tasks:

- Access technical support information on local intranets, including frequently asked questions and their answers, common network problems and their solutions, or email.
- Contact offsite consultants, making it easy to communicate quickly when issues arise.
- Display special information about devices on a site map, such as maintenance schedules.
- Contact the person responsible for an individual device on a site map, providing prompt notification when a device requires attention.

If you specify a local support URL on the **General Settings > Support Settings** page, you can view the Web page by expanding the **Help** folder in the **Navigation** area. Click **Local Support** and the Web page appears in a separate window. A local support link greatly reduces help desk personnel dependency on the network administrator, lowering support costs and saving valuable time.



NOTE In addition to specifying a local support URL, you can specify an email address in the following format: **mailto:address@company.com**. When a user accesses the **Help > Local Support** page, HP Web Jetadmin creates a new email addressed to that person.

HTTP (Web) settings

The options on the **General Settings > HTTP (Web)** page control what port HP Web Jetadmin listens on, HP Web Jetadmin ability to access the Internet, and what machines can access HP Web Jetadmin.

HTTP port

The HTTP port is the port that HP Web Jetadmin listens on for requests. For example, if you specify port 55, you can access HP Web Jetadmin using either of the following URLs:

- `http://ipaddress:55/`
- `http://hostname:55/`

Change the HTTP port if the HP Web Jetadmin default port, 8000, conflicts with another Web server on the machine. If HP Web Jetadmin is the only Web server on the host machine, you can change the HTTP port to 80. Since port 80 is the default HTTP port, you do not have to include the port number in the URL to access HP Web Jetadmin. Access HP Web Jetadmin using either of the following URLs:

- `http://ipaddress/`
- `http://hostname/`

If you change the HTTP port, you must restart the HP Web Jetadmin service for the change to take effect.

HTTP proxy

Configure the HTTP proxy that HP Web Jetadmin uses to download HP Jetdirect firmware, printer firmware updates, new device support, and HP Web Jetadmin updates from the Internet.

If you do not specify the HTTP proxy, HP Web Jetadmin cannot access the HP Web site. This means that, for example, you cannot use the HP Web Jetadmin Intelligent Update feature to download and install components such as software updates, additional language packs, and device support.

Allow list

Create an allow list that specifies which IP addresses can and cannot access the HP Web Jetadmin host machine. Specify an individual IP address or a range of IP addresses. If you are concerned about security, use IP addresses to closely control who can access HP Web Jetadmin.

The **Order for HP Web Jetadmin Access** section determines what order HP Web Jetadmin processes the IP addresses specified in the **Allow HP Web Jetadmin Access** and **Deny HP Web Jetadmin**

Access sections. The following describes the HP Web Jetadmin process for each of the options in the **Order for HP Web Jetadmin Access** section:

- **None - Open to All Clients** – HP Web Jetadmin allows any machine to access the software. If you specify IP addresses in either the **Allow HP Web Jetadmin Access** or **Deny HP Web Jetadmin Access** sections, HP Web Jetadmin ignores those settings. Even though any machine can access HP Web Jetadmin, all of the other HP Web Jetadmin security features, such as profiles and device passwords, are still in effect.
- **Allow then Deny** – HP Web Jetadmin processes the IP addresses in the **Allow HP Web Jetadmin Access** section, and then processes the IP addresses in the **Deny HP Web Jetadmin Access** section. IP addresses that are denied take precedence over IP addresses that are allowed. If an IP address is specified in the **Deny HP Web Jetadmin Access** section, HP Web Jetadmin denies that machine access to the software even if the same IP is also specified in the **Allow HP Web Jetadmin Access** section. If there are no IP addresses specified in either section, HP Web Jetadmin allows any machine to access the software.
- **Deny then Allow** – HP Web Jetadmin processes the IP addresses in the **Deny HP Web Jetadmin Access** section, and then processes the IP addresses in the **Allow HP Web Jetadmin Access** section. IP addresses that are allowed take precedence over IP addresses that are denied. If an IP address is specified in the **Allow HP Web Jetadmin Access** section, HP Web Jetadmin allows that machine to access the software even if the same IP is also specified in the **Deny HP Web Jetadmin Access** section. If there are no IP addresses specified in either section, HP Web Jetadmin allows any machine to access the software.

SMTP (mail) host

When HP Web Jetadmin receives an alert from a printer, it sends an alert message to the email addresses that you specify. The options on the **General Settings > SMTP (Mail)** page specify the SMTP mail host and port number that HP Web Jetadmin uses to send the alert messages. You can also send a test email message from the **SMTP (Mail)** page to verify that the SMTP mail host is working correctly.

Synchronized HP Web Jetadmin host machines

The HP Web Jetadmin Synchronization feature provides the ability to share device cache information between multiple installations of HP Web Jetadmin. You can choose to have a primary HP Web Jetadmin host machine that gathers information from multiple, secondary HP Web Jetadmin host machines. Or, you can choose to share and gather information between a primary host machine and with all or some secondary HP Web Jetadmin host machines.

Sharing information between primary and secondary host machines can help manage large networks that have many locations around the world. For example, each location can use a secondary HP Web Jetadmin host machine to manage devices at one location. Then, a primary HP Web Jetadmin host machine can manage all secondary host machines. The primary host machine can gather network information for all the networks around the world. Network administrators can use this information to monitor the network as a whole, while the secondary host machines monitor the daily tasks of each network location. The ability to separate tasks using multiple installations of the HP Web Jetadmin software can help large companies manage networks and server capacity more effectively and efficiently than if one HP Web Jetadmin host machine managed all networked devices throughout the company.



NOTE To protect device cache information stored on an HP Web Jetadmin host machine, assign a password to each host machine. When an HP Web Jetadmin server connects to another HP Web Jetadmin server the password is verified before any information is gathered or shared.

10 Configuring profiles

This section covers the following topics:

- [Profiles overview](#)
- [Profile passwords](#)
- [Profile permissions](#)
- [Customizing HP Web Jetadmin appearance](#)
- [Customizing HP Web Jetadmin functionality](#)

Profiles overview

When you install HP Web Jetadmin, the Admin profile is automatically created and enabled. The Admin profile can view and configure everything in the product.

Create additional profiles in HP Web Jetadmin for different classes of users. Through these profiles, you can control what parts of HP Web Jetadmin specific classes of users can access and what they can do. For example, allow a specific class of users to view status and configuration information without giving them the ability to change the configuration settings. You can also use profiles to hide product functionality that users do not need or that you do not want them to see.



NOTE You can delete any of the profiles that you have created, but you cannot delete the Admin profile.

The default profile is the profile that HP Web Jetadmin automatically uses whenever a user accesses the product. Initially, the Admin profile is the default profile. If you choose a default profile other than Admin, you can control how much HP Web Jetadmin functionality is available by default.

You can change the tasks that a particular class of users can perform. If you no longer need to provide access to a particular class of users, delete that profile. That class of users can still access HP Web Jetadmin using one of the other profiles if it is appropriate.

Profile passwords

A profile password prevents unauthorized users from performing the tasks allowed for that profile. The Admin profile can assign a password to each profile on the **General Settings > Profiles Administration > Authentication** page. Users can assign a password to the profile that they are currently using on the **General Settings > Current Profile Settings > Password** page.

The Admin profile password is assigned during the HP Web Jetadmin installation process. If you do not type an Admin profile password when prompted during the HP Web Jetadmin installation process, the Admin profile password will be set to *blank*. The password for the Admin profile prevents unauthorized users from changing HP Web Jetadmin settings and managing device groups. HP recommends that you always have a password assigned to the Admin profile to prevent unauthorized access to HP Web Jetadmin.



NOTE By default, the Admin profile always has a password associated with it unless the administrator deletes the password from the **General Settings > Profiles Administration > Authentication** page.

Instead of using profile passwords, you can associate Windows NT domain users and groups to a profile. Then, when users log into HP Web Jetadmin, they can specify their Windows NT domain user name and password. This method simplifies the login process for the users because they do not have to learn a new profile password.

Profile permissions



NOTE You can only view the **General Settings > Profiles Administration > Permissions** pages if you access HP Web Jetadmin using the Admin profile. You must also have another profile, such as a User profile, set up on the HP Web Jetadmin host machine.

Specify what features appear in the **Navigation** area and on the content toolbar for each of the profiles that you create. The Admin profile can specify these options on the **General Settings > Profiles Administration > Permissions > Disable Pages** page.



NOTE You cannot change the settings for the Admin profile.

Use the **General Settings > Profiles Administration > Permissions > Device Editing Modes** page to specify if a profile can edit HP Web Jetadmin settings, create print queues, edit device groups, and edit device configuration options.

Allow a profile to edit the configuration options for all of the devices in the device cache or only edit the devices in specific device groups. If you allow a profile to edit the device configuration options, you can limit the profile to specific types of configuration options.

Customizing HP Web Jetadmin appearance

Customize each profile to control how HP Web Jetadmin looks. Apply the same settings to all of the profiles or you can select individual profiles and apply different settings to each one. The Admin profile can change the settings for each profile on the **General Settings > Profiles Administration > Appearance** page. Users can change the settings for the profile that they are currently using on the **General Settings > Current Profile Settings > Appearance** page.

Integrated context help

By default, HP Web Jetadmin displays the context help in a separate browser window. If you enable the **Integrate Context Help** option, HP Web Jetadmin displays the context help within the software. The help appears on the right side of the content area. As you move from page to page, the text changes to reflect the current page.

Monitored Devices, Critical Devices, and Caution Devices alerts

The **Monitored Devices** section in the **At a Glance** area displays the devices HP Web Jetadmin is monitoring for alerts and how many of those devices have generated critical alerts or caution alerts. If you disable the **Show Alerts Update** option, HP Web Jetadmin removes the **Monitored Devices** section from the **At a Glance** area.

When you click the **Monitored Devices** link, HP Web Jetadmin displays a page where you can choose which devices HP Web Jetadmin monitors for alerts. When you click the **Critical Devices** and **Caution Devices** links, HP Web Jetadmin opens a temporary device group displaying all of the devices that have generated a critical alert or a caution alert.



NOTE If you are not monitoring devices, HP Web Jetadmin does not display the **Critical Devices** and **Caution Devices** alerts.

Customizing HP Web Jetadmin functionality

Customize each profile to control how HP Web Jetadmin works. Apply the same settings to all of the profiles or you can select individual profiles and apply different settings to each one. The Admin profile can change the settings for each profile on the **General Settings > Profiles Administration > Default Views** page. Users can change the settings for the profile that they are currently using on the **General Settings > Current Profile Settings > Default Views** page.

Default Navigation area

Specify how HP Web Jetadmin displays the folders in the expandable tree in the **Navigation** area. You can select a view that only displays the most commonly used folders, such as the **Device Lists** or **Multiple Device Configuration** folders. Or you can select a view that displays all of the HP Web Jetadmin folders. Limiting the number of folders that appear in the **Navigation** area for specific profiles allows users to concentrate on the tasks that only apply to them.



NOTE To select specific pages for display in the **Navigation** area, go to the **General Settings > Profiles Administration > Permissions > Disable Pages** page.

Default device list view

Specify which device list view that you want HP Web Jetadmin to use. From the **Default View** drop-down list, choose one of the HP Web Jetadmin predefined views or one of the custom views that you have created. In addition, you can specify if HP Web Jetadmin automatically displays the device icons and status indicators in the device lists.

Default home page

Specify which page HP Web Jetadmin automatically displays the first each time users start HP Web Jetadmin in their browser, when users click the home icon on the content toolbar, and when users click **Refresh** or **Reload** in their browser. In the **HP Web Jetadmin Default Page** section, choose to display a list of all of the devices available, a specific **Device Status** page, a list of all of the device groups available, or a list of the devices in a specific device group.

Default device group view

Specify the default view that HP Web Jetadmin displays when users open a device group. From the **Default Device Group View** drop-down list, choose to display the device group as a map, a list of devices, or a list of subgroups. In addition, you can specify if HP Web Jetadmin automatically displays the device or device group icons and status indicators.

11 Configuring network properties

This section covers the following topics:

- [Network properties overview](#)
- [General network settings](#)
- [SNMP settings](#)
- [BOOTP settings](#)
- [TFTP settings](#)
- [Java polling rate](#)

Network properties overview

Specify the following information on the **Network Settings** pages:

- The **General Network Settings** page allows you to specify how HP Web Jetadmin performs on the network.
- The **SNMP** page allows you to specify how long HP Web Jetadmin waits for devices to respond and how many times it pings the device if it does not respond.
- The **BOOTP** page allows you to enable HP Web Jetadmin to function as a BOOTP server. You can also configure specific information for each HP Jetdirect device.
- The **TFTP** page allows you to specify the timeout value for HP Jetdirect firmware and the number of retries the device is allowed after it times out.
- The **Polling** page allows you to specify how often HP Web Jetadmin refreshes Java applets.

General network settings

The following options on the **Device Management > Management Settings > Network Settings > General Network Settings** page control HP Web Jetadmin performance on the network:

- The **Enable DNS Lookups** option allows HP Web Jetadmin to get IP hostnames from a DNS server.
- The **Enable ARP/Route Execution** option allows HP Web Jetadmin to use the system ARP cache and routing tables to create the entries it needs to communicate with unconfigured devices on the local subnet. Unconfigured devices have an IP address of 192.0.0.192.
- The **Allow Broadcasts** option allows HP Web Jetadmin to send any broadcasts to accomplish device discoveries, IPX network discoveries, and BOOTP configurations.
- The **Allow Broadcasts to Large Subnets** option allows HP Web Jetadmin to send broadcast traffic to subnets that are class B size (255.255.0.0) or larger.

SNMP settings

The options on the **Device Management > Management Settings > Network Settings > SNMP** page specify how long HP Web Jetadmin waits for devices to respond and how many times it pings a device that does not respond.

BOOTP settings

HP Web Jetadmin can function as a BOOTP server. Configure specific information for each HP Jetdirect device on the **Device Management > Management Settings > Network Settings > BOOTP** page. If HP Web Jetadmin has an entry for a device and it receives a BOOTP request from that device, it answers the BOOTP request using this information.

You can also view BOOTP devices in standard UNIX/Linux bootptab format and delete device entries from the BOOTP table.

TFTP settings

HP Web Jetadmin uses the options on the **Device Management > Management Settings > Network Settings > TFTP** page when updating HP Jetdirect firmware. The timeout value specifies how long HP Web Jetadmin waits before timing out. The retry value specifies how many times HP Web Jetadmin retries the firmware update after a timeout.

Java polling rate

Specify how often HP Web Jetadmin refreshes Java applets, such as the Java Status applet, on the **Device Management > Management Settings > Network Settings > Polling** page. When the polling rate interval is reached, HP Web Jetadmin updates the Java applets with any new information.

By default, the Java polling rate is 6 seconds. If HP Web Jetadmin polls devices more often, it affects network traffic and increases the Web server load. If you are running HP Web Jetadmin on a host machine with a particularly heavy load, you might want to have HP Web Jetadmin poll devices less often.

Section 4

Alerts

This section contains the following:

[Chapter 12, Overview of alerts](#)

[Chapter 13, Configuring and managing alerts](#)

12 Overview of alerts

This section covers the following topics:

- [Alerts overview](#)
- [SNMP traps](#)
- [Polling](#)
- [Embedded Web server \(EWS\)](#)

Alerts overview

Alerts are messages that a device sends when a problem has occurred. You can enable HP Web Jetadmin alerts and configure the default settings for the alerts on the **Device Management > Alerts** pages. For example, a paper-out or toner-low error or warning from a printer can prompt HP Web Jetadmin to send an email message that contains detailed information about the error or warning. HP Web Jetadmin alert email messages allow administrators to receive proactive, real-time warnings for events that occur on networked devices. Administrators can correct the problems before they impact end user productivity, which saves time for both the administrator and the end user.

Once a device is enabled to send alerts in HP Web Jetadmin, HP Web Jetadmin uses one of the following methods to identify alerts that occur on a device:

- Simple Network Management Protocol (SNMP) traps—A SNMP trap is a signal sent from a device informing HP Web Jetadmin that an event has occurred. HP Web Jetadmin can listen for traps warning of a condition on a device.
- Polling—HP Web Jetadmin can periodically poll a device for status if the device does not support traps or EWS.
- Embedded Web server (EWS)—EWS is a Web server that is completely contained within a device. An EWS provides management information about the device. HP devices that support EWS can send alert information to HP Web Jetadmin warning of a condition on a device.

When HP Web Jetadmin receives a trap or an EWS alert from a device, it uses those traps or EWS alerts as an indication that something is wrong on the device and can query the device to gather more information. If the status of the device matches any of the configured alerts for the device, a detailed email message is composed and delivered to designated recipients. If a device only supports polling, HP Web Jetadmin sends SNMP status queries to the device at user-defined intervals. If the status condition of the device matches any of the configured alerts for the device, an email message is composed and delivered to designated recipients.

SNMP traps

SNMP traps are User Datagram Protocol (UDP) packets sent by devices when a warning or error condition occurs on a device. Traps provide real-time alert messages, which means an alert message is sent instantly after an event occurs on a device. Traps also minimize network traffic since traps only create network traffic as events occur on a device.

Trap server port number

To receive alerts, HP Web Jetadmin must run a background trap server. The trap server listens on the TCP/IP port for messages. The port number identifies the TCP/IP port. If alerts are not working and event log messages indicate that the trap server failed to start, you may need to change the port number. Specify the port number on the **Device Management > Alerts > Receiver Settings** page.



NOTE If you change the port number, you will need to restart HP Web Jetadmin and reset the alerts on the monitored devices. To reset the alerts, remove the alert monitoring status and then select the devices to be monitored. If the default alert settings are different for the device, you must reset the alerts that you need to monitor for the device.

Polling

If traps cannot be enabled on a device, HP Web Jetadmin can poll devices at scheduled intervals. However, polling might not coincide with the exact time an event occurs on a device. Polling also increases network traffic at scheduled intervals. The advantage of polling is that if a device cannot communicate to the network, it would be impossible for a device to send a trap warning of the event. Polling can occur regardless of the state of a device, and can determine if a device is disabled.

Polling delay

To receive alerts for devices that do not support SNMP traps, HP Web Jetadmin must periodically query the device. The polling delay is how long HP Web Jetadmin waits before asking each non-SNMP trap device what state it is in. Decreasing this number provides quicker feedback, but it increases network traffic. Specify the polling delay on the **Device Management > Alerts > Receiver Settings** page.

Embedded Web server (EWS)



NOTE Some EWS-capable devices might not support sending alerts to HP Web Jetadmin. For more information, see the Alerts in HP Web Jetadmin White Paper. White Papers are available at http://www.hp.com/go/wja_whitepapers.

EWS-capable devices that do support sending alerts to HP Web Jetadmin must be connected to the network using an internal HP Jetdirect print server.

HP devices with an embedded Web server, such as the HP LaserJet 4100 and HP LaserJet 9000 printers, can send alerts directly to recipients when events occur on a device. There are some events, such as Perform Maintenance Kit and Drum Life Low, for which only the EWS can send alerts. These events do not cause the device to send traps and the events cannot be detected through status polling. For events such as these, HP Web Jetadmin directs the device to send the EWS alerts to HP Web Jetadmin. HP Web Jetadmin uses the alert information to create alert emails and send them to designated recipients. The alerts that are sent from an EWS-capable device display the same in HP Web Jetadmin as any other HP Web Jetadmin alert. This feature provides a consistent format for alerts and allows logging of EWS-generated alerts in HP Web Jetadmin.

13 Configuring and managing alerts

This section covers the following topics:

- [Configuring HP Web Jetadmin alerts](#)
- [Duplicate alerts](#)
- [Log file](#)

Configuring HP Web Jetadmin alerts

To configure alerts in HP Web Jetadmin, you must perform the following tasks:

1. Configure the SMTP mail server. This step is only required if you are setting up alert email notification.
2. Select the devices for alert monitoring.
3. Select the alerts for each device or group of devices.
4. Select the email accounts that should receive notifications and configure the format of the notifications.

Configure the mail server

If you want to set up email notification, the first step in configuring alerts is to provide the location of an SMTP-compliant mail server to HP Web Jetadmin. HP Web Jetadmin uses the mail server to send email messages to designated recipients. Specify the SMTP mail server on the **General Settings > SMTP (Mail)** page.



NOTE If the mail server entered is not SMTP compliant, an error message appears.

It is recommended to send a test email message through the mail server. If the **To** and **From** addresses are not valid or if the mail server is not configured to relay emails, an error message appears. Verify the addresses using the following commands through a telnet session using port 25:

```
telnet <mail server> 25 (expected result: 220 xxxx)

HELO

MAIL FROM: <from address> (expected result: 250 xxxx)

RCPT TO: <to address> (expected result: 250 or 251 xxxx)

RSET
```

Some mail servers expect the sending address to be a valid email address. HP Web Jetadmin provides the option to modify the sender address on the **Device Management > Alerts > Notification Settings** page in the **Email From Address** text box.

Select the devices to monitor

After entering the location of the SMTP mail server, select the devices for HP Web Jetadmin to monitor for alerts. You can enable alerts for a single device, multiple devices, or a device group. Use one of the following methods to enable alerts for devices:

- For a single device, go to a device's **Status** page, and then select **Alerts** from the drop-down list. The **Device Alert Settings** page appears.
- For multiple devices, go to the **Device Management > Alerts > Monitored Devices** page.
- For a device group, go to the **Device Management > Device Groups > group name** page and select **Alerts** from the **Device Group Tools** drop-down list.



NOTE After selecting a device for alert monitoring, any device that is in a critical or caution state for a subscribed alert appears in the **At a Glance** section. You can open devices in a critical or caution state to check the status and determine the cause of an alert.

Select the alerts



NOTE To select entire categories of alerts simultaneously, hold the **CTRL** or **SHIFT** keys while selecting alerts.

After alerts are enabled on a device or group of devices, select an event or condition that might cause downtime for users, such as a paper jam. If an event occurs on a device and HP Web Jetadmin is monitoring for that event, HP Web Jetadmin can send alerts to designated recipients. You can also subscribe to alerts that provide information that can be used to set up accurate device maintenance schedules. For example, HP Web Jetadmin can send an alert message based on a specified threshold limit of pages printed on a device.

Configure the default alert settings for all devices that HP Web Jetadmin monitors on the **Device Management > Alerts > Default Settings** page. The default settings are global settings that are initially applied to all monitored devices. To customize the alert settings for a device, a device group, or a single device within a group, go to the **Device Alert Settings** page.



NOTE If a device does not support a subscribed alert, HP Web Jetadmin reports that the device does not support the alert on the alert results page.

The settings that you specify on the **Device Alert Settings** page override the settings specified on the **Default Settings** page. To view a list of all the devices that HP Web Jetadmin is monitoring for alerts, go to the **Device Management > Alerts > Monitored Devices** page. All alerts that are enabled for a device appear on this list. You can add and remove devices from the list of devices. When you add a device, the alert settings are set to the default settings that you specified on the **Default Settings** page.

Select and configure the notification emails

Selecting recipients to receive alert notifications is the final step in the alert configuration process. Enter email accounts to receive alerts for a single device or group of devices on the **Device Alerts Setting** page or the **Default Settings** page. You can also specify email accounts to receive messages for unique alerts that may occur on a device. For example, send Toner Low alerts to the person responsible for ordering consumables, or send Printer Error alerts to a help desk. You can also specify a language preference for an email, which enables HP Web Jetadmin to send the same alert information to different people in different languages.

Email settings

HP Web Jetadmin provides various formats for email notifications where you can select how much information to include in an alert email message. HP Web Jetadmin can apply these settings to an individual email address or to a group of email address. For example, you can send an email in the

Verbose format to the help desk and send an email in the **Mobile** format to a technician for the same alert. HP Web Jetadmin can send the following alert messages to an email address:

- **Mobile** - A brief text message to an email-enabled mobile device. This message contains the event, the device name, and the URL for browsing to the **Device Status** page.
- **Concise** - A brief message that contains the event, the message that appears on the front panel, the device name, a link to the **Device Status** page, and the name and email address of the person to contact.
- **Verbose** - A detailed message that contains all of the information in the **Concise** message and detailed device information. It also includes a link to the **Device Status** page. This is the default.
- **Custom** - A custom message that contains information that is selected from a template. You can select different alert options and the order that the options appear in the email. You can create, edit, and delete templates.

Duplicate alerts

Sometimes devices send more than one alert for the same problem. For example, if a paper jam has not been cleared for a few days, HP Web Jetadmin might send multiple alert messages. You can specify how many days, hours, or minutes HP Web Jetadmin should wait before sending another alert for the same problem on the **Device Management > Alerts > Global Settings** page. You can also choose to ignore the first alert on the **Global Settings** page. To change this setting for a specific device, go to the **Device Alerts Settings** page. To change the default setting for this option, go to the **Default Settings** page.

Log file

HP Web Jetadmin keeps a log of every alert that it receives. You can use this log file to determine if a device has a pattern of problems or if a device needs preventative maintenance. Use the **View Alerts Log File** option on the **Device Management > Alerts > Global Settings** page to display the log file.



NOTE The log file is only available if the alerts that you have selected for monitoring have occurred.

You can review and change the log file with a text editor. You can also send the log file to enterprise management systems or call ticketing systems. The file name is `hpallog.txt` and is located in the following subdirectory on the HP Web Jetadmin host machine:

`<drive>:\Program Files\HP Web Jetadmin\doc\plugins\hpjalerts\modules\notification.`

Section 5 Discovery

This section contains the following:

[Chapter 14, Overview of discovery methods](#)

[Chapter 15, Configuring discovery methods](#)

[Chapter 16, Managing discoveries](#)

14 Overview of discovery methods

This section covers the following topics:

- [Discovery methods overview](#)
- [Discovering third-party devices](#)
- [Discovery methods](#)
- [Discovery traffic](#)
- [Planning a discovery strategy](#)

Discovery methods overview

If you use non-HP device management tools, you must manually add the device address and other information for each device to the tool cache. HP Web Jetadmin, on the other hand, uses a feature called discovery that searches the network for connected devices, displays the results in a list, and adds the devices to a device cache on the machine where it is running. You can then search the device cache to find devices that meet specific criteria, such as IP address, capability, model, or status, and configure them. Searching the device cache is much faster than running a discovery and it does not generate as much network traffic.

HP Web Jetadmin is capable of discovering devices automatically. The HP Web Jetadmin discovery feature provides the following advantages:

- You no longer have to manually search for devices and add the device configuration information to a cache.
- You can schedule discoveries to run automatically at specified intervals and at times when additional network traffic is least likely to have a negative impact on network performance.
- You can schedule discoveries to run at different times at different locations on the network. For example if a company has multiple locations around the world, you can schedule discoveries to run at the optimal time for each location depending on the time zone.
- You do not need to be present when discoveries run.
- Without leaving your workstations, you and help desk personnel can quickly find specific devices or those with particular capabilities.

Run an initial discovery to build a cache of device information after you install HP Web Jetadmin. After the device cache is built, run discoveries to help with the following ongoing management tasks:

- You can discover single new devices as soon as they are connected to the network.
- You can run a discovery at any time to find new devices or existing devices that have been updated.
- You can run a discovery to find SNMPv3-enabled devices that do not have credential information stored on the HP Web Jetadmin host machine. If a SNMPv3-enabled device has credential information stored on the HP Web Jetadmin host machine, HP Web Jetadmin can discover the device.

HP Web Jetadmin discovers devices in two ways. First, HP Web Jetadmin can send a query to the devices and listen for their responses. Second, HP Web Jetadmin can monitor the network for the signals that the devices send to indicate their presence on the network.

HP Web Jetadmin not only discovers devices on a network, it can discover other HP Web Jetadmin host machines. Typically, the network administrator decides which machines on the network can access HP Web Jetadmin. However, the network administrator may need to check the local or remote network to ensure that all HP Web Jetadmin host machines are necessary and secure. HP Web Jetadmin can discover other host machines by either searching the network by a range of IP addresses or sending a general SNMP request to all active workstations and servers. HP Web Jetadmin records all discovered host machines on a results page.

HP Web Jetadmin uses industry-standard SNMP queries to recognize devices and collect information about the devices. Then HP Web Jetadmin adds the information about new or updated devices to the

device cache. The following are some of the benefits that you and the help desk personnel might experience:

- You can create print queues for the discovered devices, making them available to the network.
- You and help desk personnel can search the device cache to find devices that meet specific criteria, such as status or specific features.
- You can export the information in the device cache and create an inventory of network assets.

Discovering third-party devices

HP Web Jetadmin can discover non-HP printers that use non-HP print server devices. By supporting third-party devices, Hewlett-Packard offers a network printer management solution that drives one step further toward the single solution concept that network administrators want. Now, you can use a single software interface to discover and manage the printers that all of the major printer vendors offer.

HP Web Jetadmin uses SNMP queries to gather information from printers and print server devices. For HP Web Jetadmin to discover third-party printers and non-HP print servers, the devices must meet the following criteria:

- The printer must be Standard Printer MIB (RFC 1759) compliant.
- The print server device must be MIB II (RFC 1213) compliant.
- The print server device must be able to send Standard Printer MIB queries to the printer and relay answers back to HP Web Jetadmin.

A Management Information Base (MIB) is a set of objects that defines the types of queries that can be asked of a device. The Standard Printer MIB is the set of objects defined in Request for Comments (RFC) 1759. For a third-party device, HP Web Jetadmin uses the Standard Printer MIB queries to obtain information about device status. This means that for HP Web Jetadmin to discover a printer, that printer must be able to answer the queries defined in the Standard Printer MIB.

MIB II is the set of objects defined in RFC 1213, and it is explicitly referenced in the Standard Printer MIB. For HP Web Jetadmin to discover a non-HP print server device, that device must be able to answer the queries defined in the MIB II. HP Web Jetadmin typically sends the following MIB II queries to obtain information about a print server device:

- MAC address
- IP address
- Hostname
- System description

HP external print server devices use a proprietary Peripheral Management Language (PML) to communicate with HP printers. Third-party external print server devices must be able to use a similar method to send the Standard Printer MIB queries to the printer and receive responses.

Even if a print server device is MIB II compliant and a printer is Standard Printer MIB compliant, it is still possible that HP Web Jetadmin will not discover the printer. This can happen if the response to the HP Web Jetadmin request packet only contains print server information. If HP Web Jetadmin does not receive any printer details, it cannot discover the device because there is not enough information in the print server device response to warrant a discovery.

Once HP Web Jetadmin discovers a third-party device, it can display some device information. The device information that HP Web Jetadmin displays is based on the Standard Printer MIB object queries that the device can answer, such as name or status. See [Third-party vendor support](#) for more information.

Discovery methods

The following is a brief description of HP Web Jetadmin discovery methods. Each method is described in more detail in [Chapter 15, Configuring discovery methods](#).

- [Local Broadcast — IP and IPX Broadcast discoveries](#) send a general SNMP request to all of the active devices on the local subnet or remote TCP/IP network.
- [Local Broadcast — IPX Service Query discovery](#) sends a General Service Query (GSQ) request to all of the active devices on the local subnet or remote IPX/SPX network.
- [Multicast/SLP discovery](#) sends a single SNMP request over an HP-specific multicast address. Only HP multicast-enabled devices respond to this request. You can limit the discovery method to the local subnet or configure it to cross up to 15 routers for remote subnets.
- [ARP Table discovery](#) uses ARP Table listings to find devices. You can configure the discovery to search the entire network, the local subnet plus one hop away, or just the local subnet where HP Web Jetadmin is installed.
- [Specified Addresses discovery](#) searches for all of the devices listed in a host file that you create.
- [IP Range discovery](#) searches for the devices located within a range of IP addresses.
- [Remote Discovery Agent \(RDA\) discovery](#) is a proxy service that HP Web Jetadmin uses to discover and configure HP Jetdirect print servers on remote TCP/IP networks.
- [NetWare Bindery discovery](#) queries Novell NetWare servers looking for entries in their Binderies that contain information about the HP Jetdirect devices that have sent SAP broadcasts to the server.
- [NetWare File Server Login discovery](#) searches for HP Jetdirect print servers that are configured to service a print queue on any NetWare file server that HP Web Jetadmin is logged onto. This discovery method can find HP Jetdirect print servers that have SAP broadcasts disabled.
- [Listen for New Devices discoveries](#) continually monitor the network for new devices. This is a passive method that does not generate traffic until it detects a device.
- [Other Installations of HP Web Jetadmin discovery](#) searches the network for other HP Web Jetadmin host machines.

Depending on the network environment and which discovery methods you enable, the length of time required to complete a discovery varies. This is not usually a problem because discoveries are typically run during off hours. If you run a discovery during work hours, you can check the status of the discovery in the **Background Tasks** section of the **At a Glance** area.

When you install HP Web Jetadmin, the following discovery methods are enabled by default:

- IP Broadcast discovery
- IPX Broadcast discovery
- Listen for New Devices discoveries

These default discovery methods are optimized for small networks, which may be able to handle more discovery traffic than large networks. Enable different discovery methods when you need to more optimally balance network traffic and discovery precision for your particular network.

Discovery traffic

Although the HP Web Jetadmin discovery feature eliminates the need to manually enter device address information into a management tool cache, the trade-off for this automation is a certain amount of network traffic. You have direct control over the level and duration of network traffic, its frequency, and the time it occurs.

Two types of network traffic occur on all networks. The distinction between them is important.

- General traffic, also known as broadcast traffic, is addressed so that all devices must process it. General traffic tends to be short, but it causes higher levels of network traffic. On large networks, general traffic inquiries produce less accurate results because many devices respond simultaneously and some of the responses are lost because of Ethernet collisions or buffer overflows.
- Directed traffic is sent to specific devices, which means that only those devices have to respond. Directed traffic lasts longer, but it does not cause as much network traffic. Directed traffic inquiries typically produce more accurate results because responses are not sent simultaneously, which means that they are more likely to be received. Even if a response is involved in an Ethernet collision, the response is retransmitted because it is a directed communication, not a broadcast.

Planning a discovery strategy

To decide which discovery methods are best suited for your particular environment, you must understand exactly how your network is structured and what you need the discoveries to accomplish. The following are some issues that you should consider when planning a discovery strategy:

- **Are you performing an initial device discovery or updating an existing device cache?** When you schedule discoveries for ongoing device cache maintenance, change the discovery methods that you originally enabled to build the device cache. For example, if you enabled a very slow but thorough discovery method for the initial discovery, such as an ARP Table discovery, you might want to choose a faster method for ongoing discoveries.
- **Do you have an HP Jetadmin discovery file that you want to migrate to HP Web Jetadmin?** You can import an HP Jetadmin discovery file (jetset.ini) to HP Web Jetadmin. This process converts the HP Jetadmin discovery file to HP Web Jetadmin format and appends it to the host file that you are using for HP Web Jetadmin discoveries. A Specified Addresses discovery finds all of the devices listed in the host file and adds them to the HP Web Jetadmin device cache.
- **How will you use the device cache that is created during the discoveries?** For example, a CIO might need asset information for all of the devices on a network. Help desk personnel, on the other hand, might only want information about the devices that they support, the devices that support certain features, or the devices that require maintenance.
- **What traffic is commonly found on your network and when does it occur?** Understanding network traffic patterns helps you determine what kind of discovery traffic your network can bear.
- **When is discovery traffic least likely to have a negative impact on other network traffic?** To minimize the impact of discovery traffic, schedule discoveries to run when other network usage is at a minimum.
- **Are network printers turned off regularly?** Because a discovery cannot find devices that are turned off, you should schedule discoveries to run when the devices that you want to discover are turned on. HP Web Jetadmin will discover devices that are in Power Save mode.
- **Do you need to discover devices configured with TCP/IP or IPX/SPX protocol?** You might get different results depending on whether you use a TCP/IP or IPX/SPX discovery. One reason this might occur is that you have older HP Jetdirect print servers on the network that only respond to IPX/SPX. Another reason might be the router filtering of one protocol versus the other. Some topology issues might affect one protocol differently than the other.
- **Will devices be located on a single subnet or across multiple routers?** HP Web Jetadmin takes longer to discover devices that are distributed widely across a large network. In addition, some discovery methods are limited to a single subnet and are not appropriate for wider discovery. For example, the Local Broadcast discoveries only find devices on the subnet where HP Web Jetadmin is installed. They would not be appropriate for discovering devices on remote subnets.
- **What types of devices do you need to discover?** Will the discovery be aimed at a single IP address or a range of IP addresses? Do you need to discover devices that are configured with static IP addresses or that have SAP broadcasts disabled? Do the devices support multicast broadcasts? Discovery methods vary in the criteria they use to find devices and the types of devices they look for.
- **How many devices do you need to discover?** If there are many devices to discover, the Local Broadcast discoveries might not be accurate since all of the devices respond at the same time, which might result in collisions or buffer overflows.

- **How many copies of HP Web Jetadmin are installed on the network?** If you are running a separate copy of HP Web Jetadmin on each subnet, a discovery takes less time because it is focused on a smaller area. Also, there is no need to limit the discovery method according to its ability to search multiple subnets.
- **Do you need to discover SNMP-capable devices that do not have credential information stored on the HP Web Jetadmin host machine?** Some discoveries communicate with HP Web Jetadmin using SNMPv1. With increasing security requirements, newer devices are configured to communicate using SNMPv3. You can enable HP Web Jetadmin to communicate and discover SNMPv3-enabled devices, as well as SNMPv1 devices. The IP Broadcast, IP Range, and Specified Address discovery methods support SNMPv3-enabled discoveries. If a SNMPv3-enabled device is discovered and the device does not have credentials, the device's IP address displays on the **Device Management > Tools > Unmanaged SNMPv3 Devices** page. To manage a SNMPv3-enabled device using HP Web Jetadmin, you must specify device credentials.

After you answer these questions, decide which discovery method or combination of methods is best suited for your environment. Remember that you will typically need to use more than one discovery method to achieve the best balance between network productivity and the accuracy of discovery results.



NOTE When you use multiple discovery methods, each discovery is completely independent. For example, if you run an IP Broadcast discovery and an ARP Table discovery, the ARP Table discovery finds devices on the local subnet even if the IP Broadcast discovery already found them and added them to the device cache.

The following guidelines can help you choose the appropriate discovery methods for your network.

Goal	Discovery strategy
Minimize the impact on other network traffic.	Set up HP Web Jetadmin to perform regularly scheduled discoveries during off hours at intervals that are appropriate for your network environment.
Achieve the most thorough discovery of TCP/IP-configured devices on a local network.	Use a combination of the Local Broadcast discoveries and a local ARP Table discovery.
Achieve the most thorough discovery of devices on local and remote networks.	Use one or more of the following discovery methods: <ul style="list-style-type: none"> ● Specified Addresses discovery (TCP/IP or IPX/SPX) ● IP Range discovery (TCP/IP) ● ARP Table discovery (TCP/IP)
Perform a general discovery of TCP/IP devices on enterprise networks or all remote networks one hop away from the host machine where HP Web Jetadmin is installed.	Use an ARP Table discovery.
Search through a range of addresses for TCP/IP devices on local or remote networks.	Use a Specified Addresses or an IP Range discovery for local or remote networks.
Only discover devices that are configured with the IPX/SPX protocol.	Use one or more of the following discovery methods: <ul style="list-style-type: none"> ● One of the Local Broadcast discoveries ● Specified Addresses discovery ● NetWare Bindery discovery

Goal	Discovery strategy
Discover new TCP/IP or IPX/SPX devices as they are added to the local network.	Use one or more of the following discovery methods: <ul style="list-style-type: none"> • IP or IPX Broadcast discovery • Specified Addresses discovery (TCP/IP or IPX/SPX) • NetWare Bindery discovery (IPX/SPX) • Listen for New Devices discoveries
Discover new devices in a relatively static network environment.	Run an initial discovery and disable all of the discovery methods except Listen for New Devices.
Run a very quick discovery.	Use one or more of the following discovery methods: <ul style="list-style-type: none"> • One of the Local Broadcast discoveries • Multicast/SLP discovery
Create a short burst of network traffic, but a high spike of activity during that time.	Use one or more of the following discovery methods: <ul style="list-style-type: none"> • One of the Local Broadcast discoveries • Multicast/SLP discovery
Create a small level of discovery traffic on the network, but sustain it for a longer period of time.	Use one or more of the following discovery methods: <ul style="list-style-type: none"> • Specified Addresses discovery • ARP Table discovery • Listen for New Devices discoveries
Only discover devices on the local subnet.	Use one of the Local Broadcast discoveries
Discover devices on more than one subnet.	Use one or more of the following discovery methods: <ul style="list-style-type: none"> • IP Range discovery • ARP Table discovery • Multicast/SLP discovery • NetWare Bindery discovery
Limit the scope of discovery on the network.	Use one or more of the following discovery methods: <ul style="list-style-type: none"> • IP Range discovery • ARP Table discovery • Multicast/SLP discovery • NetWare Bindery discovery

15 Configuring discovery methods








This section covers the following topics:

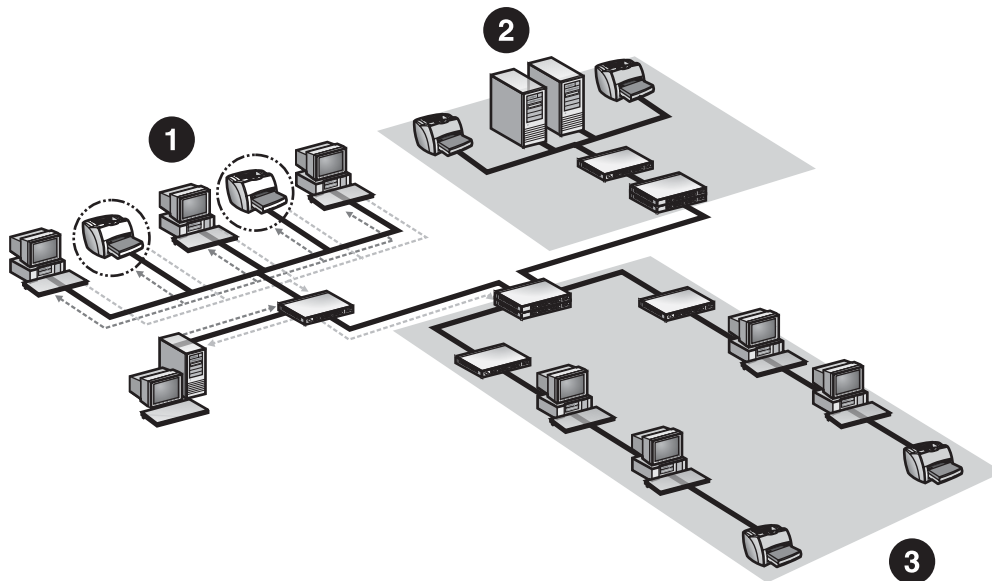
- [HP Web Jetadmin Discovery overview](#)
- [Local Broadcast — IP and IPX Broadcast discoveries](#)
- [Local Broadcast — IPX Service Query discovery](#)
- [Multicast/SLP discovery](#)
- [ARP Table discovery](#)
- [Specified Addresses discovery](#)
- [IP Range discovery](#)
- [Remote Discovery Agent \(RDA\) discovery](#)
- [NetWare Bindery discovery](#)
- [NetWare File Server Login discovery](#)
- [Listen for New Devices discoveries](#)
- [Other Installations of HP Web Jetadmin discovery](#)

HP Web Jetadmin Discovery overview

This section contains descriptions of the HP Web Jetadmin discovery methods.

Local Broadcast — IP and IPX Broadcast discoveries

Icon	Description	Icon	Description
	HP Web Jetadmin host machine		Printer
	Discovered devices		Server
	Workstation		Hub
	Router		



1	Subnet A
2	Subnet B
3	Subnet C

During the IP and IPX Broadcast discoveries, HP Web Jetadmin sends a general SNMP request to all of the active devices on the local subnet or remote TCP/IP network. HP Web Jetadmin listens for responses from supported devices. If any of the supported devices that respond are not listed in the device cache or if the information about them is not correct, HP Web Jetadmin updates the device cache with the device information.

By default, the broadcast occurs over the protocol that is installed (TCP/IP or IPX/SPX). Configure the IP and IPX Broadcast discoveries to occur on just one of the protocols or you can turn them off completely. However, only the Windows environment supports IPX/SPX.



NOTE The IP and IPX Broadcast discovery methods are enabled by default.

The IP and IPX Broadcast discoveries are very fast, but they cause a high spike in network traffic because all of the devices respond at the same time. Because so many responses are sent at once, some responses could collide and never reach HP Web Jetadmin or the buffer could overflow. These collisions and buffer overflows can affect the accuracy of the information.



NOTE The IPX Broadcast discovery method is only available in Windows if IPX/SPX is installed on the host machine where HP Web Jetadmin is running.

Recommendations for using the IP and IPX Broadcast discoveries








You *should* use the IP and IPX Broadcast discoveries in the following situations:

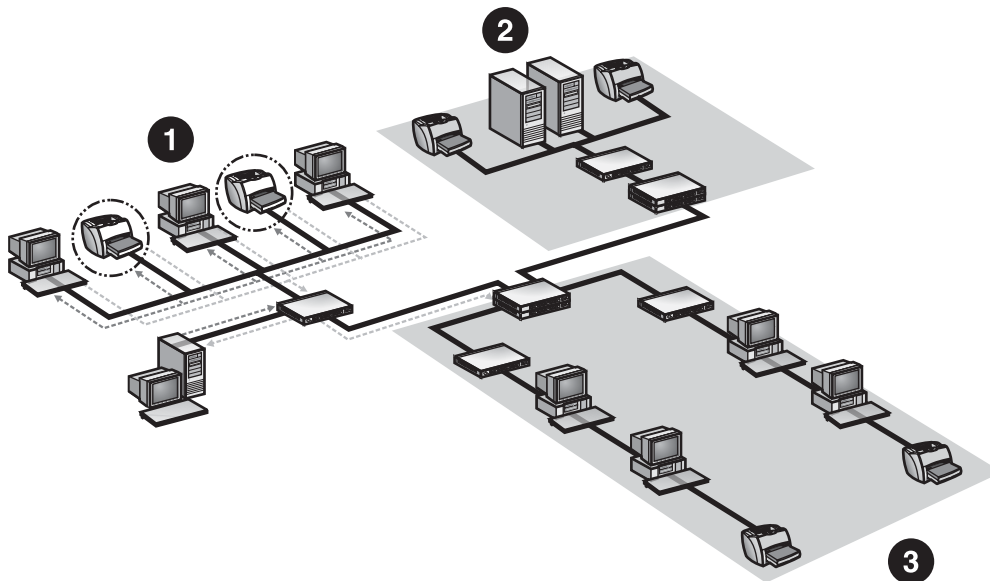
- You want a fast search.
- You need to search a fairly small network with relatively few devices.
- You plan to schedule discoveries to run when they will not have a negative impact on other network activity.
- You need to search a single subnet.
- You need to find unconfigured devices.

You *should not* use the IP and IPX Broadcast discoveries in the following situations:

- You need to search a large network with many devices in each broadcast domain, which increases the possibility of response collisions.
- You need a very accurate discovery. HP Web Jetadmin might miss some responses because of collisions.
- You are running a switched environment and the switches do not handle broadcasts well. Schedule the IP and IPX Broadcast discoveries to run at night or do not use them at all.

Local Broadcast — IPX Service Query discovery

Icon	Description	Icon	Description
	HP Web Jetadmin host machine		Printer
	Discovered devices		Server
	Workstation		Hub
	Router		



1	Subnet A
2	Subnet B
3	Subnet C

During an IPX Service Query discovery, HP Web Jetadmin sends a General Service Query (GSQ) request to all of the active devices on the local subnet or remote IPX/SPX network. HP Web Jetadmin listens for responses from supported devices. If any of the supported devices that respond are not listed in the device cache or if the information about them is not correct, HP Web Jetadmin updates the device cache with the device information. Routers should also be able to respond with information about remote devices as long as SAP broadcasts are enabled.



NOTE The IPX Service Query discovery method is enabled by default.

An IPX Service Query discovery is very fast, but it causes a high spike in network traffic because all of the devices respond at the same time. Because so many responses are sent at once, some responses could collide and never reach HP Web Jetadmin or the buffer could overflow. These collisions and buffer overflows can affect the accuracy of the information.



NOTE The IPX Service Query discovery method is only available in Windows if IPX/SPX is installed on the host machine where HP Web Jetadmin is running.

Recommendations for using an IPX Service Query discovery








You *should* use an IPX Service Query discovery in the following situations:

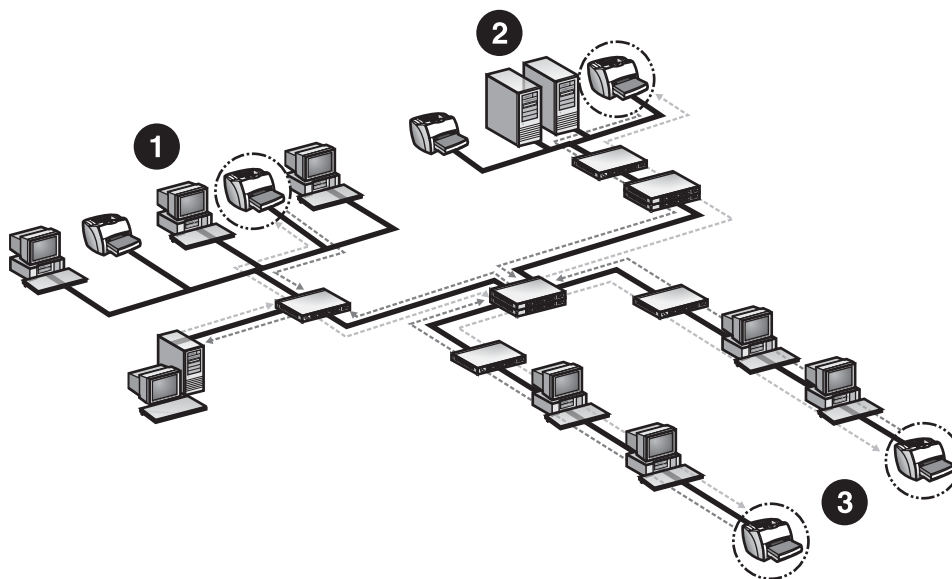
- You want a fast search.
- You need to search a fairly small network with relatively few devices.
- You plan to schedule discoveries to run when they will not have a negative impact on other network activity.
- You need to search a single subnet.
- You need to find unconfigured devices.

You *should not* use an IPX Service Query discovery in the following situations:

- You need to search a large network with many devices in each broadcast domain, which increases the possibility of response collisions.
- You need a very accurate discovery. HP Web Jetadmin might miss some responses because of collisions.
- You are running a switched environment and the switches do not handle broadcasts well. Schedule an IPX Service Query discovery to run at night or do not use it at all.

Multicast/SLP discovery

Icon	Description	Icon	Description
	HP Web Jetadmin host machine		Printer
	Discovered devices		Server
	Workstation		Hub
	Router		



1	Subnet A
2	Subnet B
3	Subnet C

During a Multicast/SLP discovery, HP Web Jetadmin sends a single SNMP request over an HP-specific multicast address. Only HP multicast-enabled devices respond to this request. When a device responds, HP Web Jetadmin sends another SNMP request to that device to gather more information and updates the device cache with the device information. Limit the discovery to the local subnet or configure it to cross up to 15 routers for remote subnets.



NOTE The Multicast/SLP discovery method is not enabled by default.

A Multicast/SLP discovery is similar to the Local Broadcast discoveries except that it only looks for specific devices. This means that it does not generate as much network traffic and is less likely to miss device responses. However, a Multicast/SLP discovery can only find HP multicast-enabled devices.



NOTE HP Jetdirect firmware version x.06.00 or greater is required to support the Multicast/SLP discovery method.

Recommendations for using a Multicast/SLP discovery








You *should* use a Multicast/SLP discovery in the following situations:

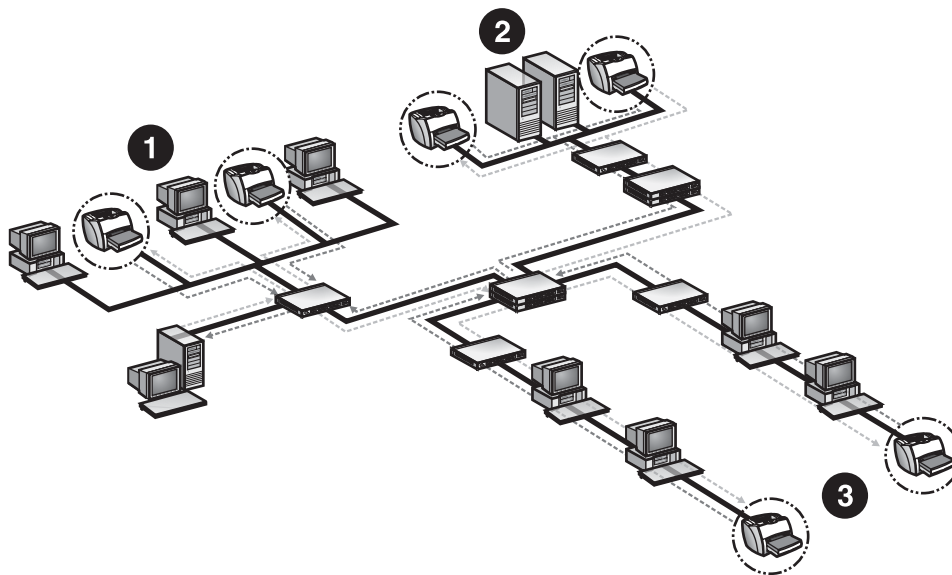
- You only need to discover devices that support multicast broadcasts.
- You need to search a fairly small network with relatively few supported devices.
- You plan to schedule discoveries to run when other network activity is low.
- You need to discover devices across multiple subnets.

You *should not* use a Multicast/SLP discovery in the following situations:

- You need to search a large network with many supported devices, which increases the possibility of response collisions.
- You are running a switched environment and the switches do not handle broadcasts well. Schedule a Multicast/SLP discovery to run at night or do not use it at all.
- Your network includes many legacy devices that do not support multicast broadcasts.

ARP Table discovery

Icon	Description	Icon	Description
	HP Web Jetadmin host machine		Printer
	Discovered devices		Server
	Workstation		Hub
	Router		



1	Subnet A
2	Subnet B
3	Subnet C

The ARP Table discovery method is unique to HP management tools. Each IP-capable device maintains an Address Resolution Protocol (ARP) Table that maps the IP address to the media access control (MAC) address for any device it communicates with on the network. An IP address must be resolved to a MAC address before communication to that IP address can occur.

During an ARP Table discovery, HP Web Jetadmin first sends an SNMP request to each device listed in the ARP Table maintained on the machine where it is running to gather information. HP Web Jetadmin then searches the ARP Tables on each of those devices and sends an SNMP request to each device listed in those ARP Tables. HP Web Jetadmin continues searching the ARP Tables maintained by all of the devices that it finds until it cannot discover any more devices.



NOTE The ARP Table discovery method is not enabled by default.

Configure an ARP Table discovery to search the entire network (unrestricted), the local subnet and one hop away, or just the local subnet. The discovery level determines how extensive the discovery is, which in turn determines how long the discovery takes and how much network traffic the discovery creates. For example, in an environment such as Hewlett-Packard's, which has one of the largest private intranets in the world, the following statistics have been recorded:

- Searching only the local subnet takes approximately 10 minutes.
- Searching the local subnet plus one hop away takes approximately 20 minutes.



NOTE These numbers are provided for the sake of comparison and do not constitute a performance guarantee.

An ARP Table discovery generates a low level of network traffic that is sustained for an extended period of time. An ARP Table discovery is more accurate than the Local Broadcast discoveries because the device responses are not sent at the same time.

To discover devices, the ARP Table discovery method needs a list of known addresses. Normally, an ARP Table discovery uses an SNMP broadcast to determine an initial list of devices to discover, also known as a seed list. Avoid this broadcast by specifying your own seed list of addresses. Seed list addresses should have SNMP agents. Routers and gateways are excellent choices as seed list addresses because, typically, they have recently talked to and know about many devices on your network.








Recommendations for using an ARP Table discovery

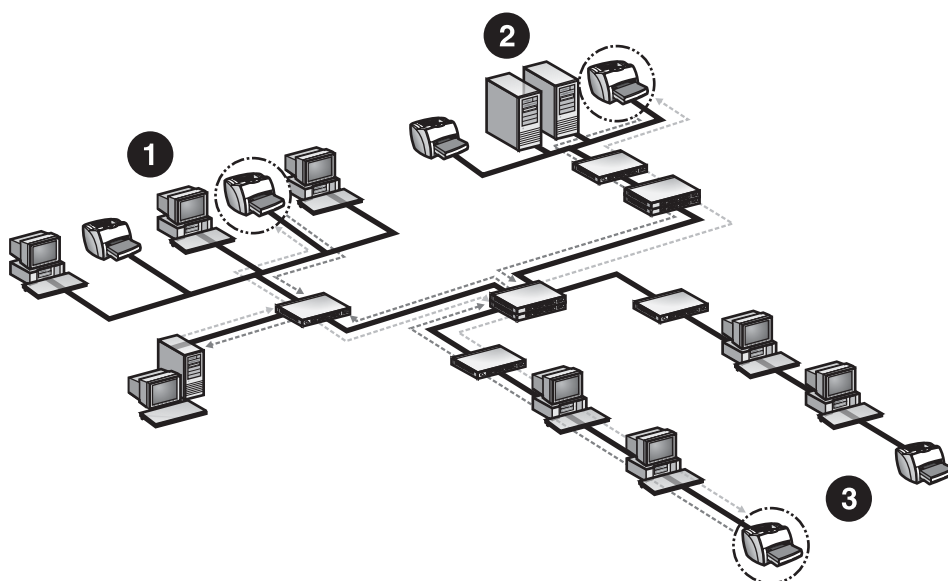
You *should* use an ARP Table discovery in the following situations:

- You do not want to generate a high level of traffic on the network.
- You need an extremely accurate discovery.
- You want to limit the scope of the discovery on the network.
- You schedule the discovery for a time when you do not care how long it takes.

You *should not* use an ARP Table discovery when you want a fast discovery across a large network.

Specified Addresses discovery

Icon	Description	Icon	Description
	HP Web Jetadmin host machine		Printer
	Discovered devices		Server
	Workstation		Hub
	Router		



1	Subnet A
2	Subnet B
3	Subnet C

During a Specified Addresses discovery, HP Web Jetadmin searches for the devices defined in a host file. HP Web Jetadmin sends a directed SNMP request to each device in the host file. Upload a host file to HP Web Jetadmin or browse an existing host file.



NOTE The Specified Addresses discovery method is not enabled by default.

A Specified Addresses discovery generates very little network traffic because HP Web Jetadmin talks directly with each device that is listed in the HP Web Jetadmin host file, even if the device is on a remote subnet. However, you must have an existing host file or create one in any application that can save it

as a text file. In addition, the results of a Specified Addresses discovery are only as accurate as the addresses in the host file. If you do not list a device in the host file, HP Web Jetadmin cannot discover it. A Specified Addresses discovery can only search through a range of IP addresses if you include each IP address in the host file.

Creating the host file

When you create a host file, name the file anything that you want and put it in any directory that you want. When you upload the new host file, HP Web Jetadmin imports the data and saves a copy of the new host file in a file called `hosts.txt`. HP Web Jetadmin puts the new `hosts.txt` file in the HP Web Jetadmin installation directory in a subdirectory called `\doc`.

Each line in the host file represents one device and must be separated by a line break. An entry can be any combination of IP address, IP hostname, IPX address, or hardware address separated by spaces.

Add entries to the host file either manually using an editor or directly on the **Device Management > Discovery > Specified Addresses** page. To add a comment to a host file entry, type a pound (#) symbol, and then type the comment.

Recommendations for using a Specified Addresses discovery

You *should* use a Specified Addresses discovery in the following situations:

- A host file already exists.
- You know exactly how many devices are connected to the network.
- You want to create very little network traffic.
- You need to search for devices across remote subnets.

You *should not* use a Specified Addresses discovery in the following situations:

- A host file does not exist.
- You do not know how many devices are connected to the network.
- You need to search through a range of devices by listing only the first and last addresses.








Importing an HP Jetadmin discovery file

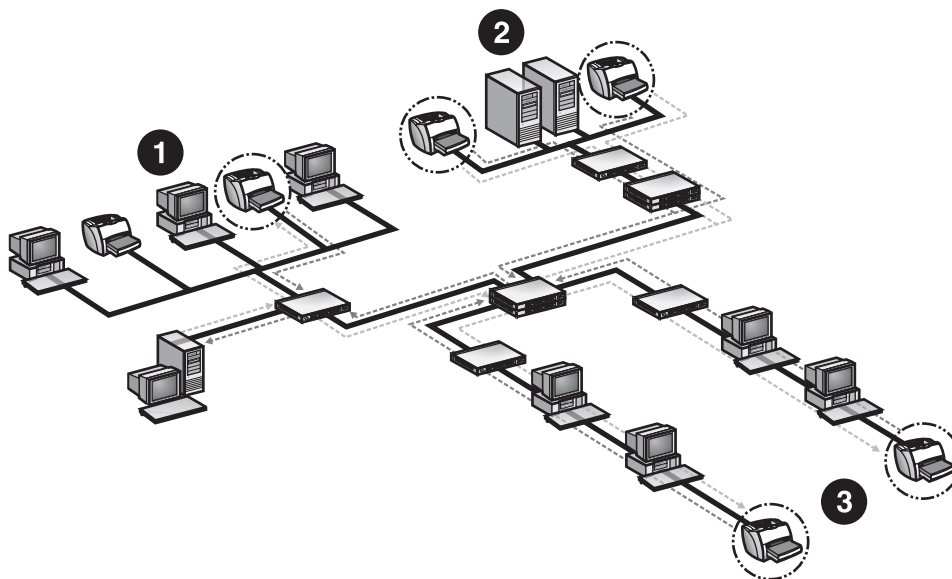
Import an HP Jetadmin discovery file (`jetset.ini`) to HP Web Jetadmin. This process converts the HP Jetadmin discovery file to HP Web Jetadmin format and appends it to the `hosts.txt` file that you are using for HP Web Jetadmin discoveries. This provides backward compatibility with the file-based discovery method that HP Jetadmin uses.

Migrating from the HP Jetadmin database

The Generate Report feature in HP Jetadmin creates a complete device database. Once you create the database in HP Jetadmin, upload the database to HP Web Jetadmin. HP Web Jetadmin appends the HP Jetadmin database to the `hosts.txt` file. Use this process to easily migrate from HP Jetadmin to HP Web Jetadmin.

IP Range discovery

Icon	Description	Icon	Description
	HP Web Jetadmin host machine		Printer
	Discovered devices		Server
	Workstation		Hub
	Router		



1	Subnet A
2	Subnet B
3	Subnet C

An IP Range discovery searches for the devices within a range of IP addresses. IP hostnames are not valid. During an IP Range discovery, HP Web Jetadmin sends a burst of directed SNMP requests to each IP address within the range.



NOTE The IP Range discovery method is not enabled by default.

An IP Range discovery is very accurate and thorough. HP Web Jetadmin can discover devices on local or remote subnets, and you can limit the scope of discovery on the network. However, because an IP Range discovery essentially checks each IP address (which includes IP addresses that are not in use)

to see if a device is there, it can be slow on large networks. In addition, because an IP Range discovery can take so long, your network monitoring software might interpret the discovery process as someone trying to access your network. Consult an IP or network administrator when performing this discovery.



NOTE To use an IP Range discovery in a DHCP/WINS environment, Hewlett-Packard recommends that you use reservations on the HP Jetdirect print servers. This method assigns IP addresses with an infinite lease.

Recommendations for using an IP Range discovery






You *should* use an IP Range discovery in the following situations:

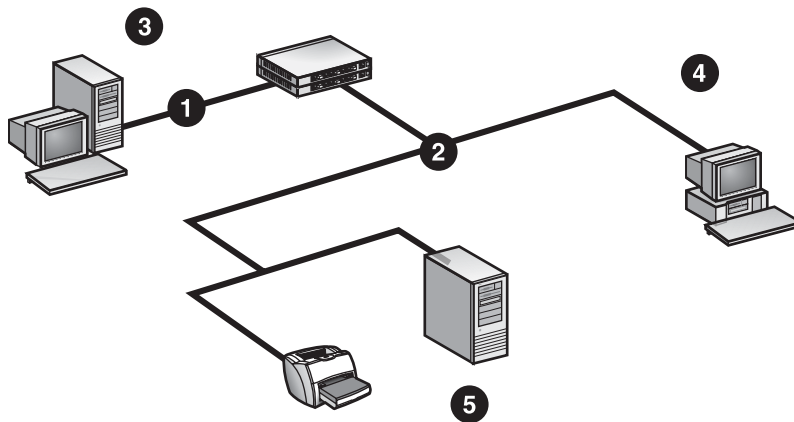
- You need a thorough discovery.
- You need to discover devices across local and remote subnets.
- You need to run a discovery for specific IP ranges on different schedules.
- You want to search through a range of IP addresses.
- You want to limit the scope of discovery on the network.

You *should not* use an IP Range discovery in the following situations:

- You need a fast discovery. An IP Range discovery checks every IP address individually. If the IP range contains many unused addresses, HP Web Jetadmin will check those unused addresses, which takes a long time. However, if a network administrator knows the IP addressing schemes and subnets very well, this discovery can be faster.
- You are using security tools that monitor for unauthorized users, and network administration teams have not been notified about HP Web Jetadmin discovery activity. SNMP subnet queries like those performed by HP Web Jetadmin can cause monitor agents to alert security teams of suspicious activity.

Remote Discovery Agent (RDA) discovery

Icon	Description	Icon	Description
	HP Web Jetadmin host machine		Workstation
	Printer		Router
	Server		



1	Subnet A
2	Subnet B
3	PC or Linux workstation running HP Web Jetadmin host machine
4	PC with RDA proxy service installed
5	HP Jetdirect print server with unconfigured IP address (192.0.0.192)

The Remote Discovery Agent (RDA) discovery method is a proxy service that HP Web Jetadmin uses to discover and configure HP Jetdirect print servers on remote TCP/IP networks. In preparation for an RDA discovery, HP Web Jetadmin pushes a small piece of software onto a host machine on a remote network. You can then configure the discovery methods, configure the advanced options, and schedule discoveries on that remote host machine. HP Web Jetadmin retrieves the information from the RDA discovery on the remote network during its next discovery.

If you try to configure the IP address on an HP Jetdirect print server on that particular remote network, HP Web Jetadmin connects to the remote RDA server and tells it to do the actual IP configuration.

HP Web Jetadmin cannot configure any unconfigured HP Jetdirect print servers that are on remote TCP/IP networks. If the RDA discovery is on the same subnet as the unconfigured HP Jetdirect print servers, HP Web Jetadmin can configure the HP Jetdirect print servers through commands sent to the RDA proxy service.



NOTE The RDA discovery method is not enabled by default.

Use the RDA discovery method to manage network traffic while capturing more complete information about the devices on your network. Since an RDA discovery runs on each subnet instead of from the host machine where you installed HP Web Jetadmin, the discovery traffic on a particular subnet does not compete with the discovery traffic on the other subnets. This means that the discovery on each subnet is more likely to capture device responses without experiencing the collisions and buffer overflows that often occur. The information that HP Web Jetadmin collects from each subnet is more complete.

Recommendations for using an RDA discovery








You *should* use an RDA discovery if the HP Jetdirect print server is across an IP subnet router from HP Web Jetadmin and the IP address has not been configured yet (that is, the IP address is 192.0.0.192).

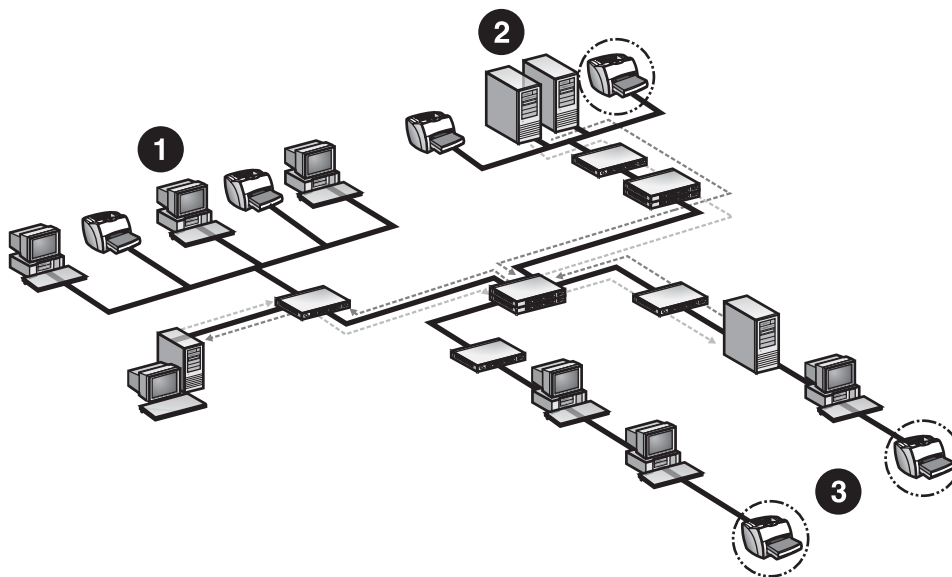
You *should not* use an RDA discovery if the subnet is class B or larger (more than 65,000 nodes per subnet).



NOTE Although an RDA discovery will work if you are routing IPX packets, it is not necessary.

NetWare Bindery discovery

Icon	Description	Icon	Description
	HP Web Jetadmin host machine		Printer
	Discovered devices		Server
	Workstation		Hub
	Router		



1	Subnet A
2	Subnet B
3	Subnet C

By default, HP Jetdirect print servers send out a Service Advertising Protocol (SAP) broadcast every 60 seconds, making their presence known to the servers in an IPX/SPX network environment. Novell NetWare servers receive these broadcasts and store information about the devices that sent them in a dynamic database called a Bindery. A Bindery exists on all versions of Novell NetWare, including Novell NetWare 4.x and 5.x.

During a NetWare Bindery discovery, HP Web Jetadmin sends a query to NetWare servers looking for entries in their binderies that contain information about the HP Jetdirect devices that have sent SAP broadcasts to the servers. HP Web Jetadmin adds or updates the device cache with the device information.



NOTE The NetWare Bindery discovery method is not enabled by default.

A NetWare Bindery discovery is particularly useful in network environments where routers are configured to filter the SAP broadcasts that come from HP Jetdirect print servers. By default, a NetWare Bindery discovery queries all NetWare servers. If there are many servers or servers at remote locations, such an extensive search might take a long time and it might result in redundant information. It might be more efficient to only query specific servers.



NOTE The NetWare Bindery discovery method is only available if the IPX/SPX (NWLink) protocol and Novell NetWare Client are installed. This means that HP Web Jetadmin must be installed on Windows.




Recommendations for using a NetWare Bindery discovery

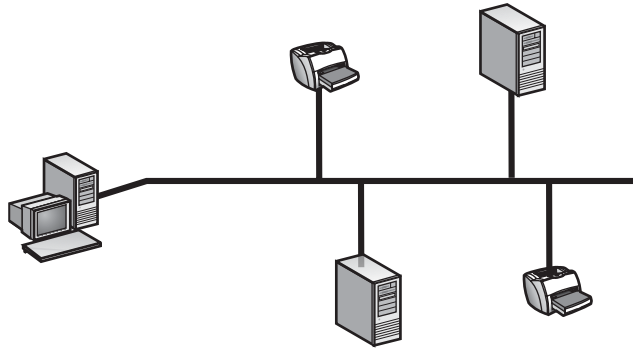
You *should* use a NetWare Bindery discovery in the following situations:

- You need to discover new devices on a network where routers are configured to filter SAP broadcasts.
- You need to discover devices in a Novell NetWare environment where IP addresses are not assigned to HP Jetdirect print servers.

You *should not* use a NetWare Bindery discovery if you need to discover devices in an environment where SAP broadcasts are disabled on HP Jetdirect print servers.

NetWare File Server Login discovery

Icon	Description
	HP Web Jetadmin host machine (running on Windows NT with Novell NetWare Client installed)
	Printer
	Server



A NetWare File Server Login discovery searches for HP Jetdirect print servers that are configured to service a queue on any file server that HP Web Jetadmin is logged onto. This discovery method can find HP Jetdirect print servers that have SAP broadcasts disabled.

File servers require login credentials so that HP Web Jetadmin can log into them to perform the login scan for the HP Jetdirect print servers. If you specify login credentials for multiple file servers, HP Web Jetadmin scans the connection table on each of the file servers and adds the HP Jetdirect print servers to the cache of discovered devices.



NOTE The NetWare File Server Login discovery method is not enabled by default.

A NetWare File Server Login discovery is fast and it generates a low level of network traffic. However, HP Web Jetadmin cannot find unconfigured HP Jetdirect print servers or devices that are configured for Remote Printer mode.

Recommendations for using a NetWare File Server Login discovery



You *should* use a NetWare File Server Login discovery in the following situations:

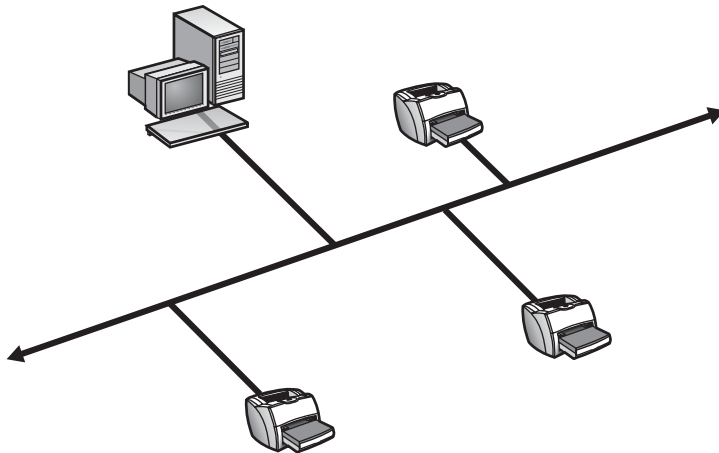
- You have already configured the HP Jetdirect print servers for Novell NetWare and the print servers are operating in QServer mode.
- You have disabled IPX broadcast SAPs on the HP Jetdirect print servers.

You *should not* use a NetWare File Server Login discovery in the following situations:

- You have configured the HP Jetdirect print servers for Remote Printer mode.
- You are trying to discover HP Jetdirect print servers that you have just installed or trying to discover HP Jetdirect print servers that have never been configured for Novell NetWare.

Listen for New Devices discoveries

Icon	Description	Icon	Description
	HP Web Jetadmin host machine		Printer



The Listen for New Devices discovery methods are passive forms of discovery that constantly monitor the network for new devices. Specifically, HP Web Jetadmin listens for the following signals:

- BOOTP requests, which are generated when devices are connected to the network and need to be configured.
- Service Advertising Protocol (SAP) broadcasts, which notify the network that devices are available for access. HP Web Jetadmin only hears SAP broadcasts when it is running on a Windows machine that has the Microsoft IPX/SPX protocol stack installed.
- Service Location Protocol (SLP) broadcasts, which are unsolicited service advertisements by HP Jetdirect print servers that TCP/IP-based multicast packets send.

When HP Web Jetadmin detects one of these signals from a device, it takes exclusive use of the port that the service uses, sends an SNMP request to that device to gather more information, and adds that device to the device cache.



NOTE The Listen for New Devices discovery methods are enabled by default.

The Listen for New Devices discoveries are the least intrusive form of discovery because they take advantage of normally occurring network traffic. The discoveries are meant to complement the more robust discovery methods. However, the results are not as reliable as other discovery methods. If HP Web Jetadmin is running when the new devices are turned on for the first time, it can discover most unconfigured devices. HP Web Jetadmin cannot discover devices that are configured with static IP addresses or have SAP broadcasts disabled. If your network environment is relatively static, you can disable all of the discovery methods except Listen for New Devices after you run the initial discovery.



NOTE The Listen for New Devices discovery methods does not work if HP Web Jetadmin is running on a machine that is also a BOOTP server. The **Listen for New Devices - SAP** option is only available on the **Device Management > Discovery > Properties** page if IPX/SPX is set up on the host machine where HP Web Jetadmin is running.

Recommendations for using the Listen for New Devices discoveries








You *should* use the Listen for New Devices discoveries in the following situations:

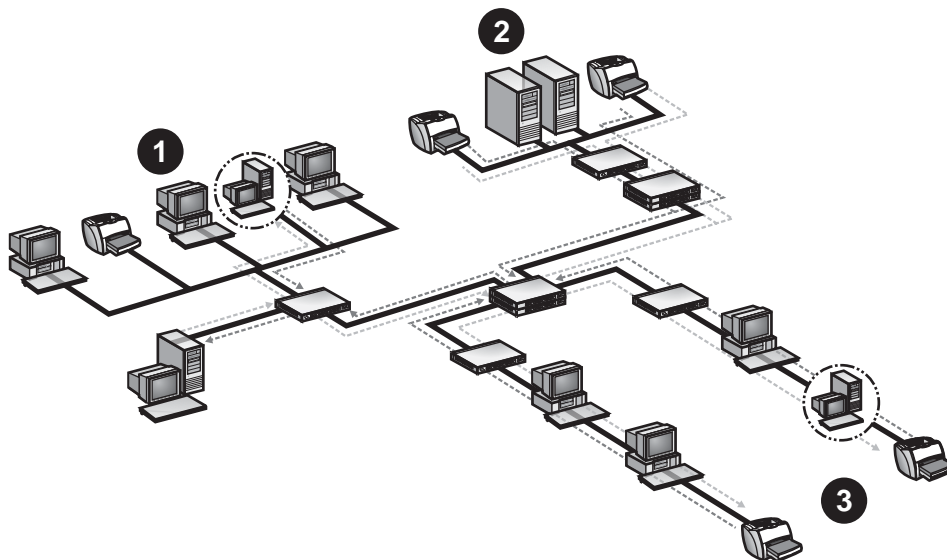
- You want to keep the device cache updated with new devices as they are connected to the network.
- You want a nonintrusive discovery that does not generate any network traffic.
- You want to take advantage of traffic that is already on the network for device searches.

You *should not* use the Listen for New Devices discoveries in the following situations:

- You are not running HP Web Jetadmin all of the time.
- You need to find new devices that do not send out BOOTP requests, SAP broadcasts, or SLP broadcasts.
- You are running HP Web Jetadmin on a machine that is also a BOOTP server.

Other Installations of HP Web Jetadmin discovery

Icon	Description	Icon	Description
	HP Web Jetadmin host machine		Printer
	Discovered HP Web Jetadmin host machine		Server
	Workstation		Hub
	Router		



1	Subnet A
2	Subnet B
3	Subnet C

During an Other Installation of HP Web Jetadmin discovery, HP Web Jetadmin performs one or both of the following discovery methods:



NOTE Both discovery methods can run simultaneously.

- Sends a general SNMP request to all active workstations and servers on a local or remote network.
- Searches a range of IP addresses on the local or remote network.

HP Web Jetadmin listens for responses from workstations and servers on the network. After the discovery is finished, go to the **Device Management > Tools > Web Jetadmin Servers** page to view a list of other HP Web Jetadmin host machines (servers). The list includes the IP hostname, the IP address, the HP Web Jetadmin version, and the operating system of all HP Web Jetadmin host machines. The network administrator can verify that all HP Web Jetadmin host machines on the network are necessary and secure.



NOTE You can share information between each of the HP Web Jetadmin host machines. See [Synchronized HP Web Jetadmin host machines](#) for more information.

Sending a general SNMP request across the network is very fast, but causes a high spike in network traffic because all workstations and servers respond at the same time. Because so many responses are sent at once, some responses could collide and never reach HP Web Jetadmin or the buffer could overflow. These collisions and buffer overflows can affect the accuracy of the information.

Searching a range of IP addresses is very accurate and thorough. HP Web Jetadmin can discover workstations and servers on local or remote subnets, and you can limit the scope of discovery on the network. However, because an IP Range discovery essentially checks each IP address to see if the workstation or server is an HP Web Jetadmin host machine, it can be very slow on large networks. In addition, because an IP Range discovery takes longer, your network monitoring software might interpret the discovery process as an unauthorized user trying to access your network.



NOTE The Other installations of HP Web Jetadmin discovery method is not enabled by default.

Recommendations for using the Other Installations of HP Web Jetadmin SNMP IP Broadcast discovery

You *should* use the SNMP IP Broadcast discoveries in the following situations:

- You want a fast search.
- You need to search a fairly small network with relatively few workstations and servers.
- You plan to schedule discoveries to run when they will not have a negative impact on other network activity.
- You need to search a single subnet.

You *should not* use the SNMP IP Broadcast discoveries in the following situations:

- You need to search a large network with many workstations and servers in each broadcast domain, which increases the possibility of response collisions.
- You need a very accurate discovery. HP Web Jetadmin might miss some responses because of collisions.
- You are running a switched environment and the switches do not handle broadcasts well. Schedule the SNMP IP Broadcast discoveries to run at night or do not use them at all.

Recommendations for using the Other Installations of HP Web Jetadmin IP Range discovery

You *should* use an IP Range discovery in the following situations:

- You need a thorough discovery.
- You need to discover workstations and servers across local and remote subnets.
- You want to search through a range of IP addresses.
- You want to limit the scope of discovery on the network.

You *should not* use an IP Range discovery in the following situations:

- You need a fast discovery. An IP Range discovery must check every IP address individually, although some are checked at the same time.
- You are using security tools that monitor for unauthorized users.

16 Managing discoveries

This section covers the following topics:

- [Advanced discovery options](#)
- [Starting a background discovery](#)
- [Scheduling discoveries](#)

Advanced discovery options

There are several additional options that affect many of the discovery methods: the network communications timeout value, the SNMP Community Names, and the proactive cache level.

Network communication timeout

All HP Web Jetadmin discovery methods send a query to each discovered device. HP Web Jetadmin normally waits 1 second for a reply from a discovered device. If your network is very large, you might need to increase the timeout value so that HP Web Jetadmin can accurately and consistently find all devices. The recommended range for the timeout value is from 1 to 10 seconds.

Community Names

Many of the HP Web Jetadmin discovery methods use SNMP. SNMP agents have a Community Name associated with them. If you have devices that do not use public as the Community Name or if you have changed the default Community Names, you might need to change the Community Names in HP Web Jetadmin to match.

The most common reason for changing the Community Names is if you have new HP Jetdirect print servers that support a modifiable Set Community Name. If you use a software application other than HP Web Jetadmin to change the Community Names and you want HP Web Jetadmin to automatically discover the changes, you must change the Community Names in HP Web Jetadmin.



NOTE The Community Name settings are not typically used.

Proactive cache level

HP Web Jetadmin stores the information from device queries on the host machine where you installed HP Web Jetadmin. This means that when you view a device, HP Web Jetadmin can retrieve the information from the host machine instead of sending a query to the device. The more information that HP Web Jetadmin gathers during queries, the less time it takes HP Web Jetadmin to display device information.

Use the **Proactive Cache Level** option to control how much information HP Web Jetadmin gathers when you view a device. The following are the levels of information that HP Web Jetadmin gathers during a device query:

- **None** – When you view a device, HP Web Jetadmin always queries the device for information.
- **All** – When you click the refresh icon on the **Device Status** page, HP Web Jetadmin queries the device for all of the information that HP Web Jetadmin is capable of displaying.
- **Low, Medium, or High** – When you view a device, HP Web Jetadmin queries the device for various levels of information. For example, if you select the **Low** option, HP Web Jetadmin only queries a minimal set of information on the host machine. If you select the **High** option, HP Web Jetadmin queries advanced information, such as consumables status, on the host machine.

Starting a background discovery

Start a discovery to run in the background whenever you want to refresh the cache of devices on the network. Before you run a discovery, you must specify which discovery methods you want to use on the **Device Management > Discovery > Properties** page. Once you specify the discovery methods, start the discovery from the **Properties** page.



NOTE If a discovery is in progress, **Start** on the **Properties** page changes to **Stop**.

Scheduling discoveries

After you enable and configure the discovery methods that you want to run, you can schedule discoveries to run automatically. Schedule discoveries to run as frequently as once a day or as seldom as once a year. Schedule discoveries to run at times, such as at night, when discovery traffic is least likely to have a negative impact on network performance and device cache accuracy. You do not need to be on site when scheduled discoveries run.

You can also schedule multiple, distinct discoveries to occur, by editing discovery schedules. You can decide which discovery method and discovery method settings run for each schedule that appears in the drop-down list. For example, if you want HP Web Jetadmin to search a specific range of IP addresses in the morning and then search another specific range of IP addresses in the afternoon, select the morning schedule, select the **IP Range** discovery method, and then click the **IP Range** arrow link to specify the IP ranges on the page that HP Web Jetadmin displays. Repeat the process for the afternoon schedule. For the morning scheduled discovery, HP Web Jetadmin runs a discovery for the IP addresses specified for the morning schedule. For the afternoon scheduled discovery, HP Web Jetadmin runs a discovery for the IP addresses specified for the afternoon schedule.



NOTE Hewlett-Packard recommends that you run discoveries during off hours if possible. However, you must schedule discoveries to run when the devices are turned on. HP Web Jetadmin will discover devices that are in Power Save mode.

Before you schedule a discovery, you must specify which discovery methods you want to use on the **Device Management > Discovery > Properties** page. Once you specify the discovery methods, specify the schedule on the **Device Management > Discovery > Schedule** page.

Section 6

Print queues

This section contains the following:

[Chapter 17, Managing print queues](#)

[Chapter 18, Managing Novell print queues](#)

17 Managing print queues

This section covers the following topics:

- [Print Queues overview](#)
- [Planning the printing environment](#)
- [Creating print queues](#)
- [Deleting print queues](#)
- [Installing the software](#)
- [Removing the software](#)

Print Queues overview

The primary goal of printer management is to provide simple printing services to users in an efficient manner. Print queues are the most important building block you can use when constructing the printing environment.

A print queue is a central resource on a host machine that holds print jobs until a printer is available. Typically, multiple clients send print jobs to a central print queue. Software running on the host machine where the print queue resides monitors the printer. When a printer becomes available, the software sends the next print job in the print queue to the printer. On a Windows host machine, this software is the HP Standard TCP/IP Port Monitor. On a Linux host machine, this software is the line printer daemon (lpd).

With HP Web Jetadmin, you can create print queues remotely from any location where you can access your intranet. Users do not have to create print queues themselves. HP Web Jetadmin is the only Web-based management tool that provides a print queue creation feature.



NOTE Although HP Web Jetadmin supports any third-party printer that is Standard Printer MIB-compliant and is not connected through an HP Jetdirect print server, you must use the third-party vendor tools to create print queues. See the vendor documentation for instructions and requirements.

The print queue creation feature also helps you accomplish the following tasks:

- create print queues on specific host machines
- assign printers to service the print queues
- install software on the host machine for managing the print queues and print jobs
- create a port that associates the logical port name with the network printer
- configure a printer IP address, if one is not already assigned
- install printer drivers on the host machine, if necessary



NOTE In many respects, creating print queues in the Windows and UNIX/Linux operating systems are similar. The differences are identified throughout the discussion of print queues.

NOTE If you are creating print queues in a small network environment, you can use a smaller, less expensive machine as the host machine. As your network grows, you can upgrade to a larger, server class host machine to gain more power.

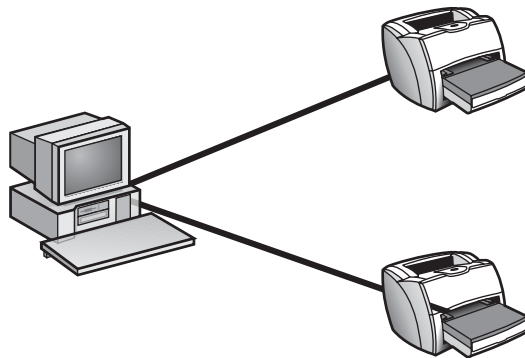
Planning the printing environment

When implementing print queues, it is very important to do some initial planning so that, as your network grows, the print queues can easily accommodate the new printers. If you set up print queues in a structured manner, the host machine manages which printer a print job goes to. If not, end users might have to try different printers to find an available one.

The following sections describe different options for setting up the printing environment.

Direct printing

Icon	Description	Icon	Description
	Workstation		Printer



The simplest printing environment to set up is direct printing. Direct printing occurs when a client machine is connected directly to the printer. To set up direct printing for a network printer, you must create a new TCP/IP port on the client machine. See the documentation for the operating system that is running on the client machine for more information. You can have any number of client machines connected to a single printer.

In a small environment, direct printing can be an effective solution. However, it has the following disadvantages:

- You must install the software for creating print jobs (printer drivers, print filters, or model scripts) on each client machine. When new software becomes available, you must go to each client machine and install the new software. If you have many client machines printing to the printer, updating the software on each client machine could be time consuming.
- It is more difficult to manage the volume of print jobs on the printer. When a printer can no longer handle the volume and you add a new printer to the network, you must go to some of the client machines and manually redirect each of those machines to the new printer.

Shared printing

Overcome the disadvantages of a direct printing environment by centralizing print services in a shared printing environment. Shared printing occurs when many clients send print jobs to a central print queue.

A shared printing environment provides the following advantages:




- You can install the software for creating print jobs (print drivers, print filters, or model scripts) on the host machine where the print queue resides. When new software becomes available, you only have to install the new software on the host machine.
- It is easier to manage the volume of print jobs on the printers because the printing services are centralized. When you add a new printer to the network, you only have to redirect a print queue to the new printer; you do not have to manually redirect each client machine.

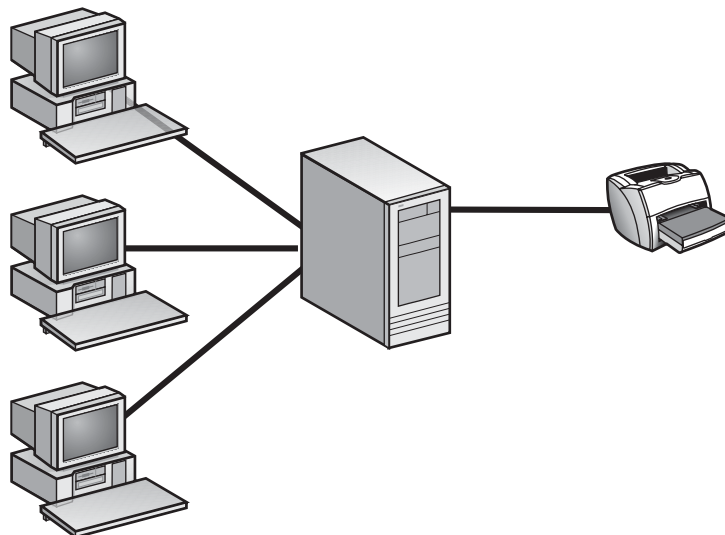
You can set up a shared printing environment in several ways. The following sections describe a few of these shared printing environments and show how planning for print queues can accommodate network growth.



NOTE If you are creating print queues in a small network environment, use a smaller, less expensive machine as the host machine. As the network grows, you can upgrade to a larger, server class host machine to gain more power.




Single print queue

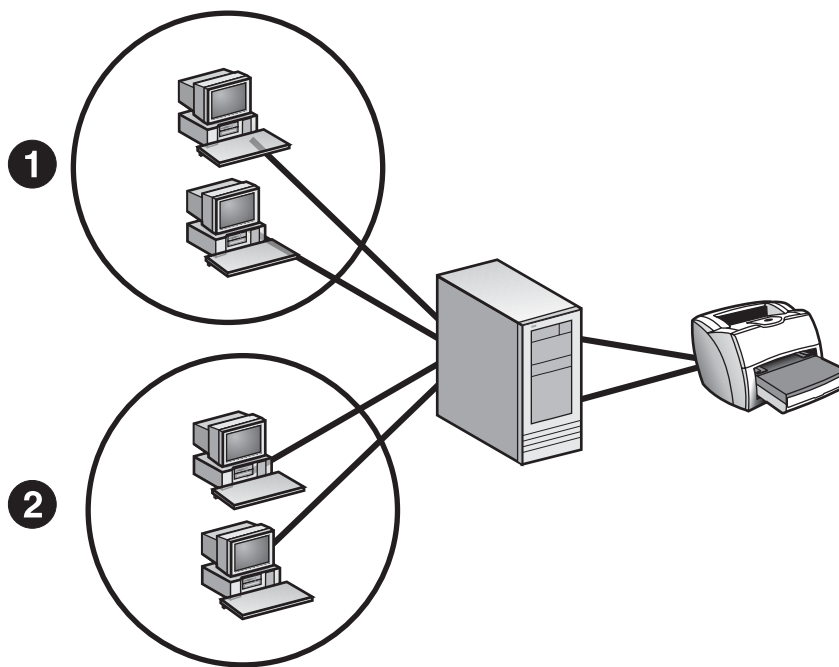
Icon	Description	Icon	Description
	Host machine with Queue 1		Printer
	Workstation		



One option is to create a single print queue and direct all clients on the network to this print queue. In this shared printing environment, there are multiple clients, one print queue on a host machine, and one printer. The clients send all of their print jobs to the same print queue. The print queue stores the print jobs and sends them to the printer as it becomes available.

Multiple print queues

Icon	Description	Icon	Description
	Host machine with Queue 1 and Queue 2		Workstation
	Printer		






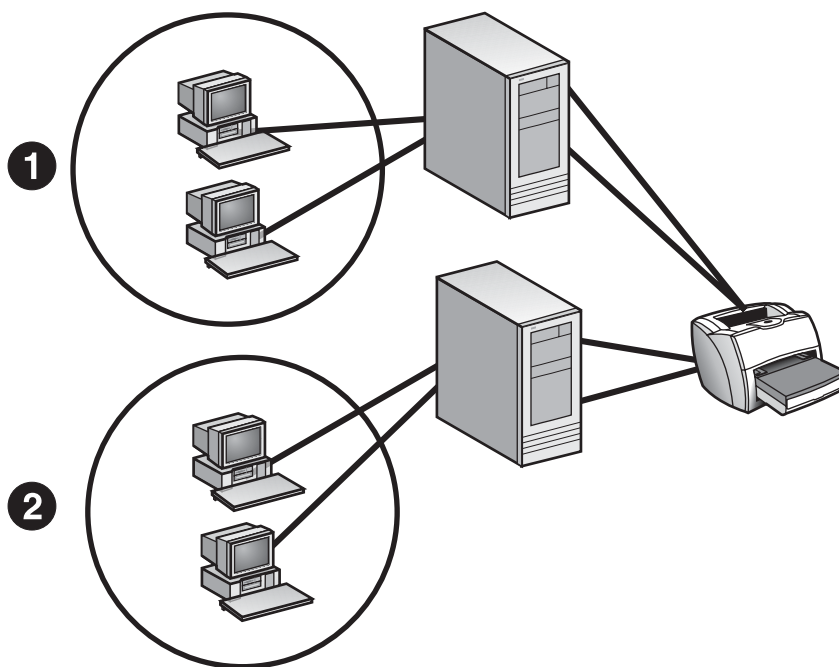
1	Group 1 of workstations
2	Group 2 of workstations

A more flexible approach is to create one print queue for each group of clients. For example, you could group your clients by department. You can initially configure each print queue to send its print jobs to the same printer.

As the network continues to grow and you add more clients, you might need to add additional printers to accommodate the increase in print jobs. Since you had previously grouped clients and created a separate print queue on the host machine for each group, adding new printers is relatively easy. All you need to do is redirect a print queue to the new printer; you do not have to make any changes on the client machines.

Multiple host machines

Icon	Description	Icon	Description
	Host machine with Queue 1 and Queue 2		Workstation
	Printer		



1	Group 1 of workstations
2	Group 2 of workstations

If you have a large network that needs to manage a heavy volume of print queues, clients, and printers, you may want to use multiple host machines. Each host machine can have multiple print queues servicing multiple clients and printers. Use HP Web Jetadmin to specify the host machine where you want to create the print queue and the printers that you want to associate with the new print queue.



NOTE HP Web Jetadmin pushes the print queue management software onto the host machine if the software is not already installed.

Creating print queues

Once you have planned the printing environment, use HP Web Jetadmin to create print queues.

HP Web Jetadmin works very well in mixed environments. If you are running HP Web Jetadmin on a supported Linux machine, you can create a print queue on any of the other supported UNIX/Linux platforms. If you are running HP Web Jetadmin on a Windows machine, you can create a print queue on any other supported Windows machine, as well as NetWare environments. This chapter discusses print queue creation for Windows and UNIX/Linux. See [Chapter 18, Managing Novell print queues](#) for more information about creating print queues in NetWare environments.

A print queue consists of the following items:

- A printer to service the print queue and a computer to host the print queue.
- Software to manage the print queue. Each operating system where you create print queues requires different software. During the process of creating print queues, HP Web Jetadmin automatically installs the appropriate software for the operating system on the host machine if it is not already installed.
- Software that users need to create print jobs. Windows clients use printer drivers to create print jobs. Linux clients use print filters.
- A name for the print queue. Windows also requires a share name and a port name. For print queues on Linux host machines, you can also specify a class name and designate a print queue as the default.

The following sections describe each of these items in detail.

Selecting the printers and host machines

The first step in creating print queues is specifying which printers are used with the new print queues and which host machines the print queues reside on. You can only work with one printer model at a time, but you can select any number of printers within that printer model. Create print queues for the same printers on Windows, Linux, and any other device capable of hosting print queues, such as a print server appliance.

Installing the software for managing the print queues

At this point in the process, HP Web Jetadmin checks each host machine to make sure that the appropriate software is installed for that operating system. If the appropriate software is not installed, HP Web Jetadmin automatically installs it. If you are creating print queues for the first time on many different host machines, this process might take quite awhile to complete. To streamline this process, install the appropriate software on the host machines before you start creating the print queues. [Installing the software](#) for more information.

Specifying the software for creating print jobs

The second step in creating print queues is specifying the operating system-specific software that the users need to create print jobs.

Windows printer drivers

For Windows systems, you must specify the printer driver that the host machine uses to communicate with the printer.

By default, the shared printer is available to all Windows users after you create the print queue. The HP Web Jetadmin Point and Print feature automatically downloads the printer driver to any Windows client machine that accesses the shared printer. However, not all printer drivers support Point and Print. For some printer drivers, a newer version supports Point and Print. For example, version 1.0 of the printer driver for the HP 2000C does not support Point and Print, but version 2.0 does.

Linux print filters

For Linux systems, HP Web Jetadmin makes entries in the `/etc/printcap` file and adds the correct directories to the Linux print system. HP Web Jetadmin for Linux uses the Red Hat print filters. Most default Red Hat installations already contain the print filters. If your installation does not, install them using the `rhs-printfilters` RPM. For SuSE Linux systems, HP Web Jetadmin installs these print filters automatically.

Specifying the print queue names, share names, and port names

The third step in creating print queues is to specify the names used to identify the print queues. For Windows host machines, you must specify a share name, queue name, and port name. For Linux host machines, you must specify a queue name.



NOTE For Linux host machines, you can also assign print queues to a class and assign a name to that class. Users send their print jobs to a class, and the host machine directs the print jobs to one of the print queues in that class. You can also designate the print queue as the default.

HP Web Jetadmin initially provides default values for these names. Accept the defaults or assign your own names. If you assign your own names, consider developing a standard for each type of name that will continue to work well as the network grows. The following are some examples of things to consider:

- If you use the IP address as the port name, remember that the IP address might change in a DHCP environment.
- If you assign share names that are longer than 8 characters, some MS-DOS workstations might not be able to access those print queues.

Verifying the print queues

The last step in creating print queues is to make sure that the print queues are set up correctly.

The **Results** page that HP Web Jetadmin displays at the end of the process contains a **Print Test Page** button. When you click **Print Test Page**, HP Web Jetadmin sends a test page to that printer. If the test page prints, you know that the print queue is set up correctly.

Deleting print queues

Use the **Print Queue Management > Print Queues > Delete Queue** page to remove a print queue from a host machine. Clients can no longer send print jobs to that print queue. You must redirect all of the clients that are currently using that print queue to another print queue.

Installing the software

To support print queue creation, HP Web Jetadmin must remotely install software on the host machines where the print queues reside. HP Web Jetadmin does this automatically during the print queue creation process. If you are creating print queues for the first time on many different host machines, this process might take quite awhile to complete. To streamline the process, use the **Print Queue Management > Print Server Software Management > Install Software** page to install the software before you start creating print queues.



NOTE To install the software on a Windows host machine, you must have Admin rights. To install the software on a Linux host machine, you must have root access.

HP Web Jetadmin always contains the print queue creation software for the operating system you installed it on. For example, if you install HP Web Jetadmin on a Windows machine, the software required to create print queues on Windows is automatically installed. If you want to create print queues on other platforms, you must install additional software. Use the HP Web Jetadmin Intelligent Update feature to download this additional software from the HP Web site and install it. You can also use the Intelligent Update feature to download and install newer versions of the print queue creation software. See [Intelligent Update](#) for more information.

Removing the software

Use the **Print Queue Management > Print Server Software Management > Remove Software** page to remove the print queue creation software from the host machines where you have installed it.

If you remove the software from a Windows or Linux host machine, the print queues on that host machine continue to work.

18 Managing Novell print queues

This section covers the following topics:

- [Novell print queues overview](#)
- [Bindery and NetWare Directory Services connections](#)
- [Requirements for Novell configuration](#)
- [NDS context](#)
- [NDS tree name](#)
- [NetWare print server and printer objects](#)

Novell print queues overview

If you plan to use HP Web Jetadmin in a Novell NetWare environment to configure Bindery or NDS print queues, make sure that you install Novell NetWare Client. Microsoft NetWare client is not compatible. You will get an error message if you use HP Web Jetadmin to configure NetWare printing when Novell NetWare Client is not installed. See the readme file for a list of the versions of Novell NetWare Client that HP Web Jetadmin supports.

Bindery and NetWare Directory Services connections

You can configure two types of connections for Novell NetWare queue-based print services: Bindery and NetWare Directory Services (NDS) connections. You can configure both Bindery and NDS connections in a NetWare 4.x, 5.x, or 6.x environment.

NDS eliminates the redundant administration that Bindery connections require. In a NetWare 4.x, 5.x, or 6.x environment, users and resources are stored in a database that is shared and distributed among all of the file servers defined in the same NDS tree. This means that a single network login is required to access resources. You can configure resource access and security once and apply it to all of the file servers that belong to the same tree.

While HP Jetdirect print servers can support up to 16 connections at the same time, they only provide NDS print services in one NDS tree at a time. However, they can maintain Bindery connections to other file servers that are in other NDS trees. HP Jetdirect print servers can service a total of 64 queues on up to 16 file servers.

The naming convention for NDS is much broader than for Bindery services. NDS names can be up to 64 characters in length and can contain special characters. Bindery object names can be up to 47 characters in length and cannot contain special characters.

The configuration processes for Bindery and NDS connections are very similar. If you are familiar with using HP Web Jetadmin to configure NDS print services, configuring Bindery print services is very straightforward.

Requirements for Novell configuration

Use HP Web Jetadmin to configure HP Jetdirect print servers to provide support for Novell print services. You must have a Windows server or workstation to run HP Web Jetadmin in this environment. This assumes that you are running HP Web Jetadmin on a Windows machine that has the IPX/SPX protocol and the latest Novell NetWare Client software installed. HP Web Jetadmin creates the necessary NetWare print objects during the NDS configuration of the HP Jetdirect print server.



NOTE Using Microsoft Client Service for NetWare, Gateway, and Client Services instead of Novell NetWare Client will not work. Novell NetWare Client is required to create a print queue, but it is not required if you are only using HP Web Jetadmin to manage HP Jetdirect print servers that you used HP Jetadmin or NDPS to configure.

The following information is required for both the Bindery and NDS configurations:

- NDS tree name
- NetWare user name and password
- NetWare user context
- Authentication file server
- Print server name
- Print server context
- Print queue name (existing print queue or new)
- File server volume where the print queue is placed



NOTE It is very important that you specify the correct information. If the Novell environment has multiple trees and you select the NDS tree from the drop-down list, make sure that you select the correct tree.

The NetWare user must have an account with the proper NetWare NDS rights to create the NetWare print objects in the NetWare 4.x, 5.x, or 6.x environment. You must also know the context of this user account for an NDS configuration.

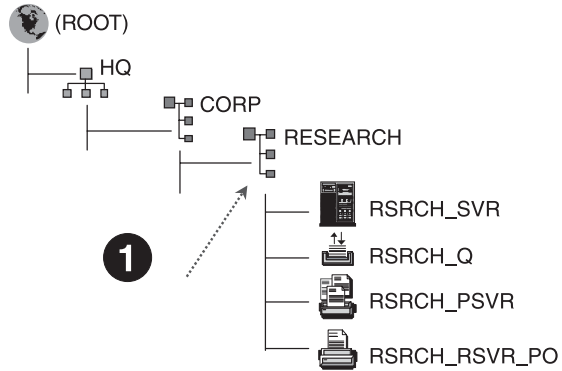
Assign the print server name during the NDS configuration. Use any name that complies with NetWare naming standards. Make sure that the name you assign is unique for the specified context because two NDS objects cannot have the same name in the same context. This is true even if they are different types of objects.

Select the context for the print server during the NDS configuration. This is where you create the print server and printer objects. The NetWare account that you specify at the beginning of the NDS configuration must have NDS create rights for the print server context.

Use an existing print queue or you can create a new print queue during an NDS configuration. If you use HP Web Jetadmin to create a new print queue, you can specify the context where the print queue is created.

You must also specify the file server volume name that is used as the queue volume. The default volume is SYS, but it can be any NetWare volume. Print jobs are spooled on this volume.

NDS context



1

Print server context is .Research.Corp.Hq (or .OU=Research.OU=Corp.O=Hq)

The NetWare print server object context is the place in the NDS tree where the print server object is located. The container where the print server object resides is listed first, followed by each container leading to the root of the tree. The container names are separated by a period. For example, Research.Corp.Hq means that the print server objects are in a container called Research, which is under a container called Corp, which is under a container called Hq. List this context in any of the following ways:

- Research.Corp.Hq
- .Research.Corp.Hq
- .OU=Research.OU=Corp.O=Hq

NDS tree name

In a NetWare NDS configuration, select the correct NDS tree name from a drop-down list. Because NDS advertises the tree names with SAP broadcasts, HP Web Jetadmin can discover the tree name.

NetWare print server and printer objects

The NDS context is the location where you create the objects. The print server object name is the same as the name specified in HP Web Jetadmin. The printer object name is the print server name, an underscore, and the letters PO if another utility has not already assigned a printer object to the print server object. This allows for printer object names other than the HP default of <printservername>_PO. Use HP Web Jetadmin to create the print queue object or you can use an existing print queue. You can also use HP Web Jetadmin to delete print queue objects when you no longer need them.

Because a Bindery is a flat-file database, the concept of context does not exist. In addition, the print server object is created during a Bindery configuration and the print queue is a property of the print server in the Bindery. Use HP Web Jetadmin to create the print queue object or you can use an existing print queue. You can also use HP Web Jetadmin to delete print queue objects.

Section 7

Security overview

This section contains the following:

[Chapter 19, Network security](#)

[Chapter 20, Profile security](#)

[Chapter 21, Device security](#)

19 Network security

This section covers the following topics:

- [Network security overview](#)
- [HTTP and HTTPS](#)
- [Allow list](#)
- [SSL/TLS](#)

Network security overview

The HP Web Jetadmin server must be kept physically secure and be password-protected. Also, use a firewall as the first form of security to prevent unauthorized Internet users from browsing to any Web server within your intranet, including HP Web Jetadmin. The following sections describe the additional features that HP Web Jetadmin provides for securing the network.

HTTP and HTTPS

By default, HP Web Jetadmin uses HTTPS. The default HTTPS port number is 8443. HTTPS enforces the SSL/TLS protocol for transferring data securely across the Internet or intranet. If you choose not to enforce the SSL/TLS protocol, you can use either HTTP or HTTPS. However, if the SSL/TLS protocol is enforced, you can only use HTTPS.



NOTE If the SSL/TLS protocol is enabled and a user types the HTTP port number in the Web browser address bar, the HP Web Jetadmin URL automatically changes to the HTTPS port number.

While HTTP is less secure than HTTPS, you can use HTTP for users who cannot access HP Web Jetadmin using HTTPS. HP Web Jetadmin communicates on HTTP port 8000 by default. A Web browser must request HTTP port 8000 to open HP Web Jetadmin. This prevents HP Web Jetadmin from conflicting with another Web service on the host machine that may be using the same port.



NOTE Do not use the HTTPS port number for the HTTP Web address. For example, if you type `http://server name:HTTPS port number` in the Web browser address bar, the page will not load.

If you want to change the default HTTP port number, go to the **General Settings > HTTP (Web)** page. If you change the port number to 80, HP Web Jetadmin becomes the default Web service and can be accessed by anyone navigating to that server without specifying a port number. This will override any other Web content being delivered by that server through port 80.

Allow list

Create an allow list that defines which IP addresses can access HP Web Jetadmin. Deny access for all IP addresses and then allow a select few IP addresses to access HP Web Jetadmin, or allow all IP addresses to access HP Web Jetadmin and then deny access for a select few IP addresses.

The following sections on the **General Settings > HTTP (Web)** page define the allow list:

- **Order for HP Web Jetadmin Access** – This section specifies what order HP Web Jetadmin processes the IP addresses specified in the **Allow HP Web Jetadmin Access** and **Deny HP Web Jetadmin Access** sections.
- **Allow HP Web Jetadmin Access** – This section specifies the IP addresses that can access HP Web Jetadmin.
- **Deny HP Web Jetadmin Access** – This section specifies the IP addresses that cannot access HP Web Jetadmin.

See [Allow list](#) for more information.



NOTE You cannot deny access to the HP Web Jetadmin host machine.

SSL/TLS

HP Web Jetadmin is a Web-based application, which means that all communications with HP Web Jetadmin are subject to capture as the information moves between the HP Web Jetadmin host machine and the Web browser (client). HP Web Jetadmin uses Secure Sockets Layer/Transport Layer Security (SSL/TLS) protocol by default to limit this threat. If you enforce SSL/TLS, all communications between the HP Web Jetadmin host machine and a Web browser are sent encrypted using HTTPS.



NOTE Do not use the HTTPS scheme with the HTTP port number. For example, in the Web browser address bar, if you type `https://server name:HTTP port number`, the page will not load.

When a Web browser connects to the HP Web Jetadmin host machine using SSL/TLS, HP Web Jetadmin uses the default HTTPS port 8443. You can change the port. The default port for Web browsers is 443. If you want to allow HTTPS connections without requiring that the Web browsers specify a port number, set the port to 443.

Specify the encryption level that HP Web Jetadmin uses. If a Web browser does not support the specified encryption level, HP Web Jetadmin does not allow the Web browser to connect to the product. HP Web Jetadmin supports the following encryption levels:

- **Low (DES-56-bit, RC4-40-bit)** – This encryption level provides simple encryption. Some circumstances require simple encryption. For example, some versions of Internet Explorer are not capable of 128-bit encryption, which is required for the medium and high encryption levels.
- **Medium (RC4-128-bit)** – This encryption level provides 128-bit encryption. If you specify this encryption level, any Web browser that tries to access HP Web Jetadmin must support 128-bit encryption.
- **High (3DES-168-bit only)** – This encryption level provides 168-bit encryption, which is the most secure. However, if you specify this encryption level, the load on the HP Web Jetadmin host machine, the network, and the Web browsers increases, which means that the process is slower.

SSL/TLS uses a certificate in the encryption process. Web browsers use the HP Web Jetadmin certificate to authenticate the identity of the HP Web Jetadmin host machine.

HP Web Jetadmin can use a certificate that has been created and signed by a Certificate Authority (CA). A CA-signed certificate is intended to reassure users that they are using the correct host machine. If the host machine IP address, name, or validity date does not match the CA-signed certificate, the Web browser warns the user of the differences.

You can also create a self-signed certificate in HP Web Jetadmin. A self-signed certificate provides the same encryption level as a CA-signed certificate. However, a self-signed certificate does not authenticate the certificate owner. Web browsers do not trust self-signed certificates; Web browsers only trust certificates signed by a root CA. If the host machine IP address, name, or validity date does not match the self-signed certificate, the Web browser warns the user that the certificate was not signed by a known CA and that there is no way to verify the information provided.

20 Profile security

This section covers the following topics:

- [Profile security overview](#)
- [Authentication methods](#)
- [Profile settings](#)

Profile security overview

Profiles are a form of security that prevents unauthorized users from accessing HP Web Jetadmin. Use profiles to control which HP Web Jetadmin features are available for various classes of users.

By default, HP Web Jetadmin provides the Admin profile. The Admin profile has full access to HP Web Jetadmin. While logged into the Admin profile, you can view and configure all HP Web Jetadmin settings. During the HP Web Jetadmin installation process, a password is assigned to prevent unauthorized access. See [Profile passwords](#) for more information.

In addition to the Admin profile, you can create an unlimited number of profiles for various classes of users. For example, you might want to create a Support profile that can access the alerts, but cannot change any HP Web Jetadmin settings.

Authentication methods

HP Web Jetadmin uses one of the following methods to authenticate users when they log in:

- Profiles and passwords - Create profiles and assign passwords to them. HP Web Jetadmin prompts users for the profile password when they log in.
- Windows NT domain users and groups - Associate Windows NT domain users and groups with profiles. HP Web Jetadmin prompts users for their Windows NT domain user name and password when they log in. You can associate more than one Windows NT domain user or group with each profile. However, each Windows NT domain user or group can be associated with only one profile.

The Windows NT domain authentication method simplifies the following tasks:

- User account administration - You do not need to maintain a profile for each user or manage profile passwords.
- Login procedure for users - Users do not need to learn a new profile password. They can log into HP Web Jetadmin using their Windows NT domain user name and password.

HP Web Jetadmin stores user credentials and can pass that information to other machines when the user requires remote authentication. For example, when a user creates a print queue on a Windows NT host machine, HP Web Jetadmin tries to authenticate the user with the Windows NT domain information that the user supplied during login.

Profile settings



NOTE You can only view the **General Settings > Profiles Administration > Permissions** pages if you access HP Web Jetadmin using the Admin profile. You must also have another profile, such as a User profile, set up on the HP Web Jetadmin host machine.

Use the **General Settings > Profiles Administration > Permissions > Device Editing Modes** page to specify the following editing capabilities for a profile:

- **Allow Print Queue Creation** - This option specifies if the profile can create print queues.
- **Allow Device Group Editing** - This option specifies if the profile can change existing device groups and create new device groups.
- **Allow Device Configuration** - This option specifies if the profile can change device configuration options. Allow the profile to edit the configuration options for all of the devices in the device cache or edit only the devices in specific device groups. If you allow a profile to edit the device configuration options, you can limit the profile to specific types of configuration options, such as device or accessory options.



NOTE You cannot disable the editing capabilities for the Admin profile.

By enabling or disabling a combination of the editing capabilities, you can tailor a profile according to the needs of that particular class of users. For example, you might want to create a Help Desk profile that can edit device groups and devices, but cannot edit HP Web Jetadmin configuration settings or create print queues.

In addition, you can use the **General Settings > Profiles Administration > Permissions > Disable Pages** page to specify which features appear in the **Navigation** area and content toolbar for a profile. The options on the **Disable Pages** page provide a greater level of control than the editing capabilities.

See [Chapter 10, Configuring profiles](#) for more information about profiles.

21 Device security

This section covers the following topics:

- [Device security overview](#)
- [Device passwords](#)
- [Set Community Name](#)
- [SNMP](#)
- [Unused protocols](#)
- [Administrator passwords](#)
- [Printer control panel](#)
- [Device embedded Web server](#)
- [Access control list](#)
- [Network security for a device](#)
- [Storage management for devices](#)
- [Credential storage](#)

Device security overview

Although HP Web Jetadmin provides several methods for securing itself against unwanted access, preventing individuals from downloading HP Web Jetadmin from the Web and using it to install and configure devices can be a challenge. Users can access and configure a device with a variety of utilities, including the following:

- HP Web Jetadmin
- HP Install Network Printer Wizard
- Telnet
- Embedded Web server
- SNMP utilities
- HP Printer Gateway for NDPS

Given all of these available utilities, setting security at the device level is the most effective method of preventing unauthorized users from accessing devices. HP Web Jetadmin provides several security methods that you can enable on the device to address these utilities.



NOTE Hewlett-Packard periodically revises or enhances the HP Jetdirect firmware to proactively address performance and security issues. You should always keep the HP Jetdirect firmware updated with the latest revisions to ensure maximum security. Use the HP Web Jetadmin Intelligent Update feature to update HP Jetdirect firmware.

Device passwords

By default, HP Web Jetadmin does not assign passwords to devices; you must assign them. You can use the multiple device configuration feature to assign a password to more than one device at the same time. After you assign passwords, HP Web Jetadmin prompts users for the password before saving any changes that they make to device configuration options.

If you want to delegate routine maintenance and administrative tasks for particular devices, assign passwords so that authorized users can access the devices without compromising overall network security. For example, you might want to authorize someone in each department or area of a building to oversee the devices there. That person could check the status of the devices in a device group, add new devices, or change existing devices as needed without your help. Other privileges would still be reserved for you.



NOTE HP Web Jetadmin product teams continue to strive toward greater simplicity in managing device security. The device password has been a part of the HP Web Jetadmin security feature set for several years but will be discontinued in future releases of this software. Other security features such as SNMPv3 will continue to enable device security. For more information regarding HP Web Jetadmin and device security, go to <http://www.hp.com/go/webjetadmin>.

Set Community Name

A supplemental security option known as the Set Community Name is available. The device Set Community Name prevents the device from acknowledging unauthorized copies of HP Web Jetadmin and prevents unauthorized users from using SNMP utilities to change device configuration options.

Only users who know a device Set Community Name can use SNMP utilities to change device configuration options. Any SNMP utility that tries to change device configuration options must provide the device Set Community Name before the changes take effect.



NOTE HP Jetdirect firmware version x.06.00 or greater is required to support the Set Community Name.

SNMP

All communications between HP Web Jetadmin and devices are sent across the network using the SNMPv1 protocol. When HP Web Jetadmin configures an SNMPv3-capable device, HP Web Jetadmin can configure the device using one of the following methods:

- SNMPv1 is read-only and SNMPv3 is read/write. This means that the device can only respond to requests for information, such as device status, that are made with the SNMPv1 or SNMPv3 protocol. In addition, the device can only accept Set requests to change configuration options that are made with the SNMPv3 protocol.
- SNMPv1 has no access and SNMPv3 is read/write. This means that the device only responds to SNMPv3 requests to view or change information. While HP Web Jetadmin can use the SNMPv3 protocol to send Set requests to a device, the device must be SNMPv3-capable to receive and respond to those requests.

If SNMPv1 is used, the data portions of the communications between HP Web Jetadmin and devices are sent in clear text format, which means that the information is unencrypted. When HP Web Jetadmin sends a device password to the device, either to set the password or authenticate the device, the information could be captured off the network. The SNMPv3 protocol encrypts the information being sent between HP Web Jetadmin and a device.

Unused protocols

Many networks only use a few protocols. For example, the AppleTalk and DLC protocols are enabled by default on HP Jetdirect print servers, but many networks do not use them. An unused protocol could be considered a back door for unauthorized users to access and configure devices.

Disable any protocols that you are not using to prevent unauthorized access to the devices. Disabling unused protocols also helps to minimize network traffic. Once you disable a protocol, no activity is allowed on that protocol. Printing and management applications that use a disabled protocol will no longer function correctly.

Disable unused protocols for a device on the **Device Configuration** page under the **Network** category. You can also use the multiple device configuration feature to disable unused protocols for several devices at one time.

Administrator passwords

To prevent unauthorized users from changing device configuration options, use HP Web Jetadmin to assign passwords to the following:

- an HP Jetdirect device
- the HP Jetdirect embedded Web server
- a device embedded Web server

The HP Jetdirect device password is stored on the HP Jetdirect device. Any utility, such as HP Web Jetadmin, HP install printer wizard, or the HP Jetdirect embedded Web server, that tries to change device configuration options must specify the HP Jetdirect device password. Other SNMP utilities, however, can still change device configuration options because those utilities do not check for the HP Jetdirect device password.

Assign a password to the HP Jetdirect embedded Web server. This password is stored on the device. When a user browses to the HP Jetdirect embedded Web server, the device verifies this password before any changes to device configuration options take effect. If users do not know the password, they can still view device information through the HP Jetdirect embedded Web server, but they cannot change device configuration options.

The password for the device embedded Web server prevents unauthorized users from changing device configuration options while browsing directly to the device and accessing the device embedded Web server. The device embedded Web server password is separate from the HP Jetdirect device password and the HP Jetdirect embedded Web server password.



NOTE If a printer has firmware version 22.xx, these three passwords are synchronized. If you change one of the passwords, the firmware changes the other two passwords.

Printer control panel

Use HP Web Jetadmin to remotely lock a printer control panel, which prevents unauthorized users from walking up to the printer and changing printer configuration options on the control panel. Users can still view the settings on the control panel, but they cannot change printer configuration options. Most printers that have the control panel lock feature also provide the ability to define the access level as either minimum, moderate, or maximum. The definitions for the different access levels vary depending on the printer.

Device embedded Web server

HP Web Jetadmin provides a link to a device embedded Web server, which provides additional security methods to prevent unauthorized users from accessing the device and changing device configuration options. Assign a password to a device embedded Web server to prevent unauthorized users from browsing directly to the device and accessing the device embedded Web server. This password is stored on the device.

Access control list

HP Web Jetadmin provides an additional security option called an access control list (ACL). The ACL specifies the IP addresses on your network that are allowed access to a device. The list supports up to 10 entries. If the list is empty, then any system is allowed access.

The ACL affects printing as well as management. HP Web Jetadmin typically uses TCP packets during device management. Port monitors, such as the HP TCP/IP Standard Port Monitor, typically use TCP packets to send print jobs. These utilities cannot configure devices or print to devices if they are excluded from the ACL.

By default, host systems with HTTP connections (such as Web browser or Internet Printing Protocol connections) are allowed access regardless of ACL entries. This allows hosts to access the device when Proxy Servers or Network Address Translators are used. However, unfiltered access by HTTP hosts may be disabled by clearing the **Allow Web Server (HTTP) access** check box on a device's **Network Configuration** page.



CAUTION You may lose your ability to communicate with the device if your system is not properly specified in the list or access through HTTP is disabled. If communications with the device are lost, restoring network settings to factory-default values may be required.

Network security for a device

HP Web Jetadmin provides additional security methods that prevent unauthorized users from printing to a device using the following techniques:

- HP TCP/IP Standard Port Monitor
- HP Jetdirect Port
- Microsoft Standard Port Monitor
- Line printer daemon (lpd)
- File Transfer Protocol (FTP)
- Internet Printing Protocol (IPP)

You can enable or disable various network configuration tools, printing methods, and other features that are supported by the device. Because each device supports different features, the items listed will vary. For example, some devices may allow you to enable or disable network configuration tools such as Telnet or the embedded Web server (EWS). Both Telnet and the embedded Web server provide additional access to print server configuration and management Web pages.

Or, you may be able to enable or disable printing services through FTP, lpd (which provide line printer spooling services for TCP/IP systems), IPP, or port 9100 (direct-mode printing). Other features, such as the Service Location Protocol (SLP), used by select client applications to discover and identify the device, may be configurable.

Finally, mDNS and IPv4 Multicast can be enabled or disabled. Typically, mDNS is used on small networks for IP address and name resolution (through UDP port 5353) where a conventional DNS server is not used. IPv4 Multicast, if enabled, allows the print server to send and receive IP version 4 multicast packets.

To provide even more security against unauthorized device access, use HP Web Jetadmin to disable additional services for configuring a device or printing to a device. The following list includes examples of the services that you can enable and disable:

- Service Location Protocol (SLP) configuration
- Telnet configuration

The following list includes examples of the printing methods that you can enable and disable:

- TCP Port 9100
- File Transfer Protocol (FTP)
- Line printer daemon (lpd)
- Internet Printing Protocol (IPP)

Storage management for devices



NOTE The storage management options will not appear if the device does not support the following features.

To protect the information that is stored on a device's hard disk drive or other erasable storage devices from unauthorized access, you can use the following HP Web Jetadmin features.

- File system external access: This feature allows you to manage the access to file systems on a device's or group of devices' hard disk drive.
- Secure storage erase modes: This feature determines the behavior of a secure storage erase operation and the erase operation that a printer automatically performs to make space available on a hard disk drive for incoming print jobs.
- Secure storage erase: This feature erases a device's hard disk drive or other erasable storage devices based on the secure storage erase mode setting.

To use any of the storage management features, you must set the file system password on a device or group of devices on the **Configuration** page. For easier password management, it is recommended to set the same file system password for all devices.

File system external access

The file system external access option allows you to manage the access to the file systems by various printer communication languages on a device hard drive. This option protects a device's file system from unauthorized reading or writing of data. For example, if you disable a printer communication language, that printer communication language cannot read or write any data to the file system on a device's hard drive.

The following are the printer communication languages that HP Web Jetadmin can enable or disable.



NOTE All of the printer communication languages are enabled by default.

- Network File System (NFS)
- PostScript (PS)
- Peripheral Management Language (PML)
- Printer Job Language (PJL)

If a printer communication language is disabled on a device, the device can still receive requests and information from the printer communication language. For example, a PML request can be sent to a printer to set the media size for a print job. However, the PML printer communication language cannot send a request to read or write any data to the hard disk drive.

You can access this feature from the device's **Configuration** page or from the **Multiple Device Configuration** page.

Secure storage erase modes

The secure storage erase modes determine the behavior of a secure storage erase operation and the erase operation that a printer automatically performs to make space available on a hard disk drive for incoming print jobs. The erase operations are designed to add available space to a device's hard disk

drive and to prevent unauthorized users from accessing confidential information from a device's hard disk drive or other erasable storage device.



NOTE The secure storage erase and the automatic printer file erase operation use the same secure storage erase mode.

The following are the supported secure storage erase modes:

- **Non-secure Fast Erase:** This mode erases the file system references to operations, such as completed print job references. By erasing the references, space on the hard disk drive is made available. This is the fastest erase mode and the default mode.
- **Secure Fast Erase:** This mode erases the file system references to operations and provides one layer of masking to hide data stored on the hard disk drive. This mode is slower than the **Non-secure Fast Erase** but more secure.
- **Secure Sanitizing Erase:** This mode erases the file system references to operations and provides multiple layers of masking to hide data stored on the hard drive. This mode may introduce a significant performance impact to the device while the mode is executing.

You can access this feature from the device's **Configuration** page or from the **Multiple Device Configuration** page.

Secure storage erase

The secure storage erase feature erases a device's hard disk drive or other erasable storage devices to prevent unauthorized users from accessing confidential information. You can erase both the hard disk drive and an erasable storage device at the same time. The level of disk erasure is based on the secure storage erase mode.

Depending on the device, HP Web Jetadmin may display a status page detailing the progress of the secure storage erase. A link to the status page displays in the **Background Tasks** section.



NOTE For multiple devices, this feature erases all available hard disk drives.

Erasing the contents of a device's hard disk drive may take a long time. During the hard disk drive erase operation, the file system on a device's MIB is not available. However, you can access all other sections of the device's MIB and other devices with HP Web Jetadmin while deleting data from a selected device.

You can access this feature from a device's **Status** page.

Credential storage

The Credential Storage feature enables HP Web Jetadmin to store all device credential information on the HP Web Jetadmin host machine. This feature gives network administrators the flexibility to configure devices when needed without compromising security. With the Credential Storage feature, HP Web Jetadmin can retrieve device credentials from the credential storage while configuration operations, such as Autoconfiguration and batch device group configuration, are processing.

When a user tries to configure a device, HP Web Jetadmin verifies if the profile that is trying to view or change device information has the permission to do so. If the profile has the correct permissions, HP Web Jetadmin performs the configuration operation using the credentials stored on the HP Web Jetadmin host machine. If the operation fails because the proper credentials are not stored on the HP Web Jetadmin host machine, HP Web Jetadmin logs the failure on a results page, and then starts the process again on the next device. After all devices have been configured or failed the operation, HP Web Jetadmin displays a results page. If a device failed, a link displays on the results page that opens a page where you can add credential information to the HP Web Jetadmin host machine.

The following are examples of credential types that can be stored on the HP Web Jetadmin host machine:

- Device password
- File system password
- Embedded Web server password
- Community Name
- SNMPv3



NOTE To discover SNMPv3-enabled devices that do not have credential information stored on the HP Web Jetadmin host machine, go to the **Device Management > Discovery > Properties** page. Select the **Discover SNMPv3-Enabled Devices** check box and run either an IP Broadcast, IP Range, or Specified Address discovery. Then, go to the **Device Management > Tools > Unmanaged SNMPv3 Devices** page. On that page you can view the IP addresses of the SNMPv3-enabled devices that were discovered and specify credential information for a device or group of devices.

Section 8

Devices

This section contains the following:

[Chapter 22, Introducing devices](#)

[Chapter 23, Searching for devices](#)

[Chapter 24, Managing device lists](#)

[Chapter 25, Managing devices and the device cache](#)

[Chapter 26, Configuring multiple devices](#)

[Chapter 27, Updating firmware](#)

22 Introducing devices

This section covers the following topics:

- [Devices overview](#)
- [Java applets and JavaScript](#)
- [Embedded and integrated Web servers](#)
- [Device alerts](#)
- [Embedded Web server pages](#)

Devices overview

With HP Web Jetadmin, you can manage and troubleshoot a diverse inventory of network devices, including the following:

- More than 100 models of HP printers, digital senders, and projectors.
- HP Jetdirect-connected, parallel-based printers
- Third-party vendor printers that are Standard Printer MIB compliant
- Printers with embedded Web servers

Legacy support

HP Web Jetadmin supports the features of the current family of HP LaserJet printers, from the HP LaserJet II to the newer HP LaserJet 9000. Use HP Web Jetadmin to configure and manage a wide range of HP printers. Help desk personnel can use HP Web Jetadmin to check printer status and statistics for end users. HP Web Jetadmin uses Java applets, JavaScript, and Simple Network Management Protocol (SNMP) to support these printer features.

HP Web Jetadmin ability to support older printers is more limited. For example, HP Web Jetadmin might only be able to show printer status information such as online, offline, and out of paper.

TCP/IP and IPX/SPX protocol support

HP Web Jetadmin supports TCP/IP and IPX/SPX protocols, which means that it supports a wide variety of devices without requiring hardware updates.



NOTE To support the IPX/SPX protocol, HP Web Jetadmin must be running on Windows.

Although HP Jetdirect print servers support several popular network operating systems, these operating systems might require different protocol stacks. By building support for these protocols into HP Web Jetadmin, Hewlett-Packard continues to protect your investments. You can also view limited status information for third-party devices that are connected with an external HP Jetdirect print server.

Third-party vendor support

HP Web Jetadmin supports any printer that supports the Standard Printer MIB, which is defined by Request for Comments (RFC) 1759. This means that you only need one tool to manage the various brands and models of network devices in a mixed environment. Manufacturers that currently support the Standard Printer MIB include Hewlett-Packard, Lexmark, IBM, Xerox, Tektronix, and Kyocera.

HP Web Jetadmin sends a SNMP query to a device, reads the information in the device Standard Printer MIB objects, and displays this information. The information stored in the Standard Printer MIB varies by vendor and device model. This means that some of the information that HP Web Jetadmin is capable of displaying might not be available for third-party devices. However, some third-party manufacturers offer third-party plug-ins that enable HP Web Jetadmin to discover and display more information about the device. For more information about a third-party device plug-in, contact the vendor of the device.

HP Web Jetadmin attempts to support a limited functionality set for each device it discovers, whether a device plug-in has been developed or not. If a device does not answer an HP Web Jetadmin SNMP query, the information does not display in HP Web Jetadmin. The following is a list of the information HP Web Jetadmin can display and typical MIB object queries that HP Web Jetadmin sends to the device:



NOTE Most of the following information displays on the **Device Status** page, **Device Diagnostics** page, and as a column on the **All Devices** page.

- Device image — HP Web Jetadmin displays an image of the device that matches the device type on the **Device Status** page. If the device does not send enough information to HP Web Jetadmin, HP Web Jetadmin displays an image of a generic HP LaserJet device.
- Model name — The device model name displays if the device responds to the hrDeviceDescr object in the Host Resources MIB.
- Device status — The current state of the device displays if the device responds to the hrDeviceStatus, hrPrinterStatus, and hrPrinterDetectedErrorState objects in the Host Resources MIB.
- Front panel display — The current message on the device's control panel displays if the device responds to the Standard Printer MIB query for the prtConsoleDisplayBufferText object.
- Serial number — The unique manufacturing identifier for a device displays if the device responds to the MIB-II sysDescr object and occasionally to the hrDeviceDescr object in the Host Resources MIB. The serial number is usually on the test page or stamped externally on the device.
- Page count — The page count value displays if the device supports the prtMarkerLifeCount object in the Standard Printer MIB. The fax, copy, scan, and color page counts might display if the vendor has developed a plug-in for the device.
- IP address — The device IP address and other IP-related settings display if the device responds to various MIB-II objects.
- IP hostname — IP hostname, also known as system name, displays if the device responds to the sysName MIB-II object. This name may or may not be registered with name servers, such as WINS or DNS. The registration depends on the device configuration.
- IPX name — The IPX name, and other IPX-related settings, displays if the device responds to various MIB-II objects.
- System contact — The system contact displays if the device responds to the sysContact MIB-II object.
- Device description — The description displays if the device responds to the sysLocation MIB-II object.
- Capabilities — The device capabilities, such as installed languages, trays, and accessories, display on the **Device Status** page if the information is supported by the device.
- Remaining toner levels — The approximate amount of toner or ink remaining in a cartridge displays if the device responds to the prtMarkerSuppliesLevel and prtMarkerSuppliesMaxCapacity MIB objects.
- Remaining input tray levels — The approximate amount of paper remaining in an input tray displays if the device responds to the prtInputCurrentLevel and prtInputMaxCapacity MIB objects.
- Alerts — Vendors might develop a plug-in to define the alert types and to stipulate whether traps or polling are used to generate the alerts. However, if a device does not have vendor-defined

plug-in, alerts might be available through polling. Some of the alerts that HP Web Jetadmin might monitor include:

- Toner low
 - Toner out
 - Media low
 - Media out
 - Paper out
 - Offline
 - Intervention needed
 - Cover open
- Configuration — The configuration options only display if a third-party vendor provides a plug-in that has device configuration capabilities. The vendor defines which configuration options are available for HP Web Jetadmin to configure. However, when third-party devices are connected to the network through an HP Jetdirect EX devices, configuration of the HP Jetdirect device is possible. Otherwise, the following items are available if the objects are supported by the device:
 - Contact information (sysContact object)
 - Description (sysLocation object)
 - Control panel language (prtConsoleLocalization object)
 - Orientation (prtInterpreterDefaultOrientation object)
 - System Name (sysName object)
 - Control Panel Access (prtConsoleDisable object)



NOTE Print queue creation and firmware upgrades are reserved for HP devices.

HP Web Jetadmin also supports devices with embedded Web servers by providing a link to the embedded Web server URL.

Java applets and JavaScript



HP Web Jetadmin is Java-enabled, allowing it to capitalize on the powerful features of Java programming language. HP Web Jetadmin Java applets take advantage of new printer features and allow more interactive responses from the user interface.

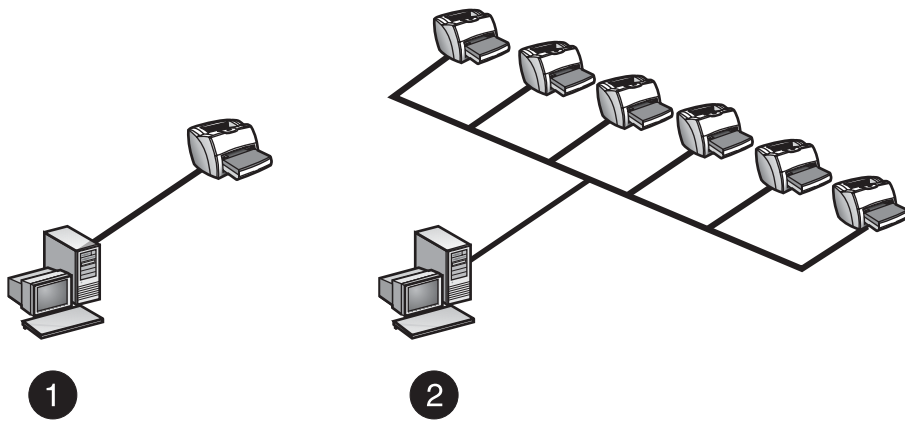
Java is platform-independent, which means that HP Web Jetadmin Java applet features are available regardless of the operating environment. In addition, Java applets are executed in the browser, which means that you do not need special software to run them.

However, Java is limited in speed. If Java is not necessary, HP Web Jetadmin uses a scripting language called JavaScript. JavaScript executes faster than Java while still adding capabilities that the Common Gateway Interface (CGI) does not provide. JavaScript allows for a livelier, more animated user interface and helps keep Web pages cleaner by reducing the need for **Submit** buttons on Web forms.

The graphical image that appears on a **Device Status** page is actually a Java applet that shows device status. As that status changes, the Java Status applet updates the graphical image without having to refresh the entire page. Use the **Device Management > Management Settings > Network Settings > Polling** page to specify how often the Java Status applet polls devices. By default, the Java polling rate is 6 seconds. If you poll devices more often, it affects network traffic and it increases the Web server load. If you are running HP Web Jetadmin on a host machine with a particularly heavy load, you might want to poll devices less often.

Embedded and integrated Web servers

Icon	Description	Icon	Description
	HP Web Jetadmin host machine		Printer



1	Embedded Web server
2	Integrated Web server

Because HP Web Jetadmin acts as its own integrated Web server, you must understand the differences between managing devices through an embedded Web server and an integrated Web server. Each method has strengths that are appropriate for certain environments.

Using an embedded Web server

Embedded Web servers are completely contained within a print device; you do not need any additional hardware or vendor software. By using a Web browser to access an HP Jetdirect device embedded Web server, network users can get network printer status updates, perform simple troubleshooting operations, change device configuration options, and link to HP's online customer support.

You might prefer to use an embedded Web server to perform the following tasks:

- manage a single device or a limited number of devices on a small network
- manage each device that contains an embedded Web server individually

Using an integrated Web server management tool

Despite their range of functionality in small network environments, embedded Web servers do not offer an integrated solution. You cannot monitor the status of multiple devices at the same time. Instead, you must enter each device IP address to access device status. Embedded Web servers do not provide any site map capabilities or topology views, which are helpful for managing multiple devices, without installing extra software.

HP Web Jetadmin, on the other hand, is an integrated Web server. HP Web Jetadmin runs on a separate machine, resulting in an extended range of management capabilities that become more valuable as the number of network devices you manage increases.

Typically, an integrated Web server management tool such as HP Web Jetadmin is more useful when you need to perform the following tasks:




- view all of the devices across the network
- discover devices on a network automatically
- configure the options for multiple devices
- configure the options for all of the devices in a device group
- create print queues
- manage Standard Printer MIB-compliant printers
- manage legacy devices that do not have an embedded Web server

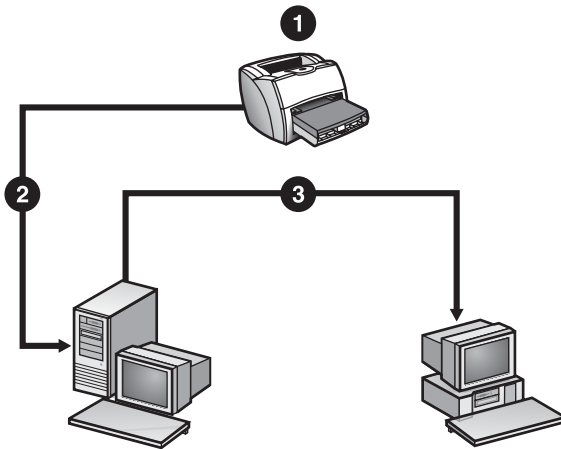
If you only manage a few printers for a small organization, embedded Web servers might be the most appropriate solution. As the network grows, you might find that managing devices individually has become too time-consuming and decide to find a more integrated management solution. In this case, install HP Web Jetadmin with full confidence that you can support legacy devices and maintain your initial investment in embedded Web servers. HP Web Jetadmin communicates with embedded Web servers to display comprehensive information in a framework that helps you manage multiple devices and device groups.

HP Jetdirect print servers can also link to HP Web Jetadmin through one of the following options:

- **Redirect URL** – Some legacy HP Jetdirect print servers, such as the HP Jetdirect 600N series EIO and HP Jetdirect 300X with a firmware version prior to x.07.03, contain a Web Redirector feature that, when configured with the HP Web Jetadmin URL, simulates an embedded Web server. If you enter the HP Jetdirect print server IP address in your Web browser, the HP Jetdirect print server redirects the request to HP Web Jetadmin, which then displays the printer properties. If you use this option, all of the information displayed comes from HP Web Jetadmin.
- **Integration URL** – This option is available in HP Jetdirect print servers that have an embedded Web server, such as the HP Jetdirect 170X and HP Jetdirect 500X. The Integration URL option is also available for the HP Jetdirect 600N series EIO and HP Jetdirect 300X print servers with updated firmware. When you have configured the Integration URL, the embedded Web server can enhance the information it provides with additional content from HP Web Jetadmin. The information displayed in the embedded Web server is a combination of its own information and HP Web Jetadmin information. In particular, the embedded Web server **Status** page displays status information from HP Web Jetadmin, and the embedded Web server **Configuration** page is the same as the HP Web Jetadmin **Device Configuration** page.

Device alerts

Icon	Description	Icon	Description
	HP Web Jetadmin host machine		Workstation
	Printer		



1	Printer runs out of paper
2	Printer sends an alert to the HP Web Jetadmin host machine
3	HP Web Jetadmin host machine sends an alert to the email distribution list.

HP Web Jetadmin lets you route various types of alerts, such as standard SNMP traps and embedded Web server alert notifications, from the HP Jetdirect print servers to email addresses or other notification methods.



NOTE For more information on how to apply other notification methods to HP Web Jetadmin, contact the HP Customer Care Technical Center using one of the methods described on the following Web site: <http://www.hp.com>. Click **Contact HP**.

SNMP traps are also known as HP Jetdirect alerts. Although printers might use different methods to communicate with HP Jetdirect print servers, the traps that print servers send to HP Web Jetadmin are consistent for all of the HP Jetdirect-connected printers that are Standard Printer MIB compliant.

HP Jetdirect firmware version x.06.00 or greater is required to support the HP Jetdirect alerts feature. In addition, the device Standard Printer MIB objects must support HP Jetdirect alerts. If a printer and an HP Jetdirect print server do not meet these criteria, HP Web Jetadmin can still support alerts using its polling method.

Use the HP Jetdirect alerts feature to proactively monitor and resolve network printer problems. Because you receive early notification of problems, you can correct them before they impact end-user productivity, saving time for both you and your users.

To configure HP Jetdirect alerts, you must first enable the alerts feature in HP Web Jetadmin and specify the default settings. After you have enabled the HP Jetdirect alerts feature, you must decide which devices you want to monitor, configure the alerts that you want to forward for each device, and specify the email addresses or configure any other notification methods that you want HP Web Jetadmin to send alert messages to. For example, you can send some alert messages for a device to one email address and send other alert messages for the same device to a different email address.

Email alert messages contain the following information:

- Device description
- Error condition
- Front panel message
- URL where HP Web Jetadmin can be accessed
- Date of the alert

To display the **Device Status** page for the device that generated the alert, click the link at the bottom of the alert message. The format and content of the alert message is based on the `hpalmsg.txt` file located in the directory where you installed HP Web Jetadmin.



NOTE Depending on the notification method that you use, the output and configuring process may vary.

HP Web Jetadmin keeps a log of every alert message that it sends. This log file is never larger than 1 MB. When the file reaches 1 MB, HP Web Jetadmin begins deleting older messages. You can view the alert log from the **Device Management > Tools > View Log** page.

Embedded Web server pages

Some devices have embedded Web server pages that let you view properties and configure device attributes. A particular device might have some options that you can only configure on its embedded Web server page. To access a device embedded Web server page, access the **Device Status** page, and select **Device Web Page** from the drop-down list on the content toolbar. HP Web Jetadmin displays the device embedded Web server page in a separate browser window.

For more information about what you can do while viewing the device embedded Web server, see the help in the browser window that HP Web Jetadmin opens to display the embedded Web server page.

23 Searching for devices

This section covers the following topics:

- [Device searching overview](#)
- [Quick searches](#)
- [Device list searches](#)

Device searching overview

HP Web Jetadmin performs a discovery and stores the information about the devices it finds in a device cache. After the discovery is complete, you can search the device cache to find specific devices or devices with particular capabilities. You can also search directly on the network for devices that are not in the device cache. This means that you can work with new devices without waiting for a discovery to run.

If you search for dynamic information, such as status, HP Web Jetadmin must poll each device. In these searches, the discovery activity required to get the information creates additional network traffic. If a search takes longer than you expect, HP Web Jetadmin is probably polling the device for more information.

Quick searches

Use the **Quick Device Find** option in the **At a Glance** area to find specific devices. This type of search is always available, no matter what page you are on. Search for a specific device using the following information:

- IP hostname (for example, hpb12345)
- IP address (for example, 15.62.62.62)
- IPX address (for example, 12345678.1234567890AB)
- Hardware address (for example, 1234567890AB)

HP Web Jetadmin searches the device cache. When HP Web Jetadmin finds the device, it displays the **Device Status** page. If HP Web Jetadmin does not find the device in the device cache, it searches the network.

To quickly find a specific device

1. In the **At a Glance** area, type the device address in the text box labeled **Quick Device Find**.



NOTE To find more than one device, separate the device addresses with a semicolon.

2. Click **Go**.

Device list searches

When you display a device list, such as the **All Devices** page or a list of the devices in a device group, you can search that list for specific devices. Search for any full or partial string of text that appears in any of the columns of the device list. HP Web Jetadmin highlights the devices that match the search criteria.

Searches are cumulative. For example, you might want to find two devices and know each device IP address. Search for the first IP address. HP Web Jetadmin highlights that device in the device list. Then you can search for the second IP address. HP Web Jetadmin highlights that device in the device list, while still highlighting the first device.

To search a device list

1. Display a device list.
2. Click the **Search/Select** tool on the content toolbar.
3. On the dialog box displayed, type the device information that you want to find.
4. Click **OK**.

24 Managing device lists

This section covers the following topics:

- [Device managing overview](#)
- [Device list views](#)
- [Custom views](#)
- [Filtering lists](#)
- [Sorting lists](#)
- [Exporting device lists](#)
- [Printing device lists](#)

Device managing overview

Display a list of all of the devices in the device cache or a list of all of the devices in a device group. Once you have displayed a device list, you can perform the following tasks:

- change the view, which determines what columns of information are displayed
- sort the devices by any of the columns, making it easier to find a particular device
- display each device icon as part of the device list
- display status indicators
- display a **Device Status** page
- create temporary and permanent device groups
- add new devices to the current device list
- delete devices that are no longer on the network but are still in the device cache
- refresh information for a specific device or refresh the entire device list
- print the current list of devices
- export the current list of devices to a file that you can open in an application in order to sort the information or generate reports
- use the **Filter Tool** to reduce the number of devices displayed in the list



NOTE If the **Device Model** column is blank, that device has a model name that HP Web Jetadmin does not recognize. If **Unknown (Disconnected)** appears in the **Device Model** column, the HP Jetdirect print server does not have a printer connected to it.

Device list views

HP Web Jetadmin provides several views for displaying device lists. Each view displays different information about devices. The following are HP Web Jetadmin predefined views:

- **Default View** displays the device model, hardware address, port number, IP address, IP hostname, and IPX name.
- **Status View** displays the device model, hardware address, port number, device description, status description, and status level.
- **Detailed View** displays the device model, hardware address, port number, device description, and system contact.
- **Asset View** displays the device model, hardware address, port number, device description, system contact, asset number, and serial number.
- **Jetdirect View** displays the hardware address, port number, HP Jetdirect model, HP Jetdirect firmware revision, system contact, and device model.
- **Page Count View** displays the device model, IP address, port number, start date, interim page count, and total page count. The interim page count is the number of pages a printer has processed since the page count was set to zero. The total page count is the same as the page count displayed on the printer test page. Not all printers support the **Page Count View**. The start date displayed is based on the host machine clock. Note that the host machine where HP Web Jetadmin is running and the client where the Web browser is running may be in different time zones.
- **Export View** displays many, but not necessarily all, of the columns of information stored in the cache. This view is useful when you want to export the device information from the device cache to a comma-separated values (CSV) file.

Custom views

In addition to HP Web Jetadmin predefined views, you can create custom views that only display the information that you want to see. Create custom views on the **Device Management > Management Settings > Views** page. Once created, your custom view is available from the **View** drop-down list. You can apply that custom view to any list.

Some device information is not stored in the device cache. To display this information in a view, HP Web Jetadmin must poll each device, which can increase network traffic. If you include device information that is not stored in the device cache when you create a view, system performance might be affected by this increased network traffic.

Another way to use custom views is to generate reports. For example, if you want to generate a report on page usage, add the **Interim Page Count** and **Total Page Count** columns to a view. Once you have created the view, select that view on the **All Devices** page and export the information for that view to a comma-separated values (CSV) file. Then you can use a third-party database reporting application to generate a report on page usage from the information in the CSV file.

Filtering lists

If you have a large network with many devices or have created many device groups, your lists might be very long. Use the **Filter Tool** to reduce the number of items displayed in a list, making it easier to find specific items. To access the **Filter Tool**, display any device list, and then click the **Filters** icon.

Specify more than one filter for a list. Filters are cumulative. For example, you could filter the list so that only HP LaserJet 8000 printers are displayed. Then you could filter that list so that only those printers that have an IP hostname that begins with NP are displayed.

The **Advanced** button displays an additional drop-down list of options that you can use to further define the filter criteria, such as **Equals** and **Greater Than or Equal**. For example, you could filter the list so that only printers that print 17 pages per minute or more are displayed.

Once you have filtered a list, you can save the filters for the current browser session or you can save them permanently. Apply saved filters to any list of devices or groups.

Sorting lists

You can sort a list of devices, device groups, subgroups, or devices in a device group. To sort a list, click on the column heading that you want to sort by. The list is sorted in ascending order. To sort in descending order, click the column heading again.

Exporting device lists

Export device information to a comma-separated values (CSV) file from any page that displays a list of devices. Export the entire device list or you can filter the device list and only export the information for specific devices. Select the view that contains the information that you want to export.

Once you have exported device information, you can open the file in an application, such as an electronic spreadsheet or a third-party database reporting application, sort the information by different fields, and generate reports.



NOTE You must have access rights to the local disk where HP Web Jetadmin saves the exported information.

Printing device lists

Print device information from any page that displays a list of devices. You can find this feature in the **Device Tools** drop-down list. Print the entire device list or you can filter the device list and only print the information for specific devices. Select the view that contains the information that you want to print.



NOTE This is not the same as the **Print** command in the browser **File** menu.

25 Managing devices and the device cache

This section covers the following topics:

- [Device cache overview](#)
- [Status page](#)
- [Configuration page](#)
- [Print queue creation](#)
- [Diagnostic information](#)
- [Print jobs page](#)
- [Manage the device cache](#)
- [Device Application Manager](#)
- [Device test page](#)
- [Device reset](#)
- [View Log](#)

Device cache overview

This chapter contains the following device-related information:

- A description of the **Device Status** page, which displays the features of each supported device and the status of each device.
- A description of the **Device Configuration** page, which displays the configuration options available for a selected device.
- A description of the **Create Queue** option, which is used to specify the host machine where you want to create the print queue and the devices that you want to associate with the new print queue.
- A description of the **Device Diagnostics** page, which displays detailed information about a device. This information is used to diagnose device problems from a remote location.
- A description of the **Device Print Jobs** page, which displays a list of all of the jobs that the device has processed.
- A description of HP Web Jetadmin features used to manage the device cache.
- A description of the Device Application Manager, which is used to manage device applications on an individual printer, printers in a temporary device group, or printers in a device group.
- A description of how the embedded Web server (EWS) is configured.
- A description of the **Device Test Page** page, which is used to print a test page on a device or to upload a file to HP Web Jetadmin to send to a device for printing.
- A description of the **Device Reset** page, which displays various reset options for a device.
- A description of the **View Log** page, which displays the history of all operations processed for HP Web Jetadmin managed devices.



NOTE You can also manage device alerts and a device's hard disk drive or other erasable storage device. For more information about managing device alerts, see [Chapter 12, Overview of alerts](#). For more information about managing a device's hard disk drive or other erasable storage device, see [Storage management for devices](#).

Status page

HP Web Jetadmin provides a **Device Status** page for each supported device. The **Device Status** page provides information that you can use to manage devices without leaving your workstation.

Help desk personnel in particular can use the **Device Status** page to see what features each device supports and the device status. For example, when a user calls to ask why a printer is not working, help desk personnel can see exactly what the problem is and who to contact for maintenance. If the printer is offline, help desk personnel can put it back online from their workstation. If the problem cannot be resolved immediately, help desk personnel can direct the user to another printer in the company that has the features needed for a particular print job.

The **Device Status** page shows the following information about a device.



NOTE The device feature set, the information stored in the device MIB, and the device firmware revision determine what information HP Web Jetadmin displays.

Status

This section displays a graphical image of the device and a stoplight icon that indicates device status. Depending on the printer, you might also see the current printer control panel message and an icon for taking the printer offline or bringing it online remotely.

The Java Status applet updates the graphical image of the device with the current status at regular intervals. As the status changes, the applet shows exactly what is occurring and what action is required, making this information available at a glance. For example, if a printer top is open, the **Device Status** page shows a graphic of the printer with the top open.

Device information

This section displays the device model name, IP hostname, IP address, IPX name (only on Windows systems), hardware address, description, and system contact. It also provides a list of device capabilities.

HP Instant Support

The HP Instant Support link connects you to the HP Instant Support Web site for the device. When a user clicks the link, an HP Instant Support Web page appears.



NOTE If you click the link, the device automatically sends information to the HP Instant Support Web site and opens a new Web browser that allows the user to troubleshoot existing issues or get information and tips on how to best use the device.

NOTE The link does not appear if the device does not support HP Instant Support.

Toner gauge

The toner gauge accurately indicates the percentage of toner or ink that remains in the printer cartridge. The toner gauge only appears for HP printers that support this feature. The toner gauge might also appear for some non-HP printers that are Standard Printer MIB compliant.

HP Web Jetadmin is the only printer management tool that measures toner and ink levels in precise increments. Use the toner gauge to remotely monitor the remaining life expectancy of a printer toner or ink cartridge. Use this feature to proactively order and replace cartridges, minimizing printer downtime and the impact on end-user productivity.

Group membership

This section tells you if the device belongs to a device group. You can add the device to an unlimited number of device groups, and you can remove the device from any of the device groups it belongs to.

Configuration page

HP Web Jetadmin provides a **Device Configuration** page for each supported device. The **Device Configuration** page displays the device configuration options available for the selected device. Use HP Web Jetadmin to configure each device remotely, which saves the time it takes to configure a device at the device's physical location. This feature is particularly useful if the organization has multiple buildings or sites.



NOTE For information on configuring multiple devices, see [Chapter 26, Configuring multiple devices](#).

Select the type of configuration options that appear on the page by selecting the different options in the **Configuration Categories** section. HP Web Jetadmin only displays the configuration options that the device supports. The following are examples of different categories of configuration options that HP Web Jetadmin might display:

- **Quick Set** – This category displays the configuration options that are used most often. Select which configuration options appear on this page by clicking the **Edit Quick Set** button.
- **Device** – This category is the default category and displays the configuration options for the device.



NOTE Create custom configuration options on the **Device Management > Tools > Custom Configuration > Labels** page.

- **Network** – This category displays the network options for the device. Specify network options, such as setting an IP address and a system name.
- **Security** – This category displays security options to set on the device. Specify device security options, such as access to the device control panel or access to the device based on a password.
- **Media Administration** – This category displays the types of media that can be enabled or disabled for the device.
- **Tray Administration** – This category displays the input tray assignments for the device. Assign media sizes and types to input trays and view how much media is in each tray.
- **Wireless** – This category displays configuration options available for a device that has the capability to be connected to the network using wireless technology.
- **File System** – This category displays configuration options available for setting file system specifications for a device.
- **Embedded Web Server** – This category displays configuration options available for settings related to the device embedded Web server. See [Configuring the embedded Web server](#).
- **High Capacity Output Mode** – This category displays configuration options to specify which high-capacity output accessory the device directs the output.
- **Remote Control Panel** – This category displays a remote version of the control panel. Only the following devices support this feature: HP LaserJet 5Si, 4000, 4050, 4100, 5000, 5100, 8000, 8100, 8150, HP Mopier 240 and 320, and HP Color LaserJet 4500 and 4550.

Configuring the embedded Web server

You can manage the embedded Web server parameters on an individual printer or printers in a device group by configuring the embedded Web server settings on a device or device group configuration page.

Managing the parameter settings for printers in a device group saves time and prevents errors that might occur when you make changes to each printer separately.



NOTE To configure the embedded Web server, an HP Jetdirect 610n or higher must be installed in the printer.

You can configure the embedded Web server to perform the following tasks:

- Specify a URL where the embedded Web server can retrieve configuration information.
- Select check boxes that turn various embedded Web server features on and off.
- Specify the embedded Web server password.
- Specify email settings for sending and receiving email messages from the printer. Use the following information to specify the email settings:
 - An Internet Protocol (IP) address is the address of a device attached to a TCP/IP network. Every device must have a unique IP address.
 - Simple Mail Transfer Protocol (SMTP) servers route SMTP messages throughout the Internet to an email server. The printer uses the email server to send email notifications.
 - The domain name identifies where Embedded Web Server Configuration Manager sends the email message, for example, mycompany.com. The domain name generally resolves to an IP address. However, not all devices can resolve a domain name to an IP address, so both the domain name and an IP address are required.
 - Post Office Protocol 3 (POP3) is a standard email server commonly used on the Internet. POP3 provides a message store feature that holds incoming email until users log on and download the messages. The printer uses this email server to search for incoming email messages.
- Specify the language that the embedded Web server uses to display Web pages. For example, if the primary language used in your company is not English, you can select another supported language to display the Web pages.
- Specify links to other Web sites. This feature is a convenient way to browse to a Web site.
- Specify which machine on the network the printer connects to for time requests. HP printers do not have internal clocks; therefore, they need to connect to another machine on the network to request the correct time.



NOTE Setting parameters affects all printers listed in the **Toolbox** under the **Devices** section.

Digital sending settings

Devices with digital send capability can transform scanned documents into digital images. The device then sends the digital images as attachments directly to an email address where the document can be shared, stored, or edited.

Use HP Web Jetadmin to configure the digital sending settings for one or more devices remotely, which saves the time it takes to configure the devices at their physical location. For single devices, only the configuration options that the selected device supports are displayed. For multiple devices, all configuration options are displayed, but only the options that pertain to each individual device are applied when the settings are saved.

The following are examples of configuration settings and options that HP Web Jetadmin might display:

- **General Settings** – These settings specify the administrator information. The administrator should be contacted if there is a problem with the digital send device.
- **Email Settings** – These settings control how the digital send device connects to an email server and how the emails are constructed and sent.
- **Addressing Settings** – These settings control how the digital send device connects to an LDAP server to look up email address information.
- **Address Book** – This option allows you to import an address book into the digital send device to provide a look-up table for email addresses when sending emails from the device.
- **Log** – These options allow you to view the log files associated with a single device. The logs contain digital sending job information and error events associated with the device.
- **Preferences** – These settings control preferences for the scanner settings and time-outs. The time-out settings specify how long the digital send device waits to revert to saved settings after a user has made changes at the console.

You can save and load device configuration settings, and create a set of device configurations that can be applied to new devices or re-applied to old devices. Use the **Save Settings To File** option to save the currently selected configuration settings to a file that can be used for other devices. Use the **Load Settings From File** option to load previously saved configuration settings from a file.

Fax settings

Digital send devices with built-in fax modems can send scanned documents as faxes to a fax phone number. The fax settings control how a digital send device sends and receives faxes.

The following are examples of configuration settings and options that HP Web Jetadmin might display:

- **General** – These settings specify advanced fax settings, such as modem and ringer volumes, whether the header information is overlaid on top of the fax image, and whether the fax device should use JBIG compression or Error Correction Mode (ECM).
- **Modem Settings** – These settings allow the user to send and receive faxes directly from any fax-capable digital send device.
- **Send** – These settings specify the settings for sending faxes from the digital send device. These settings affect how the device dials outbound faxes and how it behaves when the receiving line fails to answer the fax.
- **Receive** – These settings specify which bins on the digital send device the faxes are printed from and delivered to, how the faxes are formatted for printing, the number of rings the fax device waits before answering an incoming call, and whether the device should forward the fax document to another fax capable machine.

Print queue creation

A print queue is a central resource on a host machine that holds print jobs until the device is available. Use the **Create Queue** option to specify the host machine where you want to create the print queue and the devices that you want to associate with the new print queue.



NOTE You can only work with one device model at a time, but you can select any number of devices within that device model.

Create a print queue for the same devices on Windows, HP-UX, Solaris, Linux, and any other supported host type. To create print queues for the same devices on more than one host type, you must repeat the create queue process for each host type.



NOTE HP Web Jetadmin pushes the print queue management software onto the print queue host machine if the software is not already installed.

Diagnostic information

If a device control panel or test page does not provide enough information to resolve a problem or you need to investigate a problem from a remote location, the **Device Diagnostics** page provides extensive diagnostic information.

The **Device Diagnostics** page provides the following categories of diagnostic information:



NOTE The categories displayed might not be the same for all interface cards because the protocols that a particular HP Jetdirect print server supports might be different.

- **Device** – This section provides general information about the device, consumables status, automatic language switching, and supported printer languages.
- **Jetdirect** – This section provides general information about the HP Jetdirect firmware, detailed information about the network packets the device has processed, and the number of incoming and outgoing SNMP packets the device has processed.
- **TCP/IP** – This section provides general information about the device TCP/IP configuration and the various protocols.
- **NetWare** – This section provides information about the device NetWare connections. If a device is configured for NetWare Bindery or NetWare NDS, you can log into the HP Jetdirect print server. When you return to this page, HP Web Jetadmin displays the print queue information in the **NetWare** section.
- **Usage Meters** – This section provides information about toner coverage, page meters, and usage. This section is only displayed if the printer supports these features.
- **Media information tables** – These tables provide information about media usage, such as the use of device input trays and the number of color or monochromatic print jobs. This section is only displayed if the printer supports these features.
- **Historical Printer Coverage** – This table provides information about past toner coverage usage. This section is only displayed if the printer supports this feature.

Diagnostic information about the connection status is also available for IPX/SPX Peer-to-Peer, EtherTalk, and Data Link Control/Logical Link Control (DLC/LLC). This information indicates if these products are supported and connected.

Use the diagnostic information to plan and manage assets. For example, when a device indicates a problem, such as a high engine page count or a large number of paper jams, it might mean that the device requires preventive maintenance.

Print jobs page

The **Device Print Jobs** page displays a list of all of the jobs that the device has processed. Use the print job history to troubleshoot device problems. For example, if a user sent a job to the device, but the job did not print and it is not listed in the print job history, you know that the job never reached the printer.

The amount of information displayed depends on which operating systems were used to print the jobs. Some information may not be passed from the printer driver or monitor, which means that some columns might be blank.

Manage the device cache

This section contains information about clearing, aging, and acknowledging devices.

Clearing the device cache

The first time that you run a discovery, HP Web Jetadmin finds all of the supported devices on the network and adds information about them to a device cache that is stored on the HP Web Jetadmin host machine. Whenever you run subsequent discoveries or search for devices, HP Web Jetadmin adds any new or updated information to the device cache, but it does not delete outdated information. If you remove devices from the network, the devices still appear in the device cache. Over time the device cache can become cluttered with outdated information.

Clear the entire contents of the device cache from the **Device Management > Device Cache > Reset Device Cache** page. Once you have cleared the device cache, run a discovery to create a new device cache. The new device cache only contains the current information about the network environment and supported devices.



NOTE After clearing the device cache, it is important to run a discovery to create a new device cache as soon as possible. If a device cache is not available, features such as Quick Device Find will not work.

Aging the device cache entries

Aging the device cache entries prepares the device cache for an extensive update during the next discovery. HP Web Jetadmin flags all of the data in the device cache as being old. When the next discovery runs, HP Web Jetadmin creates a new device cache that contains updated status, properties, and other information.

Age the device cache entries from the **Device Management > Device Cache > Reset Device Cache** page.

Acknowledging devices

When HP Web Jetadmin discovers new devices on the network, it adds those devices to a list displayed on the **Device Management > Device Lists > New Devices** page. When a discovery occurs, HP Web Jetadmin does not remove previously discovered new devices from this list. To remove devices from the **New Devices** page, acknowledge the devices by selecting **Acknowledge Devices** from the **Device Cache Tools** drop-down list.

You can use this feature to ensure that all devices that appear on the **New Devices** page are new to the network. For example, if you schedule a discovery for the beginning of each month, you can view the newly discovered devices and then acknowledge all the devices on the list. When the discovery runs at the beginning of the next month, all the devices listed on the **New Devices** page have been added to the network since the last discovery.



NOTE To reset the **New Devices** page to include all previously acknowledged devices, clear the acknowledged device list on the **Device Management > Device Cache > Reset Device Cache** page.

Device Application Manager

To manage device applications on an individual device or devices in a device group, go to the **Device Application Manager** page. Device applications are small applications that run on a device's embedded virtual machine and add functionality to a device. The embedded machine provides a run-time environment for executing the application and services. Managing the device applications for a device group saves time and prevents errors that might occur when you make changes to each device separately.



NOTE To use Device Application Manager, an HP Jetdirect 610n or higher must be installed in the device.

You might want to manage the device applications for only one device in a device group. For example, if a device in a device group is reset or a setting is changed, by browsing directly to the device you can use the **Device Application Manager** pages to install a device application on that device instead of changing the entire device group.

Perform the following tasks with Device Application Manager:

- View the device applications that are installed on an individual device or devices in a device group.
- View the history of all transactions that Device Application Manager has executed on the HP Web Jetadmin host machine. However, manually deleted device applications do not appear on the activity log.
- Install new device applications.
- Remove device applications.

Device Application Manager processes may take a long time to complete. While you are waiting, you can work on other tasks in HP Web Jetadmin or any other application. When the Device Application Manager processes are complete, you can retrieve the Device Application Manager job from the **Activity Log** page.

Use one of the following methods to access the **Application Manager** page:

- From a device **Device Status** page, select **Application Manager** from the drop-down list on the content toolbar. This option only appears for devices that support the Device Application Manager feature.
- From the **Device Management > Device Lists > All Devices** page, select the devices from the list. Select **Application Manager** from the **Device Tools** drop-down list.
- From the **Device Management > Device Groups > group name** page, select the devices from the list. Select **Application Manager** from the **Device Tools** drop-down list.

Viewing the activity log

The **Activity Log** page displays the history of all jobs that Device Application Manager has executed on the HP Web Jetadmin host machine. The activity log is a shared resource that manages jobs on the HP Web Jetadmin host machine. Make sure that you review the activity log before you perform any task, such as installing a device application. The tasks that are performed affect all of the Device Application Manager users on the HP Web Jetadmin host machine.



NOTE Jobs that are manually deleted do not appear on the **Activity Log** page.

Because the activity log is server based, you can troubleshoot any potential conflicts by knowing what task each user is performing. For example, if a user removes a device application that another user just installed, there is a record of each transaction.

The following information is displayed for each job:

- **Job ID** – Displays a unique identifier for the job. Click the link in the **Job ID** column to access a particular job.
- **Description** – Displays a short description of the job.
- **Owner** – Displays the name of the application plug-in that initiated the job. In most cases, this is Device Application Manager. However, other HP Web Jetadmin application plug-ins can appear in this section because Device Application Manager provides services to those application plug-ins.
- **Devices** – Displays the number of selected devices for the job.
- **State** – Displays the state of the job. The following are the possible states of the job:



NOTE Device Application Manager processes may take a long time to complete. While you are waiting, you can work on other tasks in HP Web Jetadmin or any other application. When the Device Application Manager processes are complete, you can retrieve the Device Application Manager job from the **Activity Log** page.

- **Aborted** – The job was not complete when HP Web Jetadmin or Device Application Manager was shut down.
- **Pending** – The job has been created and is queued for execution. The job is waiting for server resources to become available before starting.
- **Executing** – The job is running.



NOTE Cancel jobs in the **Pending** or **Executing** state by selecting the job check box and then clicking **Stop**.

- **Canceling** – The job is canceling. A user clicked **Stop** on the **Activity Log** page while the job was in the **Pending** or **Executing** state.
- **Ready** – A job is a two-step process. When the job is in the **Ready** state, the first step of the process is complete. The process continues until the job is in the **Completed** state.
- **Completed** – The job has completed processing.



NOTE Delete jobs when they are in the **Completed** or **Ready** state by selecting the job check box and then clicking **Delete**.

Viewing the device applications by device

The **List** page displays the selected devices, their IP address and status, and a list of all of the device applications that are installed on the devices.



NOTE Click **Refresh** until the **Job State** is **Completed**. The job may take some time before it completes. **Refresh** does not appear when the job is in the **Completed** state.

The **List** page displays the following information:

- **Job ID** – Displays a unique identifier for the job.
- **Job State** – Indicates the relationship between the device application and the Device Application Manager. The following are possible states of the job:
 - **Not Installed** – The device supports the installation of the device application, but the device application is currently not installed.
 - **Not Supported** – The device does not support the installation of the device application, or the device does not have a supported embedded Web server.
 - **Not Connected** – The device is not connected.
 - **Pending** – The job has been created and is queued for execution. The job is waiting for server resources to become available before starting.
 - **Executing** – The job is running.
 - **Canceling** – The job is canceling. A user clicked **Stop** on the **Activity Log** page while the job was in the **Pending** or **Executing** state.
 - **Completed** – The job has completed processing.
- **Device Count** – Displays the number of devices for that job. Click the number link to display a window with a list of each device model name and IP address.

Installing a device application

The **Install** page displays a list of all device applications that are available for installation on an individual device or a device in a device group. All of the applications that display on this page are on the HP Web Jetadmin host machine. If you want to upload a new or updated device application to HP Web Jetadmin, use the **Upload Device Application** feature. When the device application that you want displays on this page, you can select and install new or updated versions of the device application to a device or group of devices.



NOTE Some devices require a password before a device application can be installed. If the device application installation fails because a password is required, set a password for the device on the device or device group's **Configuration** page.

You do not need to know the correct device application version for each device. When HP Web Jetadmin is installing the device application, the Device Application Manager automatically detects the correct device application version on the HP Web Jetadmin host machine, and then installs the appropriate application to the device. For example, if you are updating ten devices, the Device Application Manager finds the correct version for each device and installs the appropriate version on each device.



NOTE If a device application has a dependant application that is not uploaded to the HP Web Jetadmin host machine, the application will not install on the device. For example, if device application “A” references another device application “B” and “B” is not on the HP Web Jetadmin host machine, “A” will not install.

The following information is on the **Install** page:

- **Job ID** – Displays a unique identifier for the job.
- **Job State** – Indicates the relationship between the device application and the Device Application Manager.
- **Device Count** – Displays the number of devices for that job. Click the number link to display a window with a list of each device model name and IP address.

Viewing the installation results

The **Installation Results** page displays the results of the installation process for an individual device or devices in a device group. Use this page to verify that Device Application Manager successfully installed the device application on an individual device or devices in a device group. If you need to view this page again, click the link in the **Job ID** column on the **Activity Log** page.

After the installation is finished, one of the following results displays under each device section:

- **Installed**
- **Not Installed**
- **Not Allowed**



NOTE If the result is **Not Allowed**, the **Command Load and Execute** check box was not selected on the **Device Configuration** page in HP Web Jetadmin.

- **Authentication Required**
- **No Loader**



NOTE If the result is **No Loader**, the loader page could not be found, or the embedded Web server is disabled.

Removing a device application

The **Remove** page displays a list of the device applications that are installed on the devices. Use the **Remove** page to remove device applications from an individual device or devices in a device group.



NOTE System device applications cannot be removed; you cannot select a shaded check box.

The **Remove** page displays the following information:

- **Job ID** – Displays a unique identifier for the job.
- **Job State** – Indicates the relationship between the device application and the Device Application Manager.
- **Device Count** – Displays the number of devices for that job. Click the number link to display a window with a list of each device model name and IP address.

Viewing the results for removing a device application

The **Remove Results** page displays the results of the removal process for the selected device or devices in a device group. Verify that Device Application Manager successfully removed the device

application from an individual device or devices in a device group. If you need to view this page again, click the link in the **Job ID** column on the **Activity Log** page.

Device test page

You can print test pages on a device from the **Device Test Page**. HP Web Jetadmin sends a SNMP request to a device or HP Jetdirect external print server to print a test page, such as a configuration page. Printing a test page this way is similar to printing a configuration page from the device control panel or pressing **Test** on an HP Jetdirect external print server. However, printing a test page remotely saves the time it takes to go to the physical location of the device. For example, if you are managing devices at a location that has multiple buildings, you can initiate the test page remotely, and then ask someone at the remote location to review the test page.

You can also upload a file on the **Device Test Page** to send to the device for printing, which is another way of testing if a device can print or troubleshooting a specific problem. For example, if users have reported an issue with printing a certain file type, you can upload that specific file or file type and send it to the device for printing.

Device reset

You can reset a device remotely on the **Device Reset** page. Resetting a device remotely saves the time it takes to go to the device location. This is particularly useful if your organization has multiple buildings or sites.

The following are the device reset options:

- **Power Cycle Printer** — This option restarts the device and reinitializes all of the device settings. This option is useful for clearing some types of errors, such as a PostScript error or a memory overrun error.
- **Reset Printer to Factory Defaults** — This option restores the device settings to the factory defaults. Restore the device factory default settings if you have changed the settings and want to start over from the default settings.

View Log

This **Device Management > Tools > View Log** page displays the history of all operations that HP Web Jetadmin has processed on the HP Web Jetadmin host machine. The following information displays on the page:

- Type of operation processed by HP Web Jetadmin
- Status of the operation
- Result of the operation

Use the information on this page to verify if an operation was processed completely and successfully. If the operation failed, click the link on the **View Log** page to view detailed results of the operation. The results page provides troubleshooting information that can help you solve the issue, and then process the operation successfully.

26 Configuring multiple devices

This section covers the following topics:

- [Multiple device configuration](#)
- [Batch device group configuration](#)
- [Import file configuration](#)

Multiple device configuration

Use the multiple device configuration feature to select several devices and change the options for all of those devices at one time. For example, you can assign the same password to several devices. The multiple device configuration feature is available on the **Device Management > Tools > Multiple Device Configuration** page. This feature is available exclusively for printers connected through HP Jetdirect print servers.

You can schedule multiple device configurations to run automatically at specified intervals and at times when additional network traffic is least likely to have a negative impact on network performance. If a device does not respond to HP Web Jetadmin during a configuration operation, HP Web Jetadmin adds the device to a list of failed configuration operations. You can specify how many times and how often HP Web Jetadmin attempts to configure devices that are on the list on the **Device Management > Management Settings > Device Configuration Settings** page. HP Web Jetadmin tries to configure each device on the list until either the specified number of retries has occurred or all devices have been configured successfully.

The devices can be on the local subnet or they can be on a remote subnet if the devices have TCP/IP addresses or IPX/SPX and TCP/IP configurations. HP Web Jetadmin uses SNMP commands to configure the options.

All of the options that you configure for the selected devices must be the same. This means that you spend a few minutes entering the information once and then apply it to all of the devices instead of entering the same information repeatedly for each device. It also ensures that redundant information is entered consistently and correctly across multiple printers connected to the network using HP Jetdirect print servers.



NOTE Create custom configuration options on the **Device Management > Tools > Custom Configuration > Labels** page.

The following are some of the options that you can configure for multiple devices:

- Subnet mask
- Default gateway
- System contact
- Device password
- Front control panel lock
- Description
- High-capacity output mode
- HP Jetdirect alerts
- Integration URL (for embedded Web servers)
- IPX SAP broadcast interval
- Protocols
- Set Community Name (security option)

- Interim page count
- Status page language

If one of the devices that you select does not support a particular option, HP Web Jetadmin still displays that option. For example, if you select one HP LaserJet 5Si printer that has a high-capacity output accessory and one that does not, HP Web Jetadmin displays the **High Capacity Output Mode** option on the **Multiple Device Configuration** page.

Use the multiple device configuration feature to assign a range of IP addresses to a device group. HP Web Jetadmin assigns the IP addresses in the order that the devices are listed. If you want more control over which addresses are assigned to particular devices, use each **Device Configuration** page to assign IP addresses.



NOTE You can use HP Web Jetadmin to configure some settings on a third-party device that is Standard Printer MIB compliant. The vendor may have an application plug-in that will allow you to configure additional configuration settings using HP Web Jetadmin. See [Third-party vendor support](#) for more information.

Two of the options that you can configure with the multiple device configuration feature—the IPX SAP broadcast interval and the protocol stacks—require some additional explanation.

IPX SAP broadcast interval

By default, HP Jetdirect print servers send out a Service Advertising Protocol (SAP) broadcast every 60 seconds. This is necessary for the HP Jetdirect print server services to be located in some Novell NetWare environments. You might want to disable HP Jetdirect SAP broadcasts on Novell networks that use Novell Distributed Print Services (NDPS) or on other networks that do not require them.

HP Printer Gateway, which is included with NDPS, has an option that disables SAP broadcasts after HP Web Jetadmin has discovered an HP Jetdirect print server on the network. If you uninstall HP Printer Gateway, another option enables SAP broadcasts. You must specifically configure the HP Web Jetadmin discovery methods to find HP Jetdirect print servers that have SAP broadcasts disabled. Setting the IPX SAP broadcast interval to zero disables SAP broadcasts.

Protocol stacks

Use the multiple device configuration feature to enable and disable the protocols that HP Jetdirect print servers use. You might want to disable the protocols that the HP Jetdirect print server is not using. For example, the AppleTalk and DLC protocols are enabled by default on HP Jetdirect print servers, but many networks do not use them. Although leaving unused protocols enabled does not cause any harm, you might realize the following benefits if you disable them:

- A slight improvement in network performance.
- An additional measure of security and control because each user must access the print services centrally instead of establishing a direct connection. For example, a Macintosh user cannot set up a direct AppleTalk connection with the printer, but the user can access centralized print services through TCP/IP or IPX/SPX.

Batch device group configuration

Use the batch device group configuration feature to configure options for all of the devices in a device group at one time. For example, you could change the name of the person to contact for all of the devices at once. The batch device group configuration feature eliminates the need to select each device and type the options, saving you time and reducing the chances of typing errors.

On the **Multiple Device Configuration** page, a drop-down list labeled **Device Model Subset** displays above the device list. The configuration options that are displayed change depending on what you select from the drop-down list. For example, if you select **All Device Models in List**, only the options that are common to all of the devices are displayed. If you select a specific model, all of the options that you can configure for that model are displayed.

If one of the devices that you select does not support a particular option, HP Web Jetadmin still displays that option. For example, if you select one HP LaserJet 5Si printer that has a high-capacity output accessory and one that does not, HP Web Jetadmin displays the **High Capacity Output Mode** option on the **Multiple Device Configuration** page.



NOTE You can use HP Web Jetadmin to configure some settings on a third-party device that is Standard Printer MIB compliant. The vendor may have an application plug-in that will allow you to configure additional configuration settings using HP Web Jetadmin. See [Third-party vendor support](#) for more information.

Import file configuration

You can import a comma-separated value (CSV) file to HP Web Jetadmin to configure the device information for any HP Web Jetadmin discovered device. If you import a CSV file, you do not need to manually enter basic device information for a device.

You can also import custom device information that displays in HP Web Jetadmin. For example, you could create a column for the device list that describes the location of a device within a building.



NOTE Before importing custom information from a CSV file, create custom labels on the **Device Management > Tools > Custom Configuration > Labels** page. The custom labels must match the custom headings in the CSV file.

NOTE To create a CSV file you can type the information into a text editor or spreadsheet document, create the document using a third-party program, or export a file from HP Web Jetadmin on the **Device Management > Device Cache > Export Parameters** page.

The CSV file must contain one of the following identifiers in the first column of the file:

- Hardware address
- IP address
- IP hostname

The second column in the CSV file must contain a port number. The heading for the port number column in the CSV file must be **Port**.

The CSV file must include a header row, such as: Hardware address,Port,Location. The file must contain at least one additional row of data. The data values must directly correspond to the headings in the header row. For example, the values 0001E636B7C1,1,Building 2 correspond to Hardware address,Port,Location.

HP Web Jetadmin searches the list of devices on the **Device Management > Device Lists > All Devices** page for devices that match the hardware address and port number in the CSV file. When HP Web Jetadmin finds the device, the value specified in the CSV file transfers to the device. If a value is not present in the CSV file, any configuration setting on the device remains the same.

The following is a list of values that can be assigned to a discovered device by importing a CSV file to HP Web Jetadmin:

- Asset number - This option identifies the device based on the accounting system for the organization.
- Description - This option describes some aspect of the device, such as a location or capabilities.
- System contact - This option specifies the name of the person who owns or is responsible for the device.
- System name - This option specifies the system name, sometimes called the hostname, for the HP Jetdirect print server.
- IPX name - This option specifies the name of a printer that is on an IPX/SPX environment.
- Locally administered addresses (LAA) - This option specifies the media access control (MAC) address on the Token Ring HP Jetdirect print server. The locally administered addresses are only supported in Token Ring HP Jetdirect print servers. The network device manufacturer originally

sets the MAC address in the device read-only memory. You can change the MAC address for most Token Ring network devices.



CAUTION To prevent potential problems, make sure that the address you assign is not already in use.

- Default Printer Copies - This option specifies the default number of copies that are printed for each print job.
- Default Number of Copies - This option specifies the default number of copies that are printed for each copy job.
- TCP Idle Timeout - This option specifies how long TCP/IP stays open when there is no traffic.
- Queue Server Job Polling Interval - This option specifies how often the HP Jetdirect print server checks the Novell print queue for jobs that are ready to print.
- Job Timeout - This option specifies the value that represents (in seconds) the maximum time of inactivity which must elapse before the print server card switches from the current network protocol to another when a normal end of job is not detected. The minimum time allowed is zero (0) seconds. The maximum time allowed is 3600 seconds.
- Set Community Name - This option specifies the Set Community Name, which is different than the device password. The Set Community Name prevents unauthorized users from using SNMP utilities to access and change device setting.
- Access Control List - This option specifies the IP addresses on your network that are allowed access to the device. The list supports up to 10 entries. If the list is empty, then any system is allowed access.

The following is an example of the CSV file format.



NOTE If there is a comma within the value, enclose the value with quotation marks. If you do not want to change a setting on a device, type the commas in the file but do not type a value.

Hardware Address,Port,IPX Name,Asset Number,Description,System Contact,System Name

0001E636B7C1,1,Color,J127,"Location:Building 2, lower",Administrator,System A

0001D877B7C2,1,,,"Location:Building 2, lower",,System A



NOTE The character limit for a line in the CSV file is 256 characters.

27 Updating firmware

This section covers the following topics:

- [Firmware update overview](#)
- [Downloading firmware](#)
- [Updating firmware](#)

Firmware update overview

The HP Web Jetadmin firmware update feature allows you to update HP Jetdirect print servers and devices with new functionality over the network. Firmware updates add new features as they become available, without the need to change hardware. You can preserve your current investment and still take advantage of the latest tools and capabilities emerging from evolving technology.



NOTE If a device does not support firmware updates, the options to update the firmware do not appear in HP Web Jetadmin.

The ability to upgrade firmware over the network is available through a separate utility called the HP Download Manager. However, this requires loading a separate utility for each operating system. HP Web Jetadmin's integrated firmware downloader streamlines the process by finding the latest firmware revision on the Web and updating the firmware on any platform. Because you access the firmware downloader through HP Web Jetadmin, you do not have to run a separate utility. You can update a single device or multiple devices in one procedure.



NOTE HP Web Jetadmin does not support third-party firmware updates.

Downloading firmware

Firmware image files must be downloaded to the HP Web Jetadmin host machine before you can update the firmware on a HP Jetdirect print server or device. You can access new firmware image files in the following ways:

- Automatically download firmware from the HP Web site to the HP Web Jetadmin host machine using HP Web Jetadmin.
- Manually download firmware from the HP Web site to the HP Web Jetadmin host machine.

Automatically downloading firmware

If there is not a firmware version on the HP Web Jetadmin host machine that is newer than the firmware that is on the HP Jetdirect print server or device, HP Web Jetadmin can connect to the HP Web site and download the latest version. HP Web Jetadmin compares this list to what is already on the host machine and places an asterisk (*) by each file that is already on the host machine. This makes it easy to see which images are new.

Before you download the firmware from the Web, make sure that the following requirements are satisfied:

- You must have access to the Internet from the machine where HP Web Jetadmin is running.
- You must specify the following settings on the **General Settings > HTTP (Web)** page:
 - Select the check box labeled **Allow HTTP Downloads**.
 - If you are using an HTTP proxy server to access the HP Web site, specify the HTTP proxy server URL and port number.
 - If you use proxy authentication, specify the user name and password.

Manually downloading firmware

If you do not want to automatically download firmware from the HP Web site, you can manually download the firmware image files. HP Jetdirect firmware images are found at the following HP Web site: http://www.hp.com/go/webjetadmin_firmware. HP Jetdirect firmware files have an *.dld file extension. Device firmware images are found on the support page for the particular device model, and usually have an *.rfu file extension.

Copy the firmware files to one of the following HP Web Jetadmin directories:

- For HP Jetdirect print server firmware files, copy the files into: <drive>:\Program Files\HP WebJetadmin\doc\plugins\hpjwja\firmware\jetdirect.
- For device firmware files, copy the files into: <drive>:\Program Files\HP WebJetadmin\doc\plugins\hpjwja\firmware\printer.

If the files are copied to the correct directory, HP Web Jetadmin recognizes the files as either HP Jetdirect print server or device firmware image files. Then, you can use HP Web Jetadmin to update firmware on a device, group of devices, or HP Jetdirect print servers.

Updating firmware

The HP Web Jetadmin host machine searches its local directories to find the latest firmware revision for the appropriate HP Jetdirect print server or device. Firmware update files contain information about which HP Jetdirect print server or device they are meant for and what revision they contain. HP Web Jetadmin evaluates this information automatically. No additional configuration is necessary to use the new firmware files.

Once a new firmware image file is located, you can use HP Web Jetadmin to update the print server, device, or group of devices. You can schedule firmware updates to run at times when the device is generally not in use. Or, you can update the device firmware immediately. If a device does not respond to HP Web Jetadmin during a batch firmware update operation, HP Web Jetadmin adds the device to a list of failed firmware updates. You can specify how many times and how often HP Web Jetadmin attempts to update devices that are on the list on the **Device Management > Management Settings > Network Settings > Firmware Upgrade** page. HP Web Jetadmin tries to update each device on the list until either the specified number of retries has occurred or all devices have been updated successfully.

The following sections contain more information about firmware updates for HP Jetdirect printer servers and for devices that HP Web Jetadmin can update.

HP Jetdirect firmware



NOTE When updating a device with downloaded HP Jetdirect firmware, the device must have an IP address other than the default (192.0.0.192) assigned to it.

Updating the firmware can correct problems and add new features, such as the following:

- DHCP support
- Novell Directory Services (NDS) support
- Direct Mode printing
- Line printer daemon (lpd) support
- Multicast/SLP support
- Multiprotocol switching

The firmware downloader uses Trivial File Transfer Protocol (TFTP) to send the firmware image to the HP Jetdirect device. This process is fully fault-tolerant. If a power outage or loss of network connection interrupts the firmware update process, you can rerun the firmware downloader and initiate the download again. This fully recovers the update because each image file contains two complete code sets: the short stack and the full firmware code image. Each code set has the utilities necessary to complete an image download. The first stage of a firmware update is to download the short stack. After the short stack is validated, the HP Jetdirect print server continues the firmware upgrade by downloading the full firmware image. After the full image is validated, the HP Jetdirect print server reboots and switches to run the new full image. If the upgrade process fails while the full image is downloading, after the power cycle, HP Jetdirect switches to run the short stack. This means that the firmware downloader can recover from a failed download because there is always a good OS in Flash memory.

Device firmware updates

Devices run firmware that controls the feature set. For example, device firmware can control how pages are formatted or the information that displays on the control panel. Take advantage of any improvements made to the firmware by updating device firmware.

HP Web Jetadmin will query the device to see if the firmware image file is compatible with the device. A results page appears, notifying you if the firmware image file was successfully sent to the device. After HP Web Jetadmin sends the firmware image file, the device automatically processes the firmware image file.



CAUTION Do *not* turn off the device, unplug the device, disconnect the networking, shut down the host machine where HP Web Jetadmin is installed, or do anything else that would interrupt the firmware downloading process. Doing so may damage the HP Jetdirect print server.



NOTE After the printer processes the firmware image file, the printer shuts down momentarily.

Section 9

Device groups

This section contains the following:

[Chapter 28, Managing device groups](#)

[Chapter 29, Managing site maps](#)

28 Managing device groups

This section covers the following topics:

- [Device groups overview](#)
- [Creating device groups](#)
- [Device group security](#)
- [Maintaining device groups](#)
- [Autogrouping for device groups](#)
- [Autoconfiguring for device groups](#)
- [Automatic alert settings for device groups](#)
- [Subgroups](#)
- [Refreshing device group status](#)

Device groups overview

A device group consists of printers, scanners, and other network devices that share particular qualities. For example, you can group devices that support the same features or require the same preventive maintenance schedules. A single device can belong to an unlimited number of device groups.

Device groups reduce the complexity of operating a large network, making it easier to find devices, check their status, troubleshoot problems, and perform preventive maintenance and other administrative tasks.

Creating device groups

Group devices in a logical way. For example, group all of the printers in a workgroup area or you could group one color printer, one monochrome printer, and one scanner.

On the device group **Properties** page, you or the device group owner can assign the following information to a device group:

- A password that prevents unauthorized users from changing or deleting the device group.
- A name and description that helps you quickly find the device group in a list.
- The name of the person who is responsible for the devices in the device group.
- A URL that users can go to for more information, such as a page on your local intranet that provides contact information or support information that you created.
- An icon that helps you quickly identify a device group on a map.

Device group security

Assign a password to a device group on the device group **Properties** page. The device group password prevents unauthorized users from changing or deleting the device group. By default, passwords are not assigned to device groups. You can also specify that the password is required when anyone opens the device group, providing an additional level of security for the device group. For example, you could create a device group for all of the devices in a specific area of the building and assign a password to that device group. Then you could assign a specific person to be responsible for those devices. Only that person could use the device group to check the status of the devices in the device group, add new devices, and update existing devices as needed without your assistance.

Once you assign a password, HP Web Jetadmin prompts users for the password when they try to make changes to the device group. If you delete the device group password, HP Web Jetadmin does not prompt users for a password when they try to make changes to the device group.



NOTE If a password is specified for a device group, a password prompt appears for all profiles, except the Admin profile.

Maintaining device groups

Once you have created a device group, you or the device group owner can perform the following tasks:

- add devices to the device group
- remove devices when they no longer belong in the device group
- delete the device group, permanently removing it from HP Web Jetadmin

Add and remove devices on the device group **Devices** page. Delete device groups from the **Device Management > Device Groups** page.

Autogrouping for device groups

The Autogroup feature allows HP Web Jetadmin to automatically add newly discovered devices to a device group if the devices meet specific criteria. This feature saves time by eliminating the need to manually add each new device to the appropriate device group. You can also quickly clean up the device group with the Autogroup feature. You might need to clean up a device group if you have created or changed the filters for the device group, or if someone has added devices that do not belong in the device group.

When HP Web Jetadmin evaluates multiple filters to decide whether a device should be included in a device group, the filters specified with the **And** operator take precedence over the filters specified with the **Or** operator. For subgroups, the first criteria always has the **And** operator because a subgroup inherits all criteria specified for the primary device group or subgroup. For example, if you specify that a primary device group must contain all devices with the word “color” in the model name and then specify that a subgroup must contain all devices with the word “laser” in the model name, then the subgroup contains all devices that have the words “color” and “laser” in the model name.



NOTE HP Web Jetadmin uses Boolean logic to evaluate the filters.

To access the Autogroup feature, go to **Device Management > Device Groups** page and select a device group. Select **Autogroup** from the **Device Group Tools** drop-down list.

Autoconfiguring for device groups

The Autoconfiguration feature allows HP Web Jetadmin to automatically configure devices that have been grouped using the Autogroup feature. This feature uses saved configuration settings files from the **Device Management > Tools > Multiple Device Configuration** page. This feature saves time by eliminating the need to manually configure autogrouped devices. For example, you can specify all the settings that you want for a device autogroup by saving the configuration settings to a file on the **Multiple Device Configuration** page. You can then apply the saved configuration settings to a device autogroup on the **Autogroup** page.



NOTE If you change a configuration settings file, all devices that are added to the autogroup are configured based on the updated configuration settings. The devices that were in the autogroup prior to the configuration settings update maintain the settings from the original configuration settings file.

To access the Autoconfiguration feature, go to **Device Management > Device Groups** page and select a device group. Select **Autogroup** from the **Device Group Tools** drop-down list.

Automatic alert settings for device groups

The Alerts Autoconfiguration feature allows HP Web Jetadmin to automatically assign alert settings to any newly discovered or added devices in a device group. You can use the default alert global settings or adjust the alert settings for a device group. This feature saves time by eliminating the need to manually configure the alert settings for newly added or discovered devices.



NOTE If you change alert settings for a device group, all devices that are added to the device group are configured based on the updated alert settings. The devices that were in the device group prior to the alert settings update maintain the previous alert settings. If a device is disconnected from the network and then discovered again, the device will receive the updated alert settings.

Subgroups

A subgroup is a device group that belongs to another device group. When you use subgroups, you can quickly add the devices in an existing device group to another device group without having to manually add each device. Add a subgroup to another device on the subgroup **Properties** page.

Use subgroups to group devices hierarchically so that large groups can contain smaller groups, which can contain even smaller groups. For example, if your company has multiple sites, you could define all of the devices located at one site as a device group called Site 1. Within Site 1, you could define subgroups that contain all of the devices located on each floor: First Floor, Second Floor, and Third Floor. Within those subgroups, you could define even smaller subgroups that contain all of the devices located in each department: Finance, Engineering, and Sales.

Refreshing device group status

The status of the devices in a device group or a subgroup changes constantly. The status of a device group reflects the status of all of the devices and subgroups in it. For example, if one of the devices in a subgroup has a critical error, the subgroup shows a critical error. The device group that the subgroup belongs to also shows a critical error.

To view device group status, display the device group **Devices** page, and then click the refresh icon on the content tool bar.



NOTE Clicking the browser **Refresh** button does *not* refresh the device group; it reloads the HP Web Jetadmin home page.

29 Managing site maps

This section covers the following topics:

- [Site maps overview](#)
- [Creating maps](#)
- [Uploading maps](#)
- [Assigning a map to a device group](#)
- [Maintaining maps](#)
- [Viewing maps](#)
- [Nesting maps](#)

Site maps overview

Site maps are a visual representation of where devices are located and their status. Maps can contain icons that represent individual devices and device groups. Click an icon to display the **Device Status** page or a list of the devices in the device group.

Maps can also contain icons for URLs, providing a support link that users can click to display special information, send questions to an offsite consultant, or contact the person responsible for the device. For example, the URL could be the email address of the person who maintains the device, such as **mailto:name@company.com**.

Site maps are particularly useful if your company is large or you need to manage devices across multiple sites, such as plant sites or branch offices. From a single, remote location, you can more efficiently find and troubleshoot devices distributed across a wider area than previous management tools have allowed.

Although site maps are a powerful feature, it is important to plan how you will use and maintain them before deciding to implement them. Site maps require more memory than other HP Web Jetadmin features. Be sure to check machine memory usage and determine if you need more memory.

Creating maps

Create the underlying map image in, or scan it into, any graphics program that can save files in GIF format. Once created, upload the map to HP Web Jetadmin, assign the map to a device group, and add icons representing individual devices, device groups, or URLs to the map. As you move devices, move their icons to new locations on the map.

If you do not already have an online map or image of your site, you have several options. Work with your IT staff or other network-knowledgeable personnel to create a map or hire a consultant to develop one. Carefully consider whether the value of having site maps justifies the time and expense of creating them. For example, large organizations, organizations distributed across multiple sites, and organizations that outsource help desk functionality might benefit greatly from using site maps. After you create a map, either you or a consultant can maintain it, depending on the number and frequency of updates required. For example, when you move a device to a new location, create new device groups, or update support links.

Uploading maps

Before you can assign a map to a device group, you must upload a map that you created in a graphics package and saved as a GIF file. Upload maps on the device group **Map** page.



NOTE If you have problems uploading a map file, make sure that your browser supports the ability to upload files. If it does, disable the proxy server in your browser and try uploading the map file again.

Assigning a map to a device group

Once you have uploaded a map to HP Web Jetadmin, assign that map to a device group on the device group **Map** page.

By default, HP Web Jetadmin displays a site map when someone displays a device group that you have assigned a site map to. If a site map is not available for a device group, HP Web Jetadmin displays a list of the devices in the device group.

Maintaining maps

Once you have assigned a map to a device group, you can perform the following tasks on the device group **Map** page:

- Add an icon for an individual device or a device group to a map. Users can click the icon to view the **Device Status** page or a list of the devices in the device group.
- Add an icon for a URL, providing a support link that users can click to display special information, send questions to an offsite consultant, or contact the person responsible for the device. For example, you can add a URL containing the email address of the person who maintains the mapped area, such as **mailto:name@company.com**.
- As you move devices to new locations, move the device icons on the map to the new locations.
- When devices are no longer in service, remove the device icons from the map.

Viewing maps

Because the icons on a site map are color coded to show the status of the device or device group, you only need to take a quick look at the map to know which devices or device groups need attention and which needs are most critical.

- No border – The device is online and ready. For a device group, all of the devices are ready.
- Red – The printer has stopped and user intervention is required before it can continue. For a device group, at least one of the printers has stopped.
- Yellow – The printer has an error condition, such as toner low, but the printer can still print. For a device group, at least one of the printers has an error condition.



NOTE If you click an icon for a URL that is maintained on a secured machine, HP Web Jetadmin might prompt you for a user name and password before you can view the URL.

Nesting maps

Use subgroups to nest maps within each other. You can then navigate through the nested subgroups to display the location of a specific device. For example, you could have a site map that shows multiple buildings. When you open the device group for a building, HP Web Jetadmin displays the floors in the building. When you open the device group for a floor, HP Web Jetadmin displays the departments on that floor. When you open the device group for a department, HP Web Jetadmin displays a floor plan that shows the location of each device in that department.

The following steps illustrate how you to create subgroups for the buildings, floors, and departments and then nest those maps:

1. Define a device group called Building 1. Assign a map to it, but do not add any devices to it.
2. Define a device group for each floor: First Floor, Second Floor, and Third Floor. Assign a map to each one, but do not add any devices to them.
3. Define a device group for each department: Finance, Engineering, and Sales. Assign a map to each one, but do not add any devices to them.
4. Add First Floor, Second Floor, and Third Floor as subgroups to Building 1. On the map for Building 1, add icons for the First Floor, Second Floor, and Third Floor device groups.
5. Add the device groups for all of the departments on the first floor as subgroups to First Floor. On the map for First Floor, add icons for the department subgroups.
6. Add the device groups for all of the departments on the second floor as subgroups to Second Floor. On the map for Second Floor, add icons for the department subgroups.
7. Add the device groups for all of the departments on the third floor as subgroups to Third Floor. On the map for Third Floor, add icons for the department subgroups.

To display a detailed map of the Sales department, which is on the second floor of Building 1, display the map for Building 1, click the icon for Second Floor, and then click the icon for Sales.

Section 10

Appendices

This section contains the following:

[Appendix A, Troubleshooting](#)

[Appendix B, Frequently asked questions](#)

A Troubleshooting

This section covers the following topics:


- [Installation](#)
- [Windows printer drivers](#)
- [Operating systems](#)
- [Web browsers](#)
- [Security](#)
- [HP Jetdirect print server security](#)
- [SMTP mail host](#)
- [HTTP settings](#)
- [Discovery methods](#)
- [Print queues](#)
- [NDS configuration](#)
- [Devices](#)
- [Site maps](#)

Installation

Issue	Solution
HP Web Jetadmin will not install properly.	<ul style="list-style-type: none">● Make sure that you have administrator rights.● Make sure there is at least 100 MB of free disk space on the HP Web Jetadmin host machine.
When you accessed HP Web Jetadmin from your browser, you received an error message indicating that the browser could not find the proxy server.	<p>Set up your browser so that it does not use a proxy server for the machine where HP Web Jetadmin is installed.</p> <p>For Internet Explorer, the proxy server settings are on the Connections and Advanced tabs of Internet Options.</p> <p>For Firefox, click Tools, and then click Options. Click General. In the Connection section, click Connection Settings.</p>
HP Web Jetadmin does not start when you type its URL in the Web browser.	<ul style="list-style-type: none">● Make sure that the URL is correct, including the port number.● Make sure that you are using a supported Web browser.● Make sure that you have configured HP Web Jetadmin to allow access.● Make sure that the HP Web Jetadmin service is running. If the service is not running, restart it. If the HP Web Jetadmin service is running, restart the system.● Set up your browser so that it does not use a proxy server for the machine where HP Web Jetadmin is installed. See the previous issue in this section for more information.● Start HP Web Jetadmin from the HP Web Jetadmin host machine, and then start HP Web Jetadmin from a remote machine. If you can start HP Web Jetadmin from the host machine, but you cannot start HP Web Jetadmin from a remote machine, you may have a network issue that is preventing communication between the browser and the HP Web Jetadmin host machine.

Issue	Solution
<p>HP Web Jetadmin performance is very slow.</p>	<ul style="list-style-type: none"> ● HP Web Jetadmin is CPU-intensive. Use a PC with more processor speed. Also, the amount of random access memory (RAM) in the server has some effect on the speed of HP Web Jetadmin. It may be necessary to increase the amount of RAM in the computer. HP recommends at least 512 MB of RAM. ● If HP Web Jetadmin is running on the same machine as an existing Web server or other network services, try running HP Web Jetadmin on a separate machine. ● If you are running the front end (browser) and HP Web Jetadmin back end (server) on the same machine, try running the browser on a separate machine. ● Accessing HP Web Jetadmin through a proxy server can cause the software to run slowly. To increase performance, set up your browser so that it does not use a proxy server for the machine where HP Web Jetadmin is installed. See the previous issue in this section for more information.
<p>You can use an IP address to start HP Web Jetadmin, but you cannot use the hostname.</p>	<p>This indicates a name resolution problem. Windows 95 and Windows NT machines that are on the same subnet can resolve hostnames (machine names) without any additional services running. If these machines are on a different subnet than the machine where HP Web Jetadmin is installed, the Microsoft Windows Internet Name Service (WINS) or Domain Name Services (DNS) is required to resolve the hostname to an IP address. Clients other than Windows 95 or Windows NT require DNS to resolve the hostname, regardless of whether routing is involved.</p>

Windows printer drivers

Issue	Solution
HP Jetdirect-connected printers are not printing the jobs that are sent to them.	<p>Some HP printers, referred to as GDI or host-based printers, are designed strictly for the Windows environment. The GDI printer driver that resides on the computer interprets and formats the information to be printed before sending it to the printer. This means that GDI printers expect to receive a fully-formatted data stream. Non-GDI printers expect the computer to send PCL or PostScript data, which the printer then interprets and formats. When non-GDI printers receive a formatted data stream, they discard it as corrupted print data.</p> <p>HP Jetdirect EX print servers are incompatible with GDI printers. GDI printers must be connected to a host or port rather than an HP Jetdirect print server, which means that GDI printers are not network compatible.</p>
	<p> NOTE HP Jetdirect accepts the data regardless of how the data stream is formatted.</p>
	<p>Do not use HP Jetdirect print servers with HP GDI printers.</p> <p>In addition, do not use HP Jetdirect print servers with GDI printers that other vendors manufacture.</p>

Operating systems

Issue	Solution
HP Web Jetadmin does not install on Linux properly.	<ul style="list-style-type: none">● Make sure that you are logged on as the root user.● Check the directory permissions as well as the ownership.● Check for disk space on the appropriate volumes.● Make sure that the operating system is supported. HP Web Jetadmin only works with specific kernel versions and Linux libraries. See the HP Web Jetadmin Readme file for more information.
When creating print queues, you experience problems with Windows NT domain permission.	When creating print queues, credentials must be provided that have local administrator membership on the remote host either through a direct listing in that local group or a referenced listing from some other domain/local group. Once an initial queue is created, credentials must be provided that have local power-user membership on the remote host.

Web browsers

Issue	Solution
After setting HP Web Jetadmin encryption level to high, you can no longer browse to HP Web Jetadmin.	<p>The browser that you are using might not support 128-bit encryption. The 128-bit encryption is not supported in all countries/regions. Download and install the high-encryption package for the browser.</p> <p>The appropriate SSL versions might not be activated in the browser that you are using. Perform one of the following procedures:</p> <ul style="list-style-type: none">• For Internet Explorer, on the Tools menu, click Internet Options. Click the Advanced tab. In the Security section, make sure that the Use SSL 2.0, Use SSL 3.0, and Use TLS 1.0 options are selected.• For Firefox, click Tools, and then click Options. Click Advanced. In the Security section, make sure that the Use SSL 2.0, Use SSL 3.0, and Use TLS 1.0 options are selected.

Security

Issue	Solution
The IP address allowed to access HP Web Jetadmin was defined incorrectly.	HP Web Jetadmin does not allow you to deny access to the IP address of the machine where it is installed. Using the browser on the machine where HP Web Jetadmin is installed, access the General Settings > HTTP (Web) page and specify the correct IP address.


HP Jetdirect print server security

For more information about HP Jetdirect print server security, see document bpj05999 on the HP Web site.

SMTP mail host

Issue	Solution
While configuring the SMTP mail host for HP Web Jetadmin alerts, you received an error message indicating that the SMTP mail host could not be verified.	Verify that the specified mail host is an SMTP mail host. Use Telnet to connect to the host at the appropriate port. If the connection is successful and the first three characters are 220, the machine is an SMTP host. If the connection fails, the host is not running an SMTP server.

HTTP settings

Issue	Solution
The HTTP port number changed and users cannot access HP Web Jetadmin.	The HTTP or HTTPS port numbers display in the HP Web Jetadmin URL. Notify HP Web Jetadmin users that the HP Web Jetadmin URL has changed.  NOTE The HTTP port number setting is located on the General Settings > HTTP (Web) page. For the HTTPS port number setting, go to the General Settings > Security > SSL/TLS page, and then click Change SSL/TLS Port .

Discovery methods

This section covers the following topics:

- [General discovery problems](#)
- [Local Broadcast discoveries](#)
- [Multicast/SLP discovery](#)
- [ARP Table discovery](#)
- [Specified Addresses discovery](#)
- [IP Range discovery](#)
- [Remote Discovery Agent \(RDA\) discovery](#)
- [NetWare Bindery discovery](#)
- [NetWare File Server Login discovery](#)
- [Listen for New Devices discoveries](#)

General discovery problems

Issue	Solution
HP Web Jetadmin did not discover a known printer on the network.	<ul style="list-style-type: none">● Make sure that the printer is turned on. If you ran one of the broadcast discovery methods, try running a Specified Addresses discovery to search for the printer IP address.● Use the Quick Device Find feature to discover the device.● If HP Web Jetadmin still cannot find the printer, the printer might have a network communications problem. Print the configuration (or self-test) page for the printer or the external HP Jetdirect print server and check the protocol status, I/O status, and network statistics.

Local Broadcast discoveries

Issue	Solution
HP Web Jetadmin did not discover some of the network devices.	<p>Delivery of the SNMP request or the response is not guaranteed. SNMP is a connectionless protocol. If your network is busy or has many nodes, HP Web Jetadmin might not discover some devices.</p> <ul style="list-style-type: none">● Try running the discovery when there is less network traffic.● Run another discovery method, such as the IP Range discovery. Make sure to set up the discovery to search the IP range that represents the IP subnet.
(TCP/IP only) HP Web Jetadmin did not find devices that were on a remote subnet. Routers might not be passing broadcast packets.	Make sure that the devices are on the same subnet. If they are not on the same subnet, run an IP Range, a Specified Addresses, an ARP Table, or an RDA discovery to find the remote devices.


Issue	Solution
(TCP/IP only) An IP addressing problem, such as duplicate addresses or a bad subnet mask, might exist.	<ul style="list-style-type: none"> Make sure that the addressing is correct. Make sure that you do not have duplicate IP addresses. Devices with duplicate IP addresses cannot communicate on the network. Use ping and Telnet to test and configure the IP parameters, such as IP address, default gateway, and subnet mask.
(IPX/SPX only) HP Web Jetadmin did not find remote devices because the routers filtered the broadcast traffic.	Change the router filters, run a NetWare Bindery or RDA discovery, or install a copy of HP Web Jetadmin on each network segment.
(IPX/SPX only) The routers are not passing IPX/SPX between networks. IPX/SPX is local only.	<ul style="list-style-type: none"> Install IPX/SPX on the network link or install a copy of HP Web Jetadmin on each network segment. Run an IP Broadcast or IP Range discovery.
(IPX/SPX only) SAP broadcasts are inappropriately filtered.	Change the router filters, run a NetWare Bindery discovery, or install a copy of HP Web Jetadmin on each network segment.
(IPX/SPX only) HP Web Jetadmin did not find devices that might be on a remote subnet because the routers filtered the broadcast traffic, the link between the networks was not IPX/SPX, or SAP broadcasts were filtered.	Run a Specified Addresses or RDA discovery to add the remote IPX addresses so that HP Web Jetadmin can discover the devices.

Multicast/SLP discovery

Issue	Solution
HP Web Jetadmin did not discover certain devices on the network.	Make sure that the devices support multicast broadcasts. If the devices do not, try a different discovery method. See Planning a discovery strategy for guidelines on choosing the appropriate discovery method for your network.
HP Web Jetadmin did not discover devices on remote subnets.	Make sure that the discovery is configured for the appropriate number of router hops. The default is 4.

ARP Table discovery

Issue	Solution
HP Web Jetadmin did not discover newly installed devices.	<ul style="list-style-type: none"> Run an IP Range discovery to look for specific addresses or use the Quick Device Find feature to search for a single device. Use the RDA discovery to discover devices that are not yet configured with an IP address.

Issue	Solution
Devices that you recently disconnected still display in the device cache.	<ul style="list-style-type: none"> Clear the device cache and run a new discovery. Remove the devices by selecting the device, and then select Delete Device from the Device Cache Tools drop-down list.
HP Web Jetadmin did not find NetWare or IPX-only printers.	<p>The ARP Table discovery is IP-print dependant. If the printers are not IP active, the printers will not be in the ARP table or the device cache.</p> <p>Use a discovery method that will find devices that are not enabled, such as the IPX Broadcast discovery.</p> <p> NOTE To use the IPX Broadcast discovery, install the protocol on the HP Web Jetadmin host machine. Devices on IPX or NetWare networks may have the IP protocol disabled. Make sure that the HP Web Jetadmin host machine has the IPX/SPX protocol installed and also that the network will pass this protocol so that the device can be discovered.</p>

Specified Addresses discovery

Issue	Solution
The hosts.txt file might contain incorrect addresses.	Make sure that the addresses are correct.

IP Range discovery

Issue	Solution
No devices are discovered.	Make sure that the IP ranges set for the discovery accurately reflect the network that is being scanned.
The IP Range discovery is very slow.	The IP Range discovery might be set up to scan large numbers of IP addresses that might not be in use, causing the discovery to take some time. Make sure that the IP ranges only reflect active portions or segments of the IP network.

Remote Discovery Agent (RDA) discovery

Issue	Solution
RDA was not installed on the remote system.	<ul style="list-style-type: none">• Make sure that the user credentials you supplied during the RDA installation have Administrator rights on the remote system.• Makes sure that ADMIN\$ share is enabled on the node where you are installing RDA.• Make sure there is not an actively installed copy of the HP Web Jetadmin software installed on the network, other than the copy installed on the HP Web Jetadmin host machine. Use the Other Installations of HP Web Jetadmin discovery to locate unauthorized or unnecessary copies of HP Web Jetadmin.
HP Web Jetadmin did not discover devices on the subnet where you installed RDA.	<ul style="list-style-type: none">• Make sure that RDA is running on the system on that remote subnet. To do this in Windows, select Start, Control Panel, and Services. To do this in Linux, use a command such as the following: <pre>ps -aux grep "rda"</pre>• Make sure that the printers can communicate through IP. RDA is an IP-only discovery method.• Make sure that the node where RDA is running is turned on during the discovery.

NetWare Bindery discovery


Issue	Solution
HP Web Jetadmin did not discover certain devices on the network.	<ul style="list-style-type: none">• Make sure that the NetWare Bindery discovery is querying the NetWare servers on the subnet where the undiscovered devices are installed.• Make sure that SAP broadcasts are not disabled in the HP Jetdirect print servers. If they are disabled, try running a different discovery method. See Planning a discovery strategy for guidelines on choosing the appropriate discovery method for your network.

NetWare File Server Login discovery

Issue	Solution
A new NetWare file server could not be added to the Selected File Servers .	Make sure that the credentials you supplied have Admin equivalence on the NetWare file server.
HP Web Jetadmin did not discover NDPS or IP-only printers.	The NetWare File Server Login discovery is dependent on the HP Jetdirect print server queue server login to the NetWare file server. Run a different discovery method. See Planning a discovery strategy for guidelines on choosing the appropriate discovery method for the network.

Listen for New Devices discoveries

Issue	Solution
HP Web Jetadmin did not discover devices on remote subnets.	Routers might not be passing BOOTP, SLP, or SAP packet types. Run a different discovery method. See Planning a discovery strategy for guidelines on choosing the appropriate discovery method for your network.
HP Web Jetadmin did not discover devices that were already installed and configured.	Devices that are already installed and configured do not generate the initial BOOTP, SLP, or SAP packet types. Run a different discovery method with the Listen for New Devices discovery. See Planning a discovery strategy for guidelines on choosing the appropriate discovery method for your network.

Issue	Solution
On Linux platforms, HP Web Jetadmin cannot listen to the BOOTP port.	<ul style="list-style-type: none"> ● Make sure that HP Web Jetadmin is running with root access on the Linux platform. ● HP Web Jetadmin might not be able to monitor the BOOTP port on a Linux system that is an active BOOTP server. Check the system settings and run a different discovery method if needed. See Planning a discovery strategy for guidelines on choosing the appropriate discovery method for your network.
HP Web Jetadmin could not discover devices by listening for BOOTP requests because the BOOTP process did not start.	<p>This problem occurs when the BOOTP process tries to start after you have installed HP Web Jetadmin on the same host machine. The Listen for New Devices discoveries, which are enabled by default, might interfere with enabling the BOOTP process on the host machine.</p> <p>If you install HP Web Jetadmin before you enable the BOOTP process, HP Web Jetadmin binds to the BOOTP port (port 67). When you try to start BOOTP, the BOOTP port is unavailable and the process cannot start. You can solve this problem with one of the following workarounds.</p> <p>Workaround 1: If you implement the BOOTP service on the same host machine as HP Web Jetadmin, make sure that HP Web Jetadmin is installed or started after you start the BOOTP service. This prevents HP Web Jetadmin from binding to the BOOTP port.</p> <p>Workaround 2: If you have already installed HP Web Jetadmin, enable the BOOTP process to start at boot up. Restart the host machine. Because the BOOTP process has a higher priority than HP Web Jetadmin, the BOOTP process starts and binds to the BOOTP port before HP Web Jetadmin.</p> <p>If you cannot restart the host machine for some reason, manually stop and restart each process in the following order:</p> <ol style="list-style-type: none"> 1. Stop the BOOTP process. 2. Stop the HP Web Jetadmin process. 3. Restart the BOOTP process. 4. Restart the HP Web Jetadmin process. <hr/> <p> NOTE When the BOOTP process is running, HP Web Jetadmin cannot discover new devices using the BOOTP method. To avoid future BOOTP conflicts, disable the Listen for New Devices discovery methods in HP Web Jetadmin, restart HP Web Jetadmin, and use one of the workarounds.</p>

Print queues

Issue	Solution
A print queue could not be created on a Linux machine.	<p data-bbox="855 300 1445 380">Enable the Rexec service on the HP Jetdirect print server where you want to create the print queue. To enable the Rexec service, perform the following steps:</p> <ol data-bbox="855 405 1445 457" style="list-style-type: none"><li data-bbox="855 405 1445 457">1. Make sure that you have the following line in the <code>/etc/inetd.conf</code> file and make sure that it is not commented out: <pre data-bbox="903 478 1394 531">exec stream tcp nowait root /usr/sbin/tcpd in.rexecd</pre><li data-bbox="855 556 1445 609">2. Comment out (or delete) the following line from the <code>/etc/pam.d/rexec</code> file: <pre data-bbox="903 630 1278 682">auth required /lib/security/pam_securetty.so</pre><li data-bbox="855 707 1445 739">3. Restart the <code>inetd</code> service: <pre data-bbox="903 760 1241 783">/etc/rc.d/init.d/inet stop</pre><pre data-bbox="903 810 1254 833">/etc/rc.d/init.d/inet start</pre>
When you use HP Web Jetadmin Standard TCP/IP Port Monitor, print jobs leave the print queue, but nothing prints.	<ul data-bbox="855 861 1445 1302" style="list-style-type: none"><li data-bbox="855 861 1445 1050">● In the Properties of the Printers folder, check the name of the port. If it is a hostname instead of a TCP/IP address, enter the <code>nslookup hostname</code> command. You should receive a response that has the correct corresponding TCP/IP address. Then ping the hostname. If it fails or an error occurs, delete the port and create the print queue again using the HP Jetdirect print server TCP/IP address.<li data-bbox="855 1075 1445 1148">● PostScript printer drivers might encounter an error, but the printer does not print the PostScript error message. Use a generic printer driver to print a test page.<li data-bbox="855 1173 1445 1226">● Check for duplicate TCP/IP addresses on the HP Jetdirect Configuration page.<li data-bbox="855 1251 1445 1302">● Check the idle time-out interval on the HP Jetdirect Configuration page.


Issue	Solution
While you were creating a Windows print queue on a server that has Novell NetWare client installed, you clicked More Drivers but the list of printer drivers did not change.	<p>To allow enumeration of printer drivers from other systems, reorder the print providers on the HP Jetdirect print server where you are creating the print queue. To reorder the print providers, perform the following steps:</p> <ol style="list-style-type: none"><li data-bbox="879 359 1430 407">1. On the host machine where HP Web Jetadmin is installed, go to Network Neighborhood Properties.<li data-bbox="879 434 1145 459">2. Click the Services tab.<li data-bbox="879 487 1217 512">3. Click Network Access Order.<li data-bbox="879 539 1449 583">4. In the Print Providers section, change the order of the list so that LanMan Print Services appears first.
When creating a print queue on an HP-UX system, you received an error indicating that the operating system is not supported.	<p>On the machine where you are creating the print queue, type <code>uname -a</code> The operating system should be HP-UX 11.x.</p> <p>At the command prompt, type <code>ll /bin</code> This command should return something similar to the following:</p> <pre data-bbox="879 768 1382 793">lr-xr-xr-t 1 root sys 8 Dec 20 15:26 /bin -> /usr/bin</pre> <p>In most cases, <code>/bin</code> is a symbolic link to the <code>/usr/bin</code> directory. A default installation of HP-UX 11.x should contain this link. If <code>/bin</code> does not exist or it is not linked to the <code>/usr/bin</code> directory, HP Web Jetadmin fails its operating system check.</p>

NDS configuration

Issue	Solution
The NetWare print objects could not be created.	If you are configuring print services in a Novell NetWare environment, you must have NDS create rights for the container where you are creating the print objects. Use the NetWare Administrator utility to determine if the specified user has the appropriate NDS rights.
After setting up the Novell configuration for the HP Jetdirect print server, the HP Jetdirect print server does not service print jobs that arrive in the print queue.	For more information about the NetWare connections, display the Device Diagnostics page. HP Web Jetadmin displays information indicating connection problems, such as the inability to resolve the HP Jetdirect print server name. The Novell Status section on the HP Jetdirect print server test page also shows any NDS errors.

Devices

Issue	Solution
HP Web Jetadmin does not display some of the information that is available for devices on your network.	<p>The information that HP Web Jetadmin displays on the Device Status page depends on the following factors:</p> <ul style="list-style-type: none">• The device feature set• The information that the device Standard Printer MIB supports (this is important for third-party devices)• The device firmware revision <p>Check to see if the device feature set supports the information that you want to display. If the feature set does not, try updating the firmware.</p> <p>For third-party devices, contact the vendor to see if there is a third-party device plug-in. A third-party device plug-in adds functionality to HP Web Jetadmin. See Third-party vendor support for more information.</p>
When using an older version of HP Web Jetadmin to manage HP Jetdirect print servers, a Dr. Watson error is generated on the HP Web Jetadmin host machine.	Update to the latest version of HP Web Jetadmin.

Issue	Solution
<p>When changing the HP Jetdirect print server configuration options after configuring the Set Community Name, you receive an error message indicating that the Set Community Name is invalid. After typing the new Set Community Name, you receive another error message indicating that the Set Community Name is invalid.</p>	<p>Make sure that the Set Community Name does not end with a number. If it does, change the Set Community Name to one that does not end with a number. Change the HP Jetdirect print servers configuration options again.</p>
<p>While downloading HP Jetdirect firmware from the HP Web site, you received an error message indicating that the download failed.</p>	<p>On the General Settings > HTTP (Web) page, make sure that the check box labeled Allow HTTP Downloads is selected.</p> <p>If the LAN has a proxy server, make sure that the proxy server settings are correct. Match the proxy server settings to the settings in the browser.</p> <p>If these settings are correct, the following steps provide a workaround:</p> <hr/> <p> NOTE Access to the HP Jetdirect install file system is required for the following workaround.</p> <hr/> <ol style="list-style-type: none"> 1. In your browser, go to http://www.hp.com/go/wja_firmware. 2. Click the link labeled Self extracting file with all firmware images. Follow the instructions to populate HP Web Jetadmin with a complete set of firmware images. <p>-or-</p> <p>Click the link labeled How to download the HP Jetdirect individual firmware image files. Follow the instructions to populate HP Web Jetadmin with a complete set of firmware images.</p> <p>If you cannot download the firmware revisions using the workaround, there are issues with your network (for example, a firewall) that you need to resolve. Make sure that the files are saved in their entirety to the correct HP Web Jetadmin directory. Look in the firmware.glf file for the correct file size.</p>

Site maps

Issue	Solution
HP Web Jetadmin performance is very slow after you upload a site map.	HP Web Jetadmin is CPU-intensive. Use a PC with more processor speed. Also, the amount of random access memory (RAM) in the server has some effect on the speed of HP Web Jetadmin. It may be necessary to increase the amount of RAM in the computer. HP recommends at least 512 MB of RAM.

B Frequently asked questions

This section covers the following topics:



- [Frequently asked questions](#)



Frequently asked questions


Question	Answer
What are White Papers, and where are they located?	White Papers are additional information and instructions about HP Web Jetadmin features, such as alerts or security information. White Papers are available at http://www.hp.com/go/wja_whitepapers . Updates to existing White Papers and new White Papers are added on a regular basis.
Is training available for HP Web Jetadmin?	Yes. Go to http://www.hp.com/go/webjetadmin . Click the HP Web Jetadmin training link that displays in the left column.
Is online help available?	<p>HP Web Jetadmin help has been enhanced. The help provides a hypertext index so you can browse the help topics and glossary of key terms used in HP Web Jetadmin. To access the help from within HP Web Jetadmin, expand Device Management folder, expand the Help folder, and click HP Web Jetadmin.</p> <p>You can also download the help in PDF format to print the complete help text. To download the PDF, go to http://www.hp.com/go/webjetadmin_software, scroll to the self-help resources section, and click the manuals link.</p> <p>HP Web Jetadmin context help has also been enhanced. To view a What, Why, and How synopsis for a page, topic, task, or option, click the help icon (blue question mark).</p>
How can I provide feedback about HP Web Jetadmin?	<p>A Feedback page is now available within HP Web Jetadmin. This page provides a one-way communication path for you to send feedback directly to HP. The Feedback page is not intended to be a replacement for customer-escalation issues that require a follow up or call back. If you have an issue that requires customer support, please contact the HP Customer Care Technical Center using one of the methods described on the following Web site:</p> <p>http://www.hp.com. Click Contact HP.</p> <p>To access the Feedback page, expand the Device Management folder, expand the Help folder, expand the HP Web Jetadmin folder, and click Feedback.</p>
Why is HP Web Jetadmin performance very slow?	HP Web Jetadmin is CPU-intensive. Use a PC with more processor speed. Also, the amount of random access memory (RAM) in the server has some effect on the speed of HP Web Jetadmin. It may be necessary to increase the amount of RAM in your computer. HP recommends at least 512 MB of RAM.
Is Microsoft Java Virtual Machine (JVM) supported?	No. Since Microsoft no longer supports JVM, HP Web Jetadmin does not support JVM. For HP Web Jetadmin, use Sun's Java Runtime Environment (JRE) 1.5.1. The Sun JRE is available at http://www.java.com .
What version of Internet Explorer is supported?	Only Microsoft Internet Explorer 6.0 is supported when browsing from a Windows-based PC. Netscape is not supported.
What browsers are supported when browsing from a Linux-based PC?	Only Firefox 1.5 is supported when browsing from a Linux-based PC. Netscape is not supported.
What version of Apache Web Server does HP Web Jetadmin use?	HP Web Jetadmin uses Apache Web Server 2.0.54. This version fixes various security and non-security related issues.


Question	Answer
<p>Why is NTLM not working with HP Web Jetadmin and Windows Server 2003?</p>	<p>The Medium security setting in Internet Explorer when using Windows Server 2003 is different than medium security in previous versions of Windows. To use NTLM in Internet Explorer with Windows Server 2003, perform the following procedure.</p> <ol style="list-style-type: none"> 1. Open Internet Explorer. 2. Click Tools and Internet Options. 3. Click the Security tab. 4. Click Custom Level. 5. Under User Authentication, select Automatic logon with current username and password. 6. Click OK. 7. Click Yes. 8. Click OK.
<p>How do I disable the NTLM Authentication prompt for logon credentials in HP Web Jetadmin when using Windows Server 2003?</p>	<p>To disable the prompt for logon credentials, perform the following task:</p> <ol style="list-style-type: none"> 1. Click Start, Settings, and then Control Panel. 2. Click Add/Remove Windows Components. 3. Use the Add or Remove Programs Wizard to remove the Internet Explorer Enhanced Security Configuration module.
<p>Are the HP Web Jetadmin 7.8 NT Domain Authentication features supported with Kerberos in MS Active Directory Domains?</p>	<p>Yes.</p>
<p>Why does HP Web Jetadmin fail to find devices through IP Broadcast or Multicast/SLP discoveries?</p>	<p>Updates have been implemented in HP Web Jetadmin 7.5 and later that address the impact of enabling Microsoft's Internet Connection Firewall. IP Broadcast discoveries using 7.5 and earlier versions of HP Web Jetadmin will fail to find devices if the Microsoft firewall feature is enabled. Microsoft recommends enabling the firewall feature and will likely enable it by default for future operating system releases.</p> <p>In earlier versions of HP Web Jetadmin (prior to version 7.5), random source ports were used for broadcast discovery and responding hosts communicated back through these random ports. Because Microsoft Internet Connection Firewall blocks all broadcast traffic, including responses to broadcasts, responses to random ports will fail.</p> <p>To facilitate broadcast discoveries, such as IP Broadcast and Multicast/SLP, HP Web Jetadmin has been changed to source through well-known, static ports. For an IP Broadcast, HP Web Jetadmin uses the well-known SNMP port, listening on port number 161 for responses to the broadcast. If IP Broadcast discoveries are desired and Microsoft Internet Connection Firewall is installed, unblock port number 161 from within the firewall settings. HP Web Jetadmin 7.6 uses the following ports for broadcast discoveries:</p>

Question	Answer
	<p>IP Broadcast: Open UDP Port 161 on the HP Web Jetadmin server.</p> <p>Multicast/SLP: Open UDP Port 427 on the HP Web Jetadmin server.</p> <p>Other installations of HP Web Jetadmin: Open UDP Port 8000 on the HP Web Jetadmin server.</p> <p>BOOTP: Open UDP Port 67 on the HP Web Jetadmin server.</p> <hr/> <p> NOTE For information on how to enable ports, see Microsoft Help for Internet Connection Firewall.</p>
<p>If I have Service Pack 3 or higher installed, why does the HP Web Jetadmin installation process fail with the error message HP Web Jetadmin 7.0 requires Windows NT 4.0 Service Pack 3 or higher?</p>	<p>Typically, this means that the Service Pack was a release candidate or hotfix. To find out which Service Pack is installed, use regedit or regedt32 to check the following key in the Registry:</p> <hr/> <p> CAUTION Do not modify the Registry.</p> <p>\HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\Current Version\CSDVersion</p> <p>The value for this registry key should be Service Pack x, where x is the Service Pack version number. If the value includes the RC number, for example Service Pack 4, RC 1.2, the HP Web Jetadmin installation will fail. Download and install the latest Service Pack from Microsoft, or reinstall the released version of the Service Pack that you have installed. See Microsoft article Q222507 for more information.</p>
<p>When using a non-English version of HP Web Jetadmin, why is English displayed on some pages?</p>	<p>HP Web Jetadmin always tries to display consistent languages. However, each device that HP Web Jetadmin manages might support a different set of languages. As a result, HP Web Jetadmin might display different languages on the same page.</p> <p>For example, HP Web Jetadmin might display the basic user interface on a device Device Status page in Dutch. If that particular device does not support Dutch, HP Web Jetadmin might display the device-specific information on the Device Status page in English instead of Dutch.</p> <p>HP Web Jetadmin might also display English in the following situations:</p> <ul style="list-style-type: none"> ● When you display an embedded Web page for a device ● When you create a print queue from a Windows NT 4.0 or Windows 2000 machine on an HP-UX, Linux, or Solaris machine that does not support the language that is being used on the Windows machine
<p>How do I download HP Jetdirect firmware images from the Web with a secure proxy server setup?</p>	<p>HP Web Jetadmin supports basic proxy authentication. However, if additional authentication is required for Web access, you can manually download the firmware images from the following Web site:</p> <p>http://www.hp.com/go/wja_firmware</p>

Question	Answer
	Once you download the firmware images, you can use the Intelligent Update feature to upload the files and install them.
How do I delete devices from HP Web Jetadmin device lists?	From any device list, select the devices that you want to delete, and click Delete Device .
	 <p>NOTE To select multiple devices, you can use the Shift or Ctrl key.</p>
Does HP Web Jetadmin have a Remote Control Panel function?	Yes. Not only is the printer control panel displayed within HP Web Jetadmin, but all of the buttons on the control panel are functional within HP Web Jetadmin.
	<p>To access the Remote Control Panel feature, perform the following steps:</p> <ol style="list-style-type: none"> 1. From any device list, double-click a device. 2. On the Device Status page, select Configuration from the drop-down list on the content toolbar. 3. On the Device Configuration page, click Remote Control Panel in the Configuration Categories section.
	 <p>NOTE Only the following devices support this feature: HP LaserJet 5Si, 4000, 4050, 4100, 5000, 5100, 8000, 8100, 8150, HP Mopier 240 and 320, and HP Color LaserJet 4500 and 4550.</p>
What is the Remote Discovery Agent (RDA) feature?	<p>HP Web Jetadmin uses RDA to discover unconfigured HP devices (IP address of 192.0.0.192) on remote TCP/IP networks. HP Web Jetadmin pushes a piece of software to a host machine on the remote network. The RDA software then runs as a service under Windows or as a process under Linux, discovering unconfigured devices and passing the device information back to HP Web Jetadmin.</p> <p>You can configure an RDA on the remote network using HP Web Jetadmin. You can also specify the discovery methods that you want to run on the remote network and schedule when the RDA discovery runs on the remote network.</p>
When displaying device lists in HP Web Jetadmin, can I reorder or change the columns of information?	Yes. After you display any device list, click the Views tool on the content toolbar. You can use the Device List - Edit Views page to show or hide columns of information and change the order of the columns. You can permanently save these custom views.
What versions of Novell NetWare Client does HP Web Jetadmin support for Windows NT 4.0, Windows 2000, and Windows XP?	<p>HP Web Jetadmin supports only Novell NetWare Client 4.9.</p> <p>HP Web Jetadmin does not support Novell NetWare Client 4.51, which was shipped with Windows 2000.</p> <p>HP Web Jetadmin does not support Microsoft Client Service for NetWare.</p>
When I create a Windows print queue on a machine that has Novell NetWare client installed, why does the list of printer drivers remain the same when I click More Drivers ?	To allow enumeration of printer drivers from other systems, you must change the order of the print providers on the machine where you are creating the print queue. To change

Question	Answer
	<p>the order of the print providers in Windows NT 4.0, perform the following steps:</p> <ol style="list-style-type: none"> 1. On the host machine where HP Web Jetadmin is installed, go to Network Neighborhood Properties. 2. Click the Services tab. 3. Click Network Access Order. 4. In the Print Providers section, change the order of the list so that LanMan Print Services appears first.
<p>Why does the BOOTP or DHCP process not start on my Unix/Linux system?</p>	<p>HP Web Jetadmin can discover new devices attached to the network by listening for the BOOTP or DHCP packets that HP Jetdirect devices broadcast. The discovery method is enabled by default and might interfere with enabling the BOOTP or DHCP process on the host machine.</p>
<p> NOTE This issue only applies if you try to start the BOOTP or DHCP process after you install HP Web Jetadmin on the same host machine.</p>	<p>If you installed HP Web Jetadmin before you enabled the BOOTP or DHCP process, HP Web Jetadmin binds to the BOOTP port (port 67). When you try to start BOOTP or DHCP, the BOOTP port is unavailable and the process cannot start.</p>
	<p>Workaround 1 - If you implement the BOOTP or DHCP service on the same host machine as HP Web Jetadmin, make sure that you install or start HP Web Jetadmin after you start the BOOTP or DHCP service. This prevents HP Web Jetadmin from binding to the BOOTP port.</p>
	<p>Workaround 2 - If you have already installed HP Web Jetadmin, enable the BOOTP or DHCP process to start at boot up. Restart the host machine. Because the BOOTP and DHCP processes have a higher priority than HP Web Jetadmin, the BOOTP or DHCP process starts and binds to the BOOTP port before HP Web Jetadmin.</p>
	<p>Workaround 3 - If you cannot restart the host machine for some reason, manually stop and restart each process in the following order:</p>
	<ol style="list-style-type: none"> 1. Stop the BOOTP/DHCP process. 2. Stop the HP Web Jetadmin process. 3. Restart the BOOTP/DHCP process. 4. Restart the HP Web Jetadmin process.
	<p> NOTE When the BOOTP/ DHCP process is running, HP Web Jetadmin cannot discover new devices using the BOOTP method. To avoid future BOOTP/DHCP conflicts, perform the following steps:</p>
	<ol style="list-style-type: none"> 1. Browse to HP Web Jetadmin. 2. In the Navigation area, expand the Device Management folder, expand the Discovery folder, and click Properties. 3. Clear the check box labeled Listen For New Devices - BOOTP.

Question	Answer
	<p>4. Click Apply.</p> <p>5. Restart the HP Web Jetadmin service.</p> <p>Once you complete these steps, you must still implement one of the workarounds, if you have not already done so.</p>
<p>How do I install printers in Red Hat Linux?</p>	<p>If you want to use the HP Print Server Manager Software on Red Hat Linux print servers, you must enable the Rexec service on each print server. To enable the Rexec service, perform the following steps:</p> <ol style="list-style-type: none"> For systems with <code>inetd</code>, make sure that the following line is in the <code>/etc/inetd.conf</code> file, and make sure that the line is not commented out: <p>For systems with <code>xinetd</code>, issue the following command:</p> <pre>/sbin/chkconfig rexec on</pre> <pre>exec stream tcp nowait root /usr/sbin/tcpd in.rexecd</pre> Comment out (or delete) the following line from the <code>/etc/pam.d/rexec</code> file: <pre>auth required /lib/security/pam_securetty.so</pre> Restart the Rexec service. <p>For systems with <code>inetd</code>, issue the following commands:</p> <pre>/etc/rc.d/init.d/inet stop</pre> <pre>/etc/rc.d/init.d/inet start</pre> <p>For systems with <code>xinetd</code>, issue the following commands:</p> <pre>/etc/rc.d/init.d/xinetd stop</pre> <pre>/etc/rc.d/init.d/xinetd start</pre>
<p>When creating print queues or pushing the Remote Discovery Agent (RDA) service to a Gnome Workstation, why am I unable to log in to the workstation to complete the process?</p>	<p>The <code>inetd</code>, <code>rsh</code>, and <code>rsh-server</code> packages might not be installed during a default Gnome Workstation installation of Red Hat Linux. To create print queues or push the RDA service, you must manually install these packages.</p> <p> NOTE In general, the <code>rsh-server</code> package is required to create print queues on Linux.</p>
<p>When using Fedora Core 2, why does creating a print queue sometimes fail?</p>	<p>Occasionally, when pushing a print queue to a Fedora Core 2 PC, HP Web Jetadmin displays a Failure, no details message. This usually indicates that the Common Unix Printing System (CUPS) components are out of date. HP recommends that you update the CUPS components (from the Fedora Web site) to <code>cups-1.1.20-11.1</code>, <code>cups-devel-1.1.20-11.1</code>, and <code>cups-libs-1.1.20-11.1</code>.</p>
<p>What file format is needed when using the Import Configuration File feature?</p>	<p>This feature requires a comma-delimited or a comma-separated value (CSV) file format. See Import file configuration for more information.</p>

Question	Answer
What languages does HP Web Jetadmin support? How do I enable them?	<p>HP Web Jetadmin supports the following languages: Czech, Danish, Dutch, English, Finnish, French, German, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Simplified Chinese, Spanish, Swedish, Russian, Traditional Chinese, and Turkish.</p> <p>These language packs are available from HP's Web site. To use the Intelligent Update feature to download and install any or all of these languages, perform the following steps:</p>
	<p> NOTE To use the Intelligent Update feature, you must specify the proxy settings on the General Settings > HTTP (Web) page.</p>
	<ol style="list-style-type: none"> 1. Expand the Product Update folder in the Navigation area. 2. Click Languages. 3. Select the appropriate languages, and click Install. 4. Click Next. 5. If the list of packages to be updated is acceptable, click Next. The Install Results page indicates if the languages that you selected were successfully installed.
Does HP Web Jetadmin support the Windows NT Terminal Server environment?	<p>While HP Web Jetadmin is not supported as a shared application through Windows Terminal Services, it will function on Windows 2000 Server with Terminal Services installed. HP Web Jetadmin has not been tested and is not supported on Windows NT Terminal Server.</p>
Can I use an Apple PC to browse to HP Web Jetadmin?	No.
How do I disable the UTF-8 encoding of the subject line in HP Web Jetadmin alert messages?	<p>UTF-8 is a method for converting 16-bit Unicode characters to ASCII characters for transmission over 8-bit email systems. This encoding is enabled by default in HP Web Jetadmin. To disable this feature so that no encoding takes place, add the following entry under the <code>globals</code> section in the <code>hpjalerts.ini</code> file:</p> <pre>Enable UTF8Subject=true</pre> <p>For Windows, the following is the path for the <code>hpjalerts.ini</code> file:</p> <pre>\Program Files\HP Web Jetadmin\doc\plugins\hpjalerts</pre> <p>For Linux, the following is the path for the <code>hpjalerts.ini</code> file:</p> <pre>/opt/hpwebjet/doc/plugins/hpjalerts</pre>
Why does the AutoComplete function in Internet Explorer not work for passwords?	<p>Passwords in HP Web Jetadmin must be encrypted before being transmitted over the network (from the client machine to HP Web Jetadmin host machine). Because of this, the AutoComplete function for passwords is incompatible and does not work in HP Web Jetadmin.</p>
Does HP Web Jetadmin provide a command-line installation option?	<p>Yes. Issue the following command:</p> <pre>setup <options></pre> <p>You can specify the following parameters for <code><options></code>:</p>

Question

Answer

-h - Displays the usage description.

NONE - Initiates a new installation with a GUI interface.

-r - Initiates a GUI uninstallation.

Silent installation or uninstallation

You can specify the following parameters for <options>:

-s - Initiates a new installation without a GUI interface. The installation fails if there are conflicts.

-s -r - Initiates a silent standard uninstallation.

-s -r all - Initiates a silent complete uninstallation. The uninstallation fails if there are conflicts.

Silent installation only

You can specify the following parameters for <options>:

-d <dir> - Sets the installation directory to the value that you specify for the <dir> parameter.

-m <name> - Sets the hostname to the value that you specify for the <name> parameter, if <name> is valid.

-p <num> - Sets the port number to the value that you specify for the <num> parameter, if <num> is valid.

-n - Sets a silent upgrade to use new settings.

-f - Sets an upgrade or uninstallation to forcefully resolve conflicts.

Text installation or uninstallation

You can specify the following parameters for <options>:

-t - Initiates a new installation with a text interface.

-t -r - Initiates an uninstallation with a text interface.

Bundle installation only

You can specify the following parameters for <options>:

-b - Initiates a silent bundle installation only.

Linux upgrade only

You can specify the following parameters for <options>:

-u <dir> - Initiates an upgrade installation. A previous installation directory must exist.




NOTE All new installations try to discover a previous installation. If a previous installation is found, the upgrade option is offered.

Why does the setup -s -r all command fail to uninstall HP Web Jetadmin?

This command tries to perform a complete uninstallation, but fails because of a conflict with one of HP Web Jetadmin plug-in

Question	Answer
	<p>modules. To perform a complete uninstallation, issue the following command:</p> <pre data-bbox="879 306 1110 327">setup -s -f -r all</pre> <p>The <code>-f</code> parameter forcibly resolves any conflicts.</p>
<p>Is HP Web Jetadmin affected by CERT Advisory CA-2002-17, which affects the Apache Web Server?</p>	<p>HP Web Jetadmin implemented Apache Web Server version 2.0.39, which is not affected by this CERT Advisory. Go to the following Web site for more information:</p> <p data-bbox="879 510 1334 531">http://www.cert.org/advisories/CA-2002-17.html</p> <p> NOTE To resolve other security and non-security related issues, use Apache Web Server version 2.0.54.</p>
<p>Is HP Web Jetadmin affected by CERT Advisory CA-2002-19?</p>	<p>HP Web Jetadmin running on Windows is not affected by this CERT Advisory.</p> <p>HP Web Jetadmin running on Linux might be affected by this CERT Advisory because the GNU libc library is used. You should apply the appropriate operating system patches. Go to the following Web site for additional information:</p> <p data-bbox="879 890 1334 911">http://www.cert.org/advisories/CA-2002-19.html</p> <p> NOTE To resolve other security and non-security related issues, use Apache Web Server version 2.0.54.</p>
<p>When I create a print queue in HP Web Jetadmin, why do the printer drivers not display when I try to select one from a Windows XP machine?</p>	<p>Because of a Windows XP security enhancement, you must install the HP Print Server Management component (also known as PPS) on the remote machine before HP Web Jetadmin can list the printer drivers from the remote Windows XP machine. To push the PPS software to the remote machine, use HP Web Jetadmin to create a print queue on that remote machine.</p>
<p>How do I display the Setup Wizard?</p>	<p>To display the Setup Wizard, in the Navigation area, expand the General Settings folder. Select Setup Wizard under General Settings.</p>
<p>What is the difference between the Allow then Deny and Deny then Allow options in the Order for HP Web Jetadmin Access section on the General Settings > HTTP (Web) page?</p>	<p>For the Allow then Deny option, HP Web Jetadmin evaluates the Allow directives first and then evaluates the Deny directives. If you select this option, HP Web Jetadmin denies access by default. This means that HP Web Jetadmin denies access to any client machine that does not match an Allow directive and denies access to any client machine that does not match a Deny directive.</p> <p>For the Deny then Allow option, HP Web Jetadmin evaluates the Deny directives and then evaluates the Allow directives. If you select this option, HP Web Jetadmin allows access by default. This means that HP Web Jetadmin allows access to any client machine that does not match a Deny directive and allows access to any client machine that matches an Allow directive.</p>
<p>How do I configure Windows NT domain authentication in Linux?</p>	<p>For Windows, NT domain authentication appears as an option within HP Web Jetadmin without any extra configuration.</p>

Question	Answer
	<p>For Linux, however, you must perform the following steps to enable the Linux machine to support Windows NT domain authentication:</p> <ol style="list-style-type: none"> 1. On the Linux machine, install winbindd, if it is not already installed. 2. Configure the smb.conf file. See the winbindd man page for instructions. In the [global] section, add the following lines: <pre>workgroup= <DOMAIN NAME> winbind uid= 10000-20000 winbind gid= 10000-20000 winbind enum users= yes winbind enum groups= yes template homedir= /home/winnt/ %D/%U template shell= /bin/bash winbind separator= +</pre> 3. To start (or restart) samba, issue the following command: <pre>/etc/rc.d/init.d/smb start</pre> 4. To join the domain, issue the following command: <pre>smbpasswd -j <DOMAIN NAME> -r <DOMAIN SERVER> -U <USERNAME></pre> <p>You are prompted for the user's password. The user must have permissions to join the domain.</p> 5. To test the configuration, issue the following command: <pre>wbinfo -t</pre> <p>This is the same test that HP Web Jetadmin uses to determine if the Linux machine supports Windows NT domain authentication. If this command returns successfully, the message Secret is good is displayed. You can also use the wbinfo command to test the authentication of specific users by using the -a option.</p>
<p>Why am I unable to disable some protocols on an HP Jetdirect device?</p>	<p>If Novell NetWare Client 4.80 is installed on the HP Web Jetadmin host machine, upgrade to Novell NetWare Client 4.9.</p>
<p>Why does the Navigation tree applet (on the left side of the screen) not always load?</p>	<p>There might be a problem with the Sun Java classloader and Java caching mechanism. To resolve this issue, turn off Java caching.</p> <p>For Windows, use the following instructions:</p> <ol style="list-style-type: none"> 1. In the Control Panel, double-click Java Plug-in. 2. Click the Cache tab. 3. Click to clear the Enable Caching check box. 4. Click Apply. <p>For Linux, use the following instructions:</p> <ol style="list-style-type: none"> 1. <code>./[path_to_Java]/bin/ControlPanel</code> 2. Click the Cache tab.

Question	Answer
	<ol style="list-style-type: none"> 3. Click to clear the Enable Caching check box. 4. Click Apply.
<p>When using NetWare client version 4.9, why does the NetWare login interface not respond in the HP Web Jetadmin NetWare queue creation or Diagnostics page?</p>	<p>The HP Web Jetadmin service needs to be stopped and then restarted.</p> <p>NetWare client version 4.9 uses a new technology called Novell Modular Authentication Services (NMAS), which changes the client response to user errors, such as a mistyped password or user ID. Therefore, the HP Web Jetadmin thread created for NetWare interaction will not respond, preventing further NetWare/HP Web Jetadmin interoperability. Novell has released TID 10087719 regarding this issue.</p> <p> NOTE To prevent this issue from occurring, click to clear the NMAS setting within the NetWare client settings interface.</p>
<p>When using SUSE LINUX 9.1 Professional, the client browser running HP Web Jetadmin does not display device groups properly or filter devices correctly on the Multiple Device Configuration page. How can I resolve this issue?</p>	<p>In the client browser, click Edit, Preferences, Privacy and Security, Cookies, and Accept All Cookies to resolve this issue. You can also set the browser on the HP Web Jetadmin server to set cookies by clicking Edit, Preferences, Security & Privacy, and Cookies to resolve this issue.</p>
<p>Is Windows XP Service Pack 2 supported with HP Web Jetadmin?</p>	<p>Yes. HP Web Jetadmin supports Windows XP Service Pack 2 if the Internet Connection Firewall is disabled (required for firmware upgrades) or if the following ports are enabled:</p> <ul style="list-style-type: none"> 8000—HTTP Default port and Print queue creation port 8443—HTTPS Default port 67—BootP discovery and server port 80—HTTP listen port for EWS alerts 161—SNMP IP Broadcast discovery and agent listening port 427—SLP broadcast discovery port 27892—Non-standard traps listening port 10167—Auxiliary (passive) Bootp discovery port 10527—Auxiliary (passive) SLP discovery port 43768—RDA Results collection port 54253—FPM installation

Glossary

About page Lists the HP Web Jetadmin version, license, and copyright information.

Admin profile A default profile. The password is assigned during the HP Web Jetadmin installation process. HP Web Jetadmin requires this password for users to change some settings.

allow list A list of the IP addresses that are allowed or denied access to HP Web Jetadmin.

Application Manager An HP Web Jetadmin feature that manages the applications installed on a device or a device group. You can perform the following tasks with this feature:

- View the device applications installed on a device or device group.
- View the history of all Application Manager transactions.
- Install new device applications.
- Remove device applications.

application plug-in Optional software that is added to HP Web Jetadmin to increase its functionality.

ARP Address Resolution Protocol. A protocol used to map IP addresses to hardware addresses. ARP is one method of discovering devices on a network.

ARP Table Each TCP/IP-capable device on a network maintains an ARP Table that contains every device it communicates with. The ARP Table resolves IP addresses to hardware addresses. It obtains the IP addresses from the DNS server, which maps each device hostname to an IP address.

asset number A number of up to eight digits that the network administrator assigns to a device. The asset number is often used for tracking. It is found on the **Device Configuration** and **Device Diagnostics** pages.

Asset View An HP Web Jetadmin predefined view that displays the device model, hardware address, port number, device description, system contact, asset number, and serial number.

Back In most browsers, returns to the previous page that you viewed.

background In most browsers, a color scheme or graphic that serves as a backdrop to a Web page.

batch configuration See [Asset View](#).

Bindery Novell's flat database model for storing printer information.

bookmark An icon on the content toolbar that marks an HP Web Jetadmin page so that you can quickly return to it later. When you expand the **Favorites** folder in the Navigation area, HP Web Jetadmin displays a list of the pages that you have bookmarked.

BOOTP Bootstrap Protocol. BOOTP is a protocol that allows network users to automatically receive an IP address. The BOOTP server automatically assigns the IP address for a limited amount of time from a pool of addresses.

BOOTP request A message sent by a device that has been recently attached to the network. This message notifies the network that the device needs to be configured. When you configure HP Web Jetadmin to run the Listen for New Devices discoveries, it listens for BOOTP requests to find new network-attached devices.

broadcast A message sent to all of the devices on the network. Broadcast messages cause a high spike in network traffic, but it does not last very long.

browser A software application that lets you view information on the Internet. Also see [Web browser](#).

cache A directory where information is stored. Web browsers can retrieve pages from the cache. A computer can access data in the cache faster than it can access data outside of the cache.

capabilities The features and options available for a device, such as color, PCL, PostScript, or Power Save mode. HP Web Jetadmin displays the capabilities on the **Device Status** page.

certificate A file that binds a client or server identity to a pair of electronic keys that an organization uses to encrypt and sign digital information. Certificates ensure secure, tamper-proof communication on the Internet. A certificate is obtained by a process called code signing. The certificate identifies the author and software publisher.

Certificate Authority An organization that issues a certificate and vouches for the identity of the author and software publisher for that certificate.

CGI Common Gateway Interface. The CGI standard lets executable files running on remote Web servers, such as HP Web Jetadmin, communicate with Web browsers. A CGI program runs in real-time and outputs dynamic information to the Web browser window. When you enter the URL where the executable file is stored on the Web server, the program runs and retrieves the information that you want. This means that you do not access data files directly; you access the program, which in turn accesses the data.

client workstation A computer on a network that accesses the shared network resources provided by a computer running administrative software, also known as a server.

content area The main area of each HP Web Jetadmin page. This is where HP Web Jetadmin displays information, where you can apply settings, and where you can perform other tasks.

content toolbar The part of the content area on each HP Web Jetadmin page that contains the following items:

- On some pages, HP Web Jetadmin provides a drop-down list that you can use to access other related pages. For example, when you access a **Device Status** page, the drop-down list on the task bar provides access to other device-related pages, such as the **Device Configuration** page and the **Device Diagnostics** page.
- Several icons that provide specific functionality, including refresh, home, bookmark, and context help.
- During some processes, HP Web Jetadmin displays a progress indicator on the content toolbar.

context help area The area on each HP Web Jetadmin page where the context help is displayed if you have HP Web Jetadmin set up to display it within the software. By default, HP Web Jetadmin displays the context help in a separate browser window.

control panel message A message that indicates device activity, such as Ready or Power Save On. The control panel message appears on the **Device Status** page.

creating print queues The work required on a network print server to create a shared network printer.

custom view A view that you create to display the information that you have specified in the order that you want. Once you create a custom view, you can use it to display any list of devices.

default A predefined option or value. The default is usually set to the value that most users will use.

default device group The network administrator can designate a particular device group as the default. Generally, the default is the device group that is used most often. As a convenience, HP Web Jetadmin displays

the default device group page each time that users start HP Web Jetadmin in their browsers, when users click the home icon on the content toolbar, and when users click **Reload** or **Refresh** in their browser.

Default View An HP Web Jetadmin predefined view that displays the device model, hardware address, port number, IP address, IP hostname, and IPX name.

Detailed View An HP Web Jetadmin predefined view that displays the device model, hardware address, port number, device description, and system contact.

device Any peripheral, such as a printer or scanner, that you can attach to the network. Device usually refers to one of the devices that HP Web Jetadmin manages, including Standard Printer MIB-compliant printers, HP Jetdirect print servers, and HP network scanners. Also see [device group](#).

device address information table A table containing the IPX/SPX name, IP address, hardware address, and description of a device. HP Web Jetadmin displays this information on the **Device Status** page.

device application An application that is installed on any peripheral, such as a printer, that adds functionality to the peripheral.

Device Application Manager See [Application Manager](#).

device cache The file where HP Web Jetadmin stores information about devices that it has discovered on the network. Web browsers can access data in the device cache faster than it can access data outside of the device cache, which reduces network traffic.

device capabilities The features and options available for a device, such as color, PCL, PostScript, or Power Save mode. HP Web Jetadmin displays the capabilities on the **Device Status** page.

device control panel message The device status, such as Ready or Power Save On. HP Web Jetadmin displays the device control panel message on the **Device Status** page.

device description Optional information for the currently selected device, such as its location, options, or users. The administrator assigns the device description when configuring the device.

device group A group of devices and other resources. You can group devices based on location, workgroup, owner, or other identifiers.

device group owner The person who manages a device group. The administrator could be the device group owner.

device group page A list of all of the devices in a device group. It includes information such as device name, IP hostname, and IP address. You can specify a device group page as the HP Web Jetadmin home page.

device group password A password for a device group that the administrator or device group owner assigns. If you assign a password, HP Web Jetadmin prompts users for the password whenever they try to make changes to the device group.

device model The name that a device is sold under, such as HP LaserJet 4si, HP Deskjet, or HP LaserJet 5.

device name The name that a device is identified by on the network. The administrator assigns the device name. The device name can come from the IP or IPX/SPX name, based on the preferred name setting.

device password A password for a specific device. If you assign a password, HP Web Jetadmin prompts users for the password whenever they try to make changes to the device.

device status The current operational state of a device.

device status icon See [device stoplight](#).

device status message The device status. For example, Online, Offline, Paper Out, or Printer Communication Error.

Device Status page A page that displays information about a device, such as status, model name, address, and capabilities.

device spotlight An image that displays one of three states representing the device status:

- Red - An error condition occurred and requires user intervention.
- Yellow - The device is either offline or has a noncritical error, but can still print jobs.
- Green - The device is online and ready.

DHCP Dynamic Host Configuration Protocol. A TCP/IP protocol that dynamically assigns a temporary IP address to each device when it signs onto the network. The IP address comes from a predefined range of reusable IP addresses. Once allocated, DHCP leases an IP address to a device for a preconfigured period of time, called the lease time. The IP address that DHCP assigns to a device might be different each time the device requests an IP address, which could occur during a power on, reboot, or loss of the TCP/IP configuration. DHCP provides an alternative for assigning and managing IP addresses. It provides centralized control and more efficient use of IP addresses.

diagnostics A feature that provides information to help you troubleshoot problems. HP Web Jetadmin gathers the information for the **Device Diagnostics** page from several places within the system.

DLC Data Link Control. In the Systems Network Architecture (SNA), DLC is an error-correction protocol that transmits data between two devices over a physical connection, such as cabling.

DMI Desktop Management Interface. An application program interface that provides information about devices on the network, such as workstations and HP Jetdirect print servers. DMI provides the information needed to perform management tasks remotely and helps administrators with configuration and updating tasks.

DNS Domain Name Service. The DNS server maps each device hostname to an IP address. The ARP Table then resolves these IP addresses to hardware addresses.

EIO Enhanced Input/Output. A hardware interface used in internal HP Jetdirect print server and network adapter cards to provide a communications link between HP printers and the network. This technology replaces the MIO interface and improves on it by offering a 32-bit bus, increased flexibility, lower power requirement, and smaller card size.

embedded Web server A server that is completely contained within a device. Embedded Web servers provide management information about the device. They are helpful for managing single devices on a small network. By using a Web browser to access an embedded Web server, network users can obtain network printer status updates, perform simple troubleshooting operations, change device configuration settings, and link to online customer support. When you need to manage many network devices, it is more effective to use an integrated Web server management tool, such as HP Web Jetadmin.

enterprise A network or collection of networks that typically includes users in different geographical locations using a range of platforms, operating systems, protocols, and network architectures.

enterprise management system A broad-based management tool that oversees all of the people, processes, and technology that make up an enterprise. HP OpenView is an example of an enterprise management system.

error behavior The way that the HP Jetdirect EX print server handles error conditions. The following are the options for handling errors:

- **Dump then Reboot** sends a print log to the device and restarts the HP Jetdirect print server.
- **Reboot without Dump** restarts the HP Jetdirect print server without sending a print log to the device.
- **Dump then Halt** sends a print log to the device and stops the HP Jetdirect print server.

Ethernet frame type A method for assembling packets in Ethernet for network data transmission. Different frame types use different formats.

Export View An HP Web Jetadmin predefined view that displays many, but not necessarily all, of the columns of information stored in the cache. This view is useful when you want to export the device information from the cache to a comma-separated values (CSV) file.

Favorites See [bookmark](#).

file server volume A physical area on a NetWare file server disk drive. A file server volume is similar to a partition in other operating systems.

file server volume object The logical object representing a file server volume in an NDS tree.

firmware Software routines, such as startup routines and I/O instructions, that are stored in read-only memory. You can update the firmware in HP Jetdirect print servers over the network to add functionality and fix problems without upgrading the hardware.

firmware downloader A feature integrated into HP Web Jetadmin that you can use to update the firmware in HP Jetdirect print servers. The firmware downloader can find a newer firmware image on the server hosting HP Web Jetadmin or download one from the HP Web site. Unlike HP Download Manager, the firmware downloader is not a separate utility, and you can use it to download firmware to multiple platforms. In addition, the firmware downloader does not require that you manually determine the latest firmware revision.

Flash memory A type of nonvolatile memory that can be erased in blocks. You can update the information residing in the Flash memory over the network, the way that the HP Web Jetadmin firmware downloader and HP Download Manager update firmware in HP Jetdirect print servers.

Forward In most browsers, displays the next page of the pages you have viewed. You can only use Forward after you have either used Back to navigate or selected another page from a bookmark or favorite-list item.

FTP File Transfer Protocol. A program for transferring files in a TCP/IP environment, such as the Internet. Web browsers commonly use FTP for downloading software from the Web. Contrast with [HTTP](#).

gateway A device that separates networks that use the same or different protocols so that they can exchange information. For example, a router.

GIF Graphic Interchange Format. A file format used primarily for graphics on the Internet. You can create site maps in GIF format and upload them to HP Web Jetadmin where you can associate devices, device groups, and URLs.

green light A visual indicator that a printer is online.

hardware address A unique address that the manufacturer assigns to a network interface card. Also known as the media access control (MAC) address.

high-capacity input (HCI) An accessory on some printers, such as high-end HP LaserJet printers and multi-function peripherals (MFPs), that provides large paper stack feeding capability.

high-capacity output (HCO) An accessory on some printers that lets you send output to multiple output trays or different mailboxes.

home page The first screen you see when you enter HP Web Jetadmin. The administrator can choose which page is displayed as the home page.

hostmachine A network machine running administrator software that controls access to all resources on a network. A host machine makes network resources available to client workstations on the network.

hostname A user-friendly name assigned to a device that eliminates the need to use an IP address to communicate with the device. The hostname can reside on the device itself or on a name server, such as DNS.

HTML Hypertext Markup Language. A special language used to create Web pages. It organizes text, graphics, sound, and animation into documents that a Web browser can display.

HTTP Hypertext Transfer Protocol. A standard Internet protocol that Web browsers use to retrieve documents and programs stored on Web servers over the Internet or a corporate intranet. Contrast with [FTP](#).

HTTP port A setting used to indicate a Web site's physical port.

HTTPS Hypertext Transfer Protocol Secure. A protocol used to access a secure Web server. HP Web Jetadmin uses HTTP and SSL to provide secure access.

idle timeout The amount of time that HP Web Jetadmin waits after receiving print data before switching I/O ports. For HP Web Jetadmin, the default idle timeout is 120 seconds.

Internet A global collection of networks and gateways that use TCP/IP protocol.

Internet browser A software application that lets you view information on the Internet.

intranet A network used to distribute information within an organization. Intranets use the same applications associated with the Internet, but they are only accessible from within an organization.

IP See [TCP/IP](#).

IP address A unique identifier assigned to a device that lets you use TCP/IP protocol to communicate with the device.

IP Range discovery A discovery method that searches for devices at one IP address or a range of specific IP addresses.

IPX/SPX Internetwork Packet Exchange/Sequenced Package Exchange. The software developed for communications between computers over networks. IPX/SPX protocol is only supported on Windows NT networks.

IPX/SPX name The name that the administrator assigns to the HP Jetdirect card.

IPX/SPX SAP IPX/SPX Service Advertising Protocol. A periodic broadcast packet that provides information on NetWare services. This information is stored in the Bindery.

Java applets Small applications created with the Java programming language that can be embedded in Web pages to provide executable content. This means that Web pages can display dynamic, interactive content. When a Java-enabled browser displays a page containing a Java applet, it downloads the applet and lets the computer run it. The results of the applet appear in the Web page. HP Web Jetadmin users can see the Java Status applet, which dynamically updates device status, on the **Device Status** page.

JavaScript A programming language that HP Web Jetadmin uses when Java is not required. JavaScript executes faster than Java and still adds capabilities that the CGI does not provide. It allows for a livelier, more animated user interface and helps keep Web pages cleaner by reducing the need for **Submit** buttons on Web forms.

Jetadmin Software for network device configuration and management. Unlike HP Web Jetadmin, HP Jetadmin requires that you install a copy of the software on each workstation where it will be used. It also requires that you install an OS-specific version on each operating system where you manage printers.

Jetdirect print server The internal or external HP Jetdirect print server hardware developed by Hewlett-Packard that enables network-connected printing.

Jetdirect View An HP Web Jetadmin predefined view that displays the hardware address, port number, HP Jetdirect model, HP Jetdirect firmware revision, system contact, and device model.

Jetsend A peripheral communications architecture that lets a wide range of devices, such as network peripherals and workstations, communicate on a peer-to-peer basis without device-specific formatting and communications software, such as printer and device drivers. HP devices that support HP Jetsend include the HP LaserJet 4000, HP LaserJet 5000, HP Color LaserJet 4500, HP LaserJet 8100, and the HP 9100C Digital Sender.

job description Information about a print job, such as the file name.

job details Detailed information about a print job, such as the job number, entry time, size in bytes, and number of requested copies.

job entry time The time that the print job entered the print queue.

job ID A reference number that the device automatically assigns to uniquely identify a job.

job list A list of the print jobs that have printed. The list could include the job ID, job description, job status, and job owner. The list depends on the operating system, application, and printer driver used.

job number A number that the HP Jetdirect print server assigns to a print job.

job owner The person who sends a job to a device.

job retention A feature on some printers that have mass storage capability. This feature lets users store jobs, print multiple copies, or store secure private copies on a printer.

job size The size of a print job in bytes.

job status The state of a job, such as Printed, Processing, or Hold. You can periodically update the status by clicking the refresh icon on the content toolbar.

LAN Local Area Network. Devices connected by a communications link that lets them communicate with each other. LANs support a wide variety of devices, such as workstations, printers, and large storage disks, but they must be located within a limited area, such as a single building, and they must all use the same protocol to communicate.

LLC Logical Link Control. One of the data-link sublayers of the ISO Open Systems Interconnection model that is defined in the IEEE 802 standards. The LLC sublayer is involved with workstation-to-workstation connections and error control. Contrast with [MAC](#).

local broadcast A broadcast that occurs on the subnet local to the Web server over the protocol that you have enabled, either TCP/IP or IPX/SPX.

MAC Media access control. One of the data-link sublayers of the ISO Open Systems Interconnection model that is defined in the IEEE 802 standards. The MAC sublayer is involved with network access and collision detection. It varies from one standard to another according to the different types of networks defined by them. Contrast with [LLC](#).

MAC address A unique address that the manufacturer assigns to a network interface card. Also known as the hardware address.

map A graphical representation of your site's physical layout that shows you the location of your device groups and devices. You can click an icon on the map to view a **Device Status** page and follow links to other maps, pages, or URLs. HP Web Jetadmin lets you display dynamic maps that show device status.

menu bar A bar on each HP Web Jetadmin page that contains a series of buttons. These buttons take you to pages where you can view information and perform specific tasks. The buttons are different depending on where

you are in HP Web Jetadmin. For example, if you are on the **Device List** page, the menu bar contains the following buttons: **Devices**, **Configuration**, **Update**, and **Views**.

MIB Management Information Base. A database protocol used to manage devices on a network. The MIB contains information about the devices that are managed by a network management system. This information, which is collected from each device through SNMP, could include the device name, features, data transmission statistics, and errors. Specific information stored in the MIB varies by device vendor and model. The Standard Printer MIB is defined by the Request for Comments (RFC) 1759 specification.

MIO Modular Input/Output. A hardware interface used in internal HP Jetdirect print server and network adapter cards to provide a communications link between HP printers and the network. MIO technology has been replaced by the newer EIO technology.

model script The software needed to create print jobs on Linux or UNIX systems.

multicast A broadcast directed at specific devices on the network. The Multicast/SLP discovery broadcasts an SNMP query asking all multicast devices on the network to respond.

multicast/SLP An option for broadcasting that sends data packets to a pool of devices, each listening to a common IP address. The Multicast/SLP discovery finds new IP addresses and reconnected printers, among others.

multiple device configuration A method of changing the settings for two or more devices at once. You can assign the same value to selected fields for multiple devices.

NDS NetWare Directory Services. Novell's hierarchical database model for object organization.

offline A condition during which the printer does not accept or print data from the host machine.

online A condition during which the printer accepts and prints data from the host machine.

OpenView A broad-based enterprise management system that oversees all of the users, processes, and technology that make up an enterprise. It can communicate with HP Web Jetadmin through bridges. This lets you use HP Web Jetadmin information at the enterprise management level.

owner The name of the application that initiated a job.

package A collection of files that provide specific functionality to HP Web Jetadmin. For example, a language package contains all of the files required to add support for that language and a device package contains all of the files required to add support for that device.

Page Count View An HP Web Jetadmin predefined view that displays the device model, IP address, port number, start date, interim page count, and total page count. The interim page count is the number of pages a printer has processed since the page count was reset to zero. The total page count is the same as the page count displayed on a printer test page. Not all printers support the **Page Count View**. The start date displayed is based on the host machine clock. Note that the host machine where HP Web Jetadmin is running and the client machine where the Web browser is running may be in different time zones.

pages per minute The number of pages a device can print per minute.

pages printed The total number of pages that a device has printed during the current print job.

parallel handshaking The communications protocol or handshake that the HP Jetdirect external print server and the printer use. You can select Busy only, nACK and busy, or nACK only.

parallel mode The type of parallel mode that the HP Jetdirect external print server uses.

parameter A configuration option on a printer, such as email settings and embedded Web server language.

parent device group A map that shows the location of the device groups. You can click an icon in the parent device group to view an individual map for a device group.

password A series of letters and numbers that are required to access a secured system or device. Users must know the current password to change or delete any of the existing passwords, change device settings, or change the HP Web Jetadmin software.

patch A subset of the files found in a particular package that are designed to address issues with any HP Web Jetadmin software components.

ping A signal sent to a device on the network asking it to respond. HP Web Jetadmin can ping devices to find them during a discovery.

Point and Print A feature that makes a shared printer available to all Windows users after it is installed on the network. The printer driver is automatically downloaded to any Windows machine that accesses the shared printer.

print filter The software needed to create print jobs on Linux systems.

print queue The path that a print job takes to reach a printer after a user sends the print job from an application on a client workstation.

print server A network computer or similar device running administrator software that controls access to network printing resources. A print server makes printers available to client workstations on the network.

print server name The name of a NetWare print server object.

print server object The object in the NDS tree where a specific print server object is defined.

print server tree The NDS tree where a specific print server object is defined. To access a specific print server object, the HP Web Jetadmin user must log into the NDS tree where that object is defined. This means that the user tree and the print server tree are the same.

printer driver The software needed to create print jobs on Windows systems.

private job A job retention option that holds a print job until a user releases it by entering a personal identification number.

Proof and Hold A job retention option that lets users print one copy of a multiple-copy print job for proofing. The user can then release the remaining copies for printing or cancel them.

protocol stack A collection of software that controls the communications between devices. Devices with the same protocol stack can communicate with each other.

push The process of remotely installing software on a device. For example, the software that allows the HP Jetdirect print server to communicate with an HP Jetdirect device is installed on the HP Jetdirect print server. In some operating systems, such as Windows, HP Web Jetadmin can push the software.

queue context The context in the NDS tree where a particular queue object is defined. An HP Web Jetadmin user can browse the context in the NDS tree to find queues.

queues serviced list A list of the Bindery queues currently configured for the selected device.

quick copy A feature in some printers that lets you print additional copies of a print job after the initial job has printed.

Quick Device Find A search feature that lets you quickly find a specific device by its hardware address, IP address, IPX/SPX address, IPX name, or IP hostname.

Quick Set A feature that lets you group the configuration options that you use most often. Once you define a Quick Set, you can display the configuration options in your Quick Set on the **Device Configuration** page.

red light A visual indicator that means a printer is in an error condition. When the stoplight icon displays a red light, users cannot send print jobs to the printer. User intervention is required to bring the printer back online.

refresh Replaces the information on the current, cached HP Web Jetadmin page with updated information.

refresh rate Controls how often the information in HP Web Jetadmin is automatically updated. Setting the automatic refresh rate might place an unnecessary load on the Web server, so this option is not set up by default. However, if you choose to use this feature, the recommended rate is from 6 to 60 seconds.

remove device Deletes a device from a device group.

results page Displays the results of a device search.

SAP Service Advertising Protocol. A broadcast protocol that file servers, print servers, gateway servers, and application servers use to advertise their services and addresses on TCP/IP networks. SAP broadcasts are generated at regular intervals. For example, HP Jetdirect print servers send out a SAP broadcast every 60 seconds. You can configure the frequency of HP Jetdirect SAP broadcasts through the IPX/SPX SAP broadcast interval parameter; setting this interval to zero disables SAP broadcasts, which is useful on networks that do not require them.

scheduled discovery times The set times that HP Web Jetadmin performs a discovery. The administrator specifies the discovery times.

seed address A device address that HP Web Jetadmin uses to perform an ARP Table discovery. An ARP Table discovery uses an SNMP broadcast to determine an initial list of devices to discover, also known as a seed list.

server A network computer running administrator software that controls access to all network resources. A server makes network resources available to client workstations on the network.

Set Community Name A card setting that allows SNMP to set an object on the card. You must have a matching Set Community Name to perform an SNMP set on the card.

SLP Service Location Protocol. Unsolicited service advertisements by network devices that TCP/IP-based multicast packets send. Also see [multicast/SLP](#).

SNMP Simple Network Management Protocol. An Internet standard communications protocol that lets devices from different vendors work with each other and collects management information from devices on a network. This information is recorded in the device MIB. Management utilities, such as HP Web Jetadmin, can use SNMP to collect information from the MIB and display it on various pages.

SNMPv3 Simple Network Management Protocol version 3. In addition to the functionality of SNMP, SNMPv3 protects network management information through user authentication and data encryption. HP Web Jetadmin uses SNMPv3 to prevent unauthorized users from viewing or changing network device settings

Specified Addresses discovery A discovery method that only searches for the devices that are recorded in a data file that you create.

SSL/TLS Secure Sockets Layer/Transport Layer Security. A network security protocol that is used to secure Web transactions.

state The operational status of a job, such as **Pending** or **Completed**.

status The operational state of a device.

status page language The device personality that the HP Jetdirect external print server uses when it sends a status page to the printer. This personality can be HP-PCL, PostScript, Text, or HP-GL2.

Status View An HP Web Jetadmin predefined view that displays the device model, hardware address, port number, device description, and status description.

stored job A job-retention feature in some printers that saves a print job. You can then call the job from the printer control panel as needed. This feature is useful for storing forms and other commonly shared documents.

subnet A network could be made up of multiple LANs that are interconnected with bridges and routers. In such an arrangement, each LAN is called a subnet, or subnetwork. A subnet is usually confined to a departmental area or a workgroup of users, and traffic is often isolated within a subnet.

subnet mask A number that identifies a subnetwork so that the local network can share an IP address.

system contact The person, often the administrator, device owner, or device group owner, who users can go to for device support or HP Web Jetadmin support.

task bar An area on each HP Web Jetadmin page that contains several drop-down lists and text boxes that let you select the task that you want to work on.

TCP/IP Transmission Control Protocol/Internet Protocol. The software developed for communications between computers that has become the standard for data transmission over networks, including the Internet.

TCP/IP settings The IP address, default gateway, subnet mask, and idle timeout for a device.

TCP/IP timeout The amount of time, in seconds, after which the HP Jetdirect print server closes an idle TCP/IP print data connection. Timeout is also referred to as Wait. Acceptable values are integers between 0 and 3600. A value of zero turns off the timeout feature.

test page Prints an embedded test page.

TFTP Trivial File Transfer Protocol. A protocol for transferring files. The HP Web Jetadmin integrated firmware downloader uses TFTP to send an updated firmware image to an HP Jetdirect print server. This download process is fully fault tolerant because each image file contains two complete code sets.

toner gauge A visual indicator of the amount of toner left in the toner cartridge. The toner gauge appears on the **Device Status** and **Device Diagnostics** pages. This feature is only available for newer printers.

traffic The amount of activity being handled on network communications links. General, or broadcast network traffic, is sent to all network devices. Directed network traffic is sent to specific devices.

traffic light icon See [device stoplight](#).

URL Uniform Resource Locator. An address used to access information on the Internet, either a Web page, FTP or Gopher, Usenet, or database. URLs can take the following formats: <http://host.domain/page> or <mailto:username@host.domain>.

user context The context in the NDS tree where a user object is defined. The NetWare system administrator determines this context when creating the user object.

user tree The NDS tree where a user object is defined. The NetWare system administrator creates and maintains the user object.

view Determines the information about a device that is shown. You can select from the following views:

- [Default View](#)
- [Status View](#)
- [Detailed View](#)
- [Asset View](#)
- [Jetdirect print server](#)
- [Page Count View](#)

- [Export View](#)
- [custom view](#)

volume context The context in the NDS tree where file server volume objects are defined. The NetWare system administrator specifies this context.

WAN Wide area network. A communications network that connects geographically separated areas.

Web browser An application running on a workstation that you use to view HTML documents on the Web, access hyperlinks, and transfer files. Web browsers request information from Web servers and display the information that the Web servers send back. The information is organized into Web pages, which contain text, graphics, sound, and animation formatted by HTML and Java applets. HP Web Jetadmin supports Firefox (Linux) and Microsoft Internet Explorer (Windows).

Web Redirector A miniature Web server contained in the HP Jetdirect print server itself that accesses device information from HP Web Jetadmin. You can type the HP Jetdirect print server IP address in your browser as the URL. HP Jetdirect then accesses and displays the HP Web Jetadmin **Device Status** page for the device. Administrators specify the Redirect URL for the **Device Status** page on the **Device Configuration** page.

Web server A specialized program running on a server that supports TCP/IP protocol. Web servers let workstations on a network access the Web. Web servers receive HTTP requests that Web browsers running on client workstations send. The Web server could be asked to get a text or graphics file or retrieve a ZIP file. The Web server then sends the information, files, or program results back to the requesting browser. Embedded Web servers are contained within HP Jetdirect print servers to provide management information about the device.

WINS Windows Internet Naming Service. A method that Windows NT Server uses to associate a computer hostname with its address.

WWW World Wide Web. An easy-to-use, graphics-based interface to the Internet. The Web refers to the total set of linked, hypertext documents that are located on Web servers throughout the world.

yellow light A visual indicator that means a printer is low on toner or a media tray is empty. When the stoplight icon displays a yellow light, users can still send print jobs to the printer.

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