

## HP LaserJet 4345mfp series Reviewer/Evaluator's Guide





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# Getting to know the MFP



Welcome to the Reviewer/Evaluator's Guide for the new HP LaserJet 4345mfp series. This guide will introduce you to the MFP (multifunction product) and help you to conduct a successful evaluation.

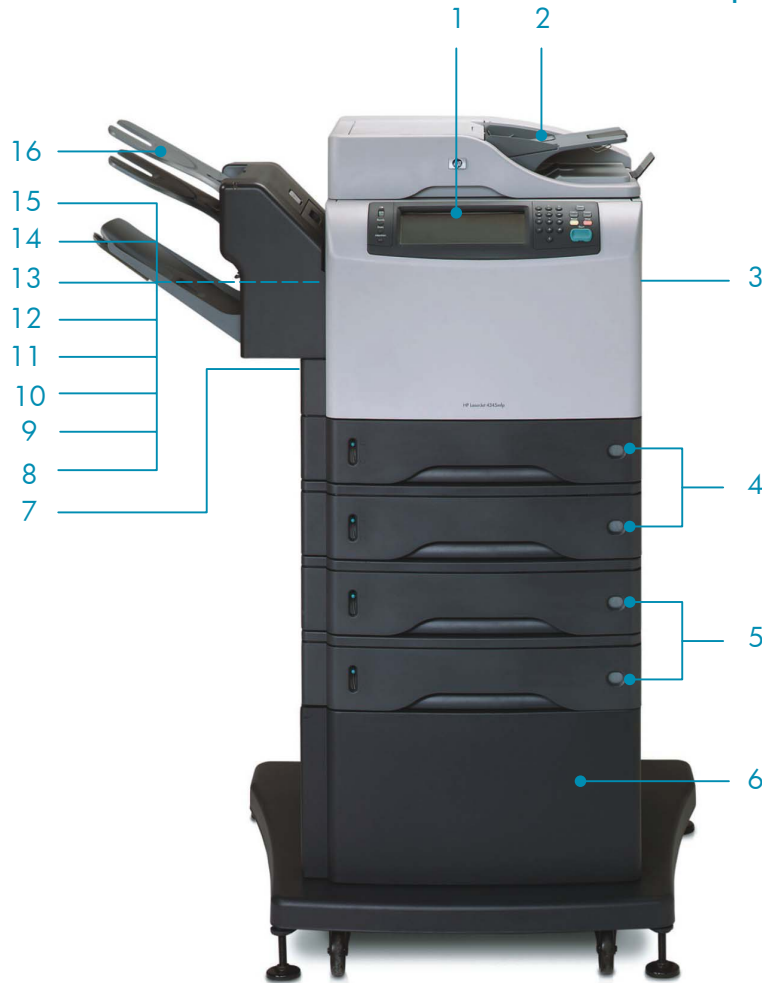
The HP LaserJet 4345mfp series offers high-quality printing, copying, scanning, faxing, and finishing capabilities for reliable document production. The MFP includes industry-leading network printing and features send to e-mail out of the box, along with other cost-effective solutions tailored to suit your business needs.



# Features

- 1 Easy-to-use touch-screen control panel with 10-key number pad provides effortless device interaction
- 2 50-sheet automatic document feeder (ADF) automatically scans two-sided documents
- 3 100-sheet multipurpose tray handles heavy custom media up to 53 lb (200 g/m<sup>2</sup>)
- 4 Adjustable 500-sheet input trays 2 and 3
- 5 Optional 500-sheet input trays 4 and 5 for a 2,100-sheet total input capacity
- 6 MFP stand with storage cabinet
- 7 Automatic two-sided printing accessory for fast duplexing
- 8 Bidirectional IEEE-1284-B compliant parallel port
- 9 HP Jetdirect Fast Ethernet embedded print server
- 10 Open EIO slot enables HP and third-party solutions
- 11 Jetlinkport for third-party paper handling solutions
- 12 Foreign interface harness connector
- 13 256 MB total memory and a powerful 533 MHz processor perform complex tasks quickly
- 14 20 GB HP high-performance embedded hard disk for effective digital sending, private printing, and job storage
- 15 Analog fax accessory
- 16 3-bin mailbox accessory

HP LaserJet 4345xm mfp with optional 500-sheet input trays 4 and 5 shown



## Build to suit your business

Add the following optional components to your HP LaserJet 4345mfp series to meet the needs of your business:

- Expand the input capacity of any HP LaserJet 4345mfp series to a maximum of 2,100 sheets with the 100-sheet multipurpose tray, the 500-sheet input tray 2, and optional 500-sheet input trays 3, 4, and 5.
- Take advantage of advanced output solutions, including a 500-sheet stapler/stacker or 700-sheet 3-bin mailbox.
- Increase office efficiency with the 75-sheet envelope feeder.
- Print professional documents with the automatic duplexer for two-sided printing.
- Enhance productivity with a third-party input/output paper handling device via the Jetlink and FIH ports.
- Quickly and securely send faxes with the HP LaserJet MFP Analog Fax Accessory 300.
- Get up to 512 MB of memory via an open DDR DIMM slot.

- Enjoy simple, reliable Multiplex XHTML-Print printing from your personal device, such as a mobile phone, using the optional HP bt1300 Bluetooth® Wireless Printer Adapter.<sup>1</sup>
- Use the available EIO slot for the optional HP Jetdirect 680n 802.11b wireless print server or HP and third-party solutions for business functions including form, check, and barcode printing.
- Optimize the MFP's capabilities with HP Digital Sending Software (DSS) 4.0. The software lets you digitally capture paper-based documentation for easy routing and storage.
- Purchase HP's AutoStore software to digitally send scanned documents to document management and collaboration platforms including Microsoft® SharePoint portal, Microsoft Exchange, FileNet, Documentum, Lotus Notes, and others.

<sup>1</sup> For more information and a list of supported phones and other devices, go to [www.hp.com/support/bluetoothprinteradapter](http://www.hp.com/support/bluetoothprinteradapter).

## Outstanding productivity

- **Quickly print, copy, fax, and scan.** Ideal for your busy office, the HP LaserJet 4345mfp series offers a rich set of features. With black-and-white printing and copying at up to 45 pages per minute (ppm) letter (43 ppm A4), the MFP delivers fast, impressive results.
- **Boost productivity with two-sided printing, copying, and scanning.** The 50-sheet automatic document feeder (ADF) effortlessly processes two-sided documents, enabling unattended copying and scanning and eliminating the need to manually feed originals. In addition, get duplexed output and reduce your office costs with the automatic two-sided printing accessory.<sup>2</sup>
- **Transform your document workflow.** Optimize the MFP's embedded send-to-email function with optional HP DSS 4.0,<sup>3</sup> which facilitates document workflow by enabling documents to be sent to printers, network folders, and fax services. Add optional HP AutoStore3 software to effortlessly route information to document management applications.
- **Send and receive documents with the analog fax accessory.**<sup>2</sup> The internal fax card increases the functionality of your device, improves office productivity, and supports efficient information sharing.
- **Depend on simple, intuitive interaction.** The touch-screen graphical control panel features an integrated design that lets you easily determine job status and employ the copy, scan, fax, and digital send functions. Used across several HP devices, the intuitive control panel provides a consistent walk-up experience for users of HP products, improving usability and minimizing training costs.

<sup>2</sup> Standard features vary by model.

<sup>3</sup> Not included, sold separately. Software is server-based, server required.

<sup>4</sup> Using genuine HP supplies ensures availability of all HP printing features.

<sup>5</sup> Program availability varies by region.

## Simplify and save time

- **Configure the MFP to suit your needs.** Create high-quality documents with a choice of advanced output options, including a stapler/stacker that can staple documents of up to 30 pages and stack up to 500 sheets. You may also choose a 3-bin mailbox for separating print, copy, and fax functions, assigning mailboxes for users, or stacking up to 700 sheets.
- **Focus on creating effective business documents rather than tending to your MFP.** Reduce user interaction with a total input capacity of up to 2,100 sheets and fast, convenient mailing with the optional 75-sheet envelope feeder.
- **Enjoy the simple, integrated design.** With its small footprint, the MFP conserves floor space and is easy to add to workstations or imaging and printing areas.

## Reliable and easy to use

- **Share the device with peace of mind.** Enjoy best-in-class networking with the HP Jetdirect Fast Ethernet embedded print server. HP Web Jetadmin offers proactive, fleet management, including remote installation. The HP Embedded Web Server is designed for one-to-one device management and performs remote diagnostics, sends e-mail alerts, and provides job tracking and accounting.
- **Count on HP Smart Printing Technology.**<sup>4</sup> The MFP and HP supplies include innovative HP Smart Printing Technology, which makes automatic adjustments to optimize print quality and enhance reliability. Managing supplies is simple with easy access to the all-in-one HP LaserJet Smart print cartridge and convenient, online ordering with the HP SureSupply program.<sup>5</sup>

## Series at a glance



### 4345mfp (Q3942A)

- 100-sheet multipurpose tray and 500-sheet input tray 2 for 600-sheet capacity
- 500-sheet output tray
- 50-sheet ADF
- HP Jetdirect Embedded Print Server
- 256 MB SDRAM
- One available EIO slot



### 4345x mfp (Q3943A)

- Base model plus:
- 500-sheet input tray 3 for 1,100-sheet capacity
  - Automatic two-sided printing accessory
  - Analog fax accessory



### 4345xs mfp (Q3944A)

- Base model plus:
- 500-sheet input tray 3 for 1,100-sheet capacity
  - Automatic two-sided printing accessory
  - Analog fax accessory
  - MFP stand and storage cabinet
  - Stapler/stacker accessory



### 4345xm mfp (Q3945A)

- Base model plus:
- 500-sheet input tray 3 for 1,100-sheet capacity
  - Automatic two-sided printing accessory
  - Analog fax accessory
  - MFP stand and storage cabinet
  - 3-bin mailbox accessory

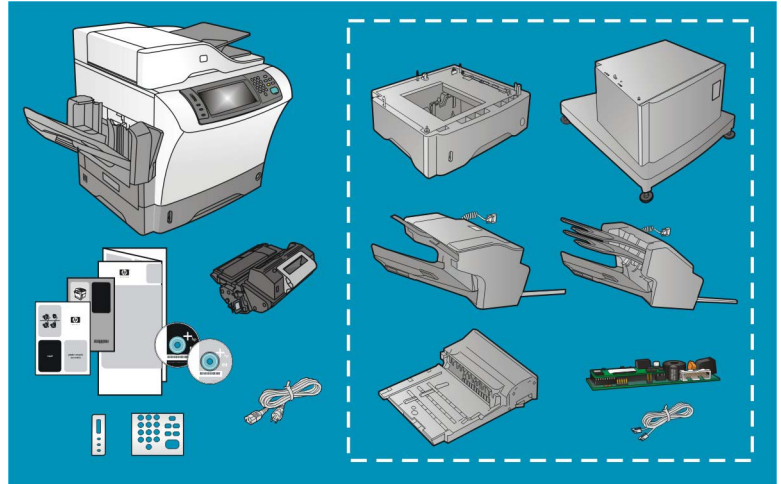
## New features (4345mfp vs. 4100mfp)

Performance		
45 ppm letter (43 ppm A4) printing and copying	25 ppm letter (24 ppm A4) printing and copying	Nearly double the print and copy speed for increased productivity
533 MHz processor	250 MHz processor	Faster processor speed for improved performance
Paper input capacity		
50-sheet ADF	30-sheet ADF	Increased ADF capacity
2,100-sheet maximum input capacity with 100-sheet multipurpose tray, 500-sheet input tray 2, optional 500-sheet input tray 3 (standard with 4345x, 4345xs, and 4345xm), and optional 500-sheet input trays 4 and 5	1,600-sheet maximum input capacity with 100-sheet multipurpose tray, 500-sheet input tray 2, optional 500-sheet input tray 3 (standard with 4101), and optional 500-sheet input tray 4	Greater input capacity reduces device interaction and lets you store paper by size and type
Output accessories		
Optional 3-bin mailbox (standard with 4345xm) Optional stapler/stacker (standard with 4345xs)	Not available	More output options
Faxing		
33.6 kbps fax speed	14.4 kbps fax speed	Increased fax speed
Connectivity		
HP Jetdirect Fast Ethernet embedded print server	HP Jetdirect 615n print server (EIO) for Ethernet 10/100 Base-TX networks	High-performance embedded print server leaves EIO slot open
Memory		
256 MB RAM standard, 512 MB RAM maximum	64 MB RAM standard, 256 MB RAM maximum	Increased standard and maximum memory for improved performance
20 GB HP high-performance embedded hard disk	5 GB hard disk (or greater)	More space on the hard disk
Printer languages		
HP PCL 6, HP PCL 5e, HP postscript level 3 emulation, direct PDF printing (v 1.3), XHTML-Print v 0.95	PCL 6, HP PCL 5e, and HP postscript level 3 emulation	Direct PDF and XHTML printing allow easy mobile printing from your notebook computer, PDA, or mobile phone
Duty cycle		
200,000 pages per month	150,000 pages per month	More robust design

## What ships with the MFP

The HP LaserJet 4345mfp series ships with the following:

- Getting started guide
- Setup wall poster
- Network configuration guide
- Fax install guide (HP LaserJet 4345x, 4345xs, and 4345xm mfps only)
- Software CD
- Training CD
- HP DSS 4.0 trial and demonstration CD
- HP LaserJet print cartridge with HP Smart Printing Technology<sup>6</sup>
- Power cord
- 500-sheet input tray 3 (HP LaserJet 4345x, 4345xs, and 4345xm mfps only)
- Stapler/stacker accessory (HP LaserJet 4345xs mfp only)
- 3-bin mailbox accessory (HP LaserJet 4345xm mfp only)
- Automatic two-sided printing accessory (installed, HP LaserJet 4345x, 4345xs, and 4345xm mfps only)
- Analog fax accessory (installed, HP LaserJet 4345x, 4345xs, and 4345xm mfps only)
- Phone cord (HP LaserJet 4345x, 4345xs, and 4345xm mfps only)
- MFP stand with storage cabinet (HP LaserJet 4345xs and 4345xm mfps only)



## Product software

The HP LaserJet 4345mfp series includes a powerful suite of software that is easy to install and use. The print drivers and utilities cover a wide range of operating systems and are localized in many languages.

The MFP ships with the following components on the Software CD:

- Installer/uninstaller
- HP PCL 6 print driver (Windows environments)
- HP PCL 5e print driver
- HP postscript level 3 emulation print driver (Windows and Macintosh environments)
- Driver auto-configuration (in Windows 2000 and XP environments, the MFP features automatic discovery and driver configuration for accessories at the time of installation, including paper trays, output accessories, and installed DIMMs)
- Driver pre-configuration (lets you create custom installations and copy the product software onto disks, your computer's hard drive, or a network drive)
- Product documentation

Additional drivers, updated drivers, and other valuable software for the HP LaserJet 4345mfp series will be available on the HP Customer Care Web site after product introduction at: [www.hp.com/support/lj4345mfp](http://www.hp.com/support/lj4345mfp).

<sup>6</sup> Average cartridge yield: 18,000 standard pages. Declared yield value in accordance with ISO/IEC 19752.



# Evaluating the MFP

Traditionally businesses have relied upon a variety of hardcopy tools, including printers, fax machines, and copiers, to create and distribute business content. While the functionality offered by these tools remains important, advances in digital technology, the rise of the Internet, and the increasing popularity of e-mail have changed the hardcopy needs of users. By adequately addressing these hardcopy needs, a business can increase user productivity and operating efficiency—compelling reasons for choosing the right hardcopy solution. However, before you can select the right solution, you must have an understanding of document creation.

Industry data indicates that most copy and print jobs are small: the average print job is 5 pages or fewer in length, and the average copy job consists 7.5 copies. This suggests that businesses need a hardcopy solution capable of producing large numbers of small jobs. The Gartner Group has found that 70 percent of all copy jobs start at the printer, indicating that most business departments would be better served by a network-enabled printer-copier combination rather than a standalone copier.

HP MFPs enable users to print multiple originals, make copies, and convert paper-based content to electronic format for sending or sharing. With your MFP connected to a network rather than an individual PC, multiple jobs for multiple users may be processed at once.

Based on extensive market research and customer feedback of its products, HP has identified user needs in seven key categories. These categories should be closely examined as businesses consider the purchase of MFPs. In this section, we will examine each of these and how the HP LaserJet 4345mfp series meets the criteria in each category.



- 1—Ease of use
- 2—Versatility
- 3—Reliability
- 4—Total cost of ownership
- 5—Performance
- 6—Print and copy quality
- 7—Network management solutions

The HP LaserJet 4345mfp series provides superior performance and the industry's simplest, most intuitive design, enhancing HP's reputation for producing the most reliable products on the market. During your evaluation, we invite you to compare the HP LaserJet 4345mfp series to other competing products to see why it is the best choice for your workplace!

## Evaluation guidelines

As you design tests and conduct your evaluation, remember the following guidelines:

- Consider the typical end-user's printing, scanning, faxing, and copying needs.
- Simulate the end-user's environment.
- When testing more than one product, try to make a fair comparison between products by setting up in the same environment and testing similar settings and configurations.
- Analyze each of the elements of the printing process, but remember that the elements work together as part of the whole solution. (For instance, performance claims mean very little if documents print incorrectly or with poor quality.)

## Ease of use



## Simple, intuitive design offers efficient operation

The HP LaserJet 4345mfp series is designed to be easy-to-use and offers both administrators and end-users reliable, efficient printing to help increase productivity and improve business communication.

Easy to operate and maintain, the MFP is compatible with other HP LaserJet products and includes support for other systems and software. It integrates seamlessly into your business, allowing you to invest your time in other issues and reducing your day-to-day business concerns.

## Easy-to-use, intuitive control panel

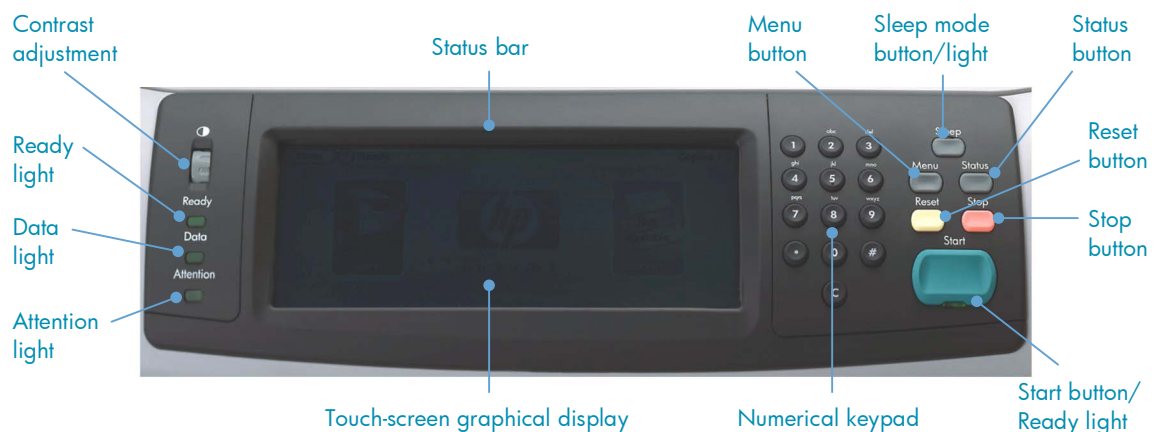
The control panel has a unique touch-screen graphical display with all the features you expect from a standard photocopier as well as faxing, scanning, digital sending capabilities, and printing. The control panel allows you to describe the features of the original document, modify the document, and then select the features you desire in the copy.

In addition, the control panel presents several menus that allow you to set system defaults, customize settings for a particular job, and store and retrieve printed and scanned jobs.

The control panel offers:

- Clear feedback during interaction with the touch-screen graphical display
- Support for learning how to use product features
- Clear instructions and illustrations
- Easy-to-read status messages in one location

The control panel includes a touch-screen graphical display with contrast adjustments, five job-control buttons, a numeric keypad, three light-emitting diode (LED) indicator lights, and a Sleep mode button/light.



## HP Smart Printing Technology<sup>7</sup>

- HP print cartridges feature HP Smart Printing Technology to ensure consistent, top-quality output over the life of each print cartridge, and from cartridge to cartridge.
- The simple paper path and the easy-to-use, all-in-one HP print cartridge results in fewer and easier interactions with the MFP.
- HP Smart Printing Technology is activated every time you install an HP print cartridge into your MFP. The HP print cartridge, MFP, and software are designed to work together, allowing you to monitor your current supplies, order new supplies on-line, and print successfully every time.

## Extensive user help

The MFP includes three types of help:

- **What is this?** help provides information on any item on the touch screen.
- **Show me how** help shows you how to use the product features.
- **Self-help** provides access to extensive help on the Web. Access the online self-help by selecting HP Instant Support Professional Edition from the HP Embedded Web Server.

## Productivity tools and services

Powerful tools and services provide convenient access to device information, settings, and support. For more information, see Appendix B, “Productivity tools and services” on page 29.

<b>HP Embedded Web Server</b>	Allows you to view device and network status and to manage printing functions from your computer instead of from the control panel; enables proactive one-on-one management.
<b>HP Web Jetadmin</b>	Provides network managers a single support tool to install, monitor, and troubleshoot a wide range of network-connected devices from an intuitive browser interface. While the HP Embedded Web Server is used to manage a single device, HP Web Jetadmin is used to manage groups of devices.
<b>HP Instant Support Professional Edition</b>	Connects you to the HP Web site to help you solve problems and answer questions. This service analyzes your device error log and configuration information to provide diagnostic and support information specific to your MFP.
<b>HP SureSupply</b>	Lets you conveniently and easily order supplies over the Internet. Enabled by HP Smart Printing Technology, SureSupply helps you track and manage supplies usage, and provides alerts when supplies should be reordered or replaced. With just a few clicks, access cartridge information, pricing, and purchasing options that best meet your needs—either from the reseller of your choice or from HP. (Program availability varies by region.)

<sup>7</sup> Using genuine HP supplies ensures availability of all HP printing features.

### **Setting up the MFP**

Unbox and set up the MFP, using the product documentation as a guide. Consider the following:

- Is the user documentation helpful?
- How does the overall product design contribute to ease of use?
- How well are you able to install and interact with supplies and accessories?

### **Testing product software**

- 1 Install the drivers and other device software and then print some test pages. Document any driver or software changes performed during testing.
- 2 Note which platforms and printer languages the drivers support.
- 3 Install and test all supported printer languages as time permits.
- 4 Evaluate the product software after installation:
  - Is the driver easy-to-use?
  - What special features or utilities does the driver include?
  - What special software or tools are available?
  - Does the product support legacy print jobs?

### **Interacting with the control panel**

Interact with the control panel. When comparing products, consider the following:

- In general, is the control panel easy to use?
- How easy is it to determine device, print job, and print cartridge status?
- Is it easy to make copies and send faxes from the control panel?
- Can you digitally send documents from the control panel?
- Can you access help options from the control panel?

## Versatility



## Flexible features support the needs of your demanding office

The HP LaserJet 4345mfp series is your advanced document creation solution. Print, scan, make copies, or take advantage of the stapling capabilities with the stapler/stacker accessory (standard with the HP LaserJet 4345 xs mfp). Add to this the ability to fax and digitally send documents. Turn your digital documents into stapled, sorted reports in one simple step. Create and manage frequently updated materials, saving the costs associated with outsourcing, the expenses of obsolete materials, and the time and costs of inventory management.

**Note** For ordering and additional information on all accessories, see Appendix D, “Accessories and supplies” on page 35.

### Generous paper input features

The MFP features a 100-sheet multipurpose tray and a 500-sheet input tray 2 standard. HP LaserJet 4345x, 4345xs, and 4345xm models include an additional 500-sheet input tray 3, and all models may be equipped with up to four 500-sheet input trays for a 2,100-sheet maximum input capacity, offering immediate access to many different paper sizes and types, which helps to save time spent replenishing paper.

The 100-sheet multipurpose tray supports heavy custom paper up to 53 lb (200 g/m<sup>2</sup>), offering the utmost in versatility. The 500-sheet input trays are fully adjustable to provide exceptional paper flexibility and minimize user intervention.

Take advantage of optional accessories that increase the productivity of your office. The optional MFP stand with storage cabinet raises the height of the MFP, provides storage for paper and supplies, and features wheels that increase the mobility of your MFP (standard with HP LaserJet 4345xs and 4345xm mfps). The optional 75-sheet envelope feeder allows you to process large batches of envelopes—improving office efficiency.

### Simple document creation

The HP LaserJet 4345mfp series features a 500-sheet output tray standard. To meet your unique business needs, you may also choose from the following optional output accessories:

- The stapler/stacker staples up to 30 pages and stacks up to 500 pages for easy document creation.
- Use the 3-bin mailbox to separate print, copy, or fax functions, assign user mailboxes, or stack up to 700 pages in one 500-sheet output tray and two 100-sheet output trays.

## Affordable and reliable analog faxing

Quickly and easily send and receive documents with the HP LaserJet MFP Analog Fax Accessory 300 (standard with HP LaserJet 4345x, 4345xs, and 4345xm mfps). The accessory provides the following capabilities:

- Efficiently process jobs at up to 33.6 kbps with the V.34 fax modem and save time and money with standard JBIG compression that shortens call time.
- Easily retrieve data with fax polling. Request information stored on another machine to automatically receive a fax with the desired information. Fax polling is just what you need to efficiently gather frequently used documents, such as forms or reports.
- Use the fax call report to view convenient thumbnails of faxes and to archive important fax information, including the time sent, content, and destination of a fax.
- Use manual memory lock to save fax jobs at the MFP until a PIN is entered to release the stored documents. Take advantage of the scheduled memory lock to specify the days and times you want faxes to print or be held on the device.
- Take advantage of fax forwarding to receive important faxes wherever you are. Route incoming faxes to another fax number when you or your clients are traveling or away from your primary fax. With easy-to-use fax forwarding, never miss a business-critical fax.
- Quickly and conveniently send analog faxes with a control panel fax icon.
- Get helpful feedback on your fax job with the one-line status on the device's control panel. Know the status of your fax in an instant with this informative display feature.
- HP DSS 4.0 lets you easily alternate between LAN and analog fax with a flexible configuration switch. The switch delivers seamless integration in LAN or analog environments, without having to reinstall or reconfigure the fax accessory.

## Effortless copying

The MFP may be used as a standalone, walk-up copier, and you do not need to be connected to the network or a computer to make copies. In copy mode, the MFP functions as a standard photocopier—place your originals on the scanner glass or use the automatic document feeder and adjust all copy settings at the control panel.

You can produce high quality copies at full engine speed—45 ppm letter (43 ppm A4)—with the automatic document feeder's 600 by 600 dpi scanner and HP FastRes 1200 dpi print quality.

## Automatic two-sided printing and copying

The MFP features automatic two-sided printing and copying (standard with HP LaserJet 4345x, 4345xs, and 4345xm mfps). Routinely printing documents on both sides reduces printing costs, virtually doubles the product's input capacity, and makes paperwork more manageable, freeing up space in your files and on your desk. Produce professional-looking documents on demand, without standing by the product and handling every page.

## Comprehensive compatibility

The HP LaserJet 4345mfp series is designed for business and is compatible with a wide range of operating systems and networks. The following features ensure that the product fits seamlessly into your existing office environment.

- The product includes a powerful HP Jetdirect Fast Ethernet embedded print server. The print server supports most common network environments and Internet protocols to enhance the product's versatility in administering over company intranets.
- With support for HP PCL 5e, HP PCL 6, and HP postscript level 3 emulation with automatic language switching, you can rely on effortless printing, every time.
- The MFP includes a 20 GB HP high-performance embedded hard disk, which provides a virtual mailbox to keep private documents confidential, and which allows you to proof a document before releasing the remaining copies and to store frequently printed jobs at the MFP for easy retrieval. For more information, see "Convenient job retention features" on page 20.

### HP mobile printing

Experience the ultimate in printing flexibility and freedom. HP is the industry leader for mobile and wireless printing solutions, offering the HP Jetdirect 802.11b/g wireless Ethernet print servers, the HP Bluetooth wireless printer adapter, and the HP Mobile Print Driver for Windows, a common driver for basic printing to nearly any HP printer. For more information, go to [www.hp.com/go/mpd4w](http://www.hp.com/go/mpd4w).

### HP's direct PDF printing

With the MFP's direct PDF printing solution, a PDF file (or multiple PDF files) can be sent right to the MFP from any device, without using PDF reader/converter software. The MFP directly renders PDFs to printed output, bypassing conversion processes used by other product-based solutions, which increases printing performance and removes possible conversion errors. HP's direct PDF printing enables driverless printing of PDF files, allowing printing from devices of all types, such as mobile phones, handheld computers, PDAs, and notebook computers.

### Optional wireless Multiplex XHTML-Print printing

Easily and reliably print from Bluetooth-enabled personal devices like mobile phones and pocket PCs via the optional HP bt1300 adapter. The MFP natively supports the page description language (PDL) Multiplex XHTML-Print, allowing you to effortlessly print e-mails, documents, or digital images and photos from personal devices, while being assured that what you see on your screen is what will print on the page.<sup>8</sup>

### Optional HP DSS 4.0 to improve business efficiency

The MFP features send to e-mail out of the box, but with the optional HP Digital Sending Software (DSS) 4.0, you can realize your MFP's full potential. Digital sending is a fast, simple, and secure way to capture paper-based documents in digital format so you can better process and route valuable information.

Easy to install, HP DSS 4.0 is the entry-level member of a family of server-based software products that enables paper documents to be incorporated into electronic business processes at the touch of a button. Digitized information can be sent quickly and securely to network folders, printers, and fax services, improving overall efficiency and business productivity, and reducing the costs of sharing and storing information.

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<sup>8</sup> For more information and a list of supported phones and other devices, go to [www.hp.com/support/bluetoothprinteradapter](http://www.hp.com/support/bluetoothprinteradapter).

HP DSS 4.0 offers peace of mind when digitally sending confidential information. You can transfer data from the MFP to a secure, supported folder with a secure send key. Authentication verifies the sender's identity, encryption protects files from outside access, and a final safeguard allows you to erase the device's hard drive.

Digital sending helps you convert your paper documents to digital format so you can work with the information more easily. The benefits to your business can be significant:

- Improve productivity and be more competitive
- Merge paper and electronic data so both are easier to share, edit, print, store, and retrieve
- Streamline business processes to reduce costs

**Note** A DSS 4.0 trial and demonstration CD is provided with the MFP.

### Optional HP AutoStore

For more advanced digital sending needs, purchase HP AutoStore, the premium member of a family of server-based software products designed to streamline your business. HP AutoStore sends to multiple document-management applications as well as network folders, printers, and fax services. The software comes standard with routing to Microsoft SharePoint Portal Server (version 2003), Microsoft Exchange, and Lotus Notes for easy integration into existing management systems. This market-leading software was *Transform Magazine's* Digital MFP-based Capture Product of the Year (2003) because it helps medium and large businesses with decentralized, paper-intensive workflows to enhance productivity, manage costs, and improve customer service.

## Evaluation

Produce the type of material typical for your day-to-day business, whether a report, booklets, high-quality brochure, or other professional documents. Note whether the finishing options available are what you typically require, whether producing material in-house or outsourcing. While you perform your evaluation, consider the following:

- The MFP should be easy to use. From the control panel, how easy is it to select options?
- Is the product customizable to meet your needs?
- Is the paper-handling system adjustable?
- Does the range of supported paper and paper sizes meet your needs? Does the product support special media, such as envelopes and transparencies?
- What are the product's input and output capacities? Is it easy to change paper sizes and types?
- Test the product's digital sending capabilities. Is it easy to navigate through menus and to send to e-mail?
- If faxing capabilities are enabled, fax some test documents. If the product has fax speed-dial capabilities, program some fax numbers. Consider the following:
  - Is the fax function easy to use?
  - What security features are available?
  - Are there speed-dial or frequently-used-number options?
  - Does the fax quality meet your expectations?
  - Do you encounter any problems sending or receiving faxes?
- Is automatic two-sided printing and copying available?
- Does the product offer advanced compatibility features, such as direct PDF or XHTML printing?

## Reliability



### Worry-free operation with HP LaserJet reliability

The HP LaserJet 4345mfp series sets the standard for industry reliability and provides a worry-free hardcopy solution. If you ever do need service and support, HP's Customer Care is one of the best. By being certain of a maximum uptime, you'll boost productivity and end frustration.

### Effortless legacy printing

Printing compatibility is an essential part of reducing costs and maintaining productivity. HP's printing software ensures that legacy jobs still print accurately. And because a networked HP LaserJet 4345mfp series can be supported and managed using your HP Web Jetadmin software, it provides an ideal complement to your existing HP printing infrastructure. (For more information, see "HP Web Jetadmin" on page 31.)

### Reliability matters

- The HP LaserJet 4345mfp series has HP's legendary reliability and ruggedness. With a duty cycle of up to 200,000 pages per month, this device is built to stand up to the demands of today's fast-paced business environment and keeps intervention rates low.
- HP conducts extensive testing, printing millions of test pages with a variety of applications and file types, in multiple environments, with different media types.
- The product comes standard with a one-year, next-day, on-site limited warranty.

### Excellent HP support

HP Customer Care includes all of HP's support programs and technologies, keeping commercial customers, small businesses, and individual consumers up and running. HP Customer Care offers full-service support through a broad range of services, including setup and installation, warranty upgrades, troubleshooting tools, repair and exchange services, phone and Web support, software updates, and self-maintenance services.

The HP Customer Care web site ([www.hp.com/go/support](http://www.hp.com/go/support)) provides customers with free, one-stop access to technical support for more than 600 HP products, including personal computers, printers, and imaging products. HP Customer Care call centers also provide technical support from numerous call centers worldwide.

At HP, we typically test our products in various environmental conditions to evaluate engine reliability. We run the products to engine life and record the supplies' life, jam rate, and misfeed rate.

This kind of extensive, long-term testing is beyond the limits of most company's resources; however, it is possible to estimate their product's engine reliability. One option is to compare other manufacturers' duty-cycle ratings, base warranty (make sure it is at least one-year), and three-year warranty costs. When comparing the HP LaserJet 4345mfp series with products from other manufacturers, consider the following:

- Does the product perform consistently under various environmental conditions?
- After a few thousand pages, is the print quality the same as it was out of the box?
- How easy is it to maintain the product?
- When connected to a network, does the product print correctly every time?
- What does it cost, in both expense and downtime, to replace empty print cartridges?

## Total cost of ownership



## Outstanding performer delivers return on investment

A successful MFP has to offer more than just superior performance and outstanding print quality. For many businesses, the total cost of ownership (TCO) is a critical part of the purchase decision. TCO takes into account everything from the initial investment, to support and maintenance costs, to the costs of supplies.

With the HP LaserJet 4345mfp series, you realize a great return on your investment. The all-inclusive MFP functionality increases productivity, and the intelligent device-management tools help reduce operator intervention to deliver the lowest total cost multifunction product in its class. A number of elements designed into the HP LaserJet 4345mfp series contribute to significant cost savings over time and a dramatically lower cost per page.

## Re-engineer your workflow

The HP LaserJet 4345mfp series enables customers to rethink their communication processes and distribute digital paperwork around the corner or around the world. Doing so can dramatically cut printing and paper expenses. The MFP comes standard with send to e-mail capabilities, including LDAP and address book support. Optional HP DSS 4.0 further reduces manual processes and not only enables content to be available sooner and processes to be initiated faster but also cuts down on the costs of physically handling and distributing information. Storing content electronically conserves floor space and money that would have been spent on physical storage. HP DSS 4.0 streamlines your document workflow by incorporating paper documents into business processes to improve efficiency and productivity and to save money. Add optional HP AutoStore software and transform your document workflow. HP AutoStore effortlessly routes information to document management applications such as Microsoft SharePoint Portal Server (version 2003), Microsoft Exchange, and Lotus Notes.

Save time and resources with the HP Embedded Web Server, which provides customizable e-mail status alerts and allows you to remotely perform diagnostics and take advantage of automated supplies ordering. Use HP Web Jetadmin to manage fleets of network peripherals. HP Web Jetadmin provides network managers a single support tool to install, monitor, and troubleshoot a wide range of network-connected devices from an intuitive browser interface.

## Simplify, save time, and reduce costs

- By supporting one device rather than four, you can reduce costs by managing fewer supplies and minimizing storage requirements and service interruptions.
- Use less power—the MFP has two PowerSave modes: PowerSave mode enables you to conserve energy by maintaining a lower fuser temperature during periods of MFP inactivity; Sleep mode conserves even more energy by partially turning off the power supply.

- The HP LaserJet 4345mfp series delivers up to 45 ppm laser printing, powerful processing, high-quality output, and efficient network sharing.
- You can upgrade with a variety of optional features, including additional memory, fonts, or storage, and third-party solutions. For more information, see “Versatility” on page 11.
- Multiple paper handling options and a low-maintenance design reduce the need to interact with the product and keep your office productive.
- The familiar HP interface is preferred by most office users and requires very little training.

## Worry-free operation

The product comes standard with a one-year, next-day, on-site limited warranty. In addition, a wide array of service and support options are available, including maintenance support and extended on-site warranties, which vary by region.

By far the biggest contributor to user productivity is the reliability of HP equipment, support, and service. Instead of experiencing frustration and downtime while waiting for repair, users are getting their work done.

## Evaluation

Total cost of ownership is more than just purchase price and cost per page. To calculate the *true* total cost of ownership, consider the following factors:

- Initial purchase price, including all accessories. To ensure accurate comparisons between manufacturers, be sure to compare street prices (or what you actually pay) instead of list prices.
- Warranty and service costs.
- Opportunity costs of outsourcing vs. in-house document production.
- User productivity costs. (How easy is it to learn to use the product? How easy is it to process your documents correctly?)
- Cost per page (or the cost of supplies):

It is difficult for end-users to calculate the cost per page due to many variables. When assessing cost per page, keep the following in mind:

- Make sure the cost per page associated with a product’s print sample represents that sample. Some manufacturers may quote the cost of printing in a draft mode, when the sample they give you is printed in their best mode, which requires more toner.
- Make sure all the supplies are included in the cost per page calculation and not hidden as service items. Also, remember that supplies used during routine cleaning and warm-up cycles are not always included in the supplies’ yields, which directly affects cost.
- Watch for other hidden costs (such as unusable output, which wastes toner).

## Performance



### Save time with fast printing, copying, faxing, and digital sending

Product performance is more than a measure of pages per minute. Rather, product performance is the speed at which a product can turn electronic files into printed pages. In addition to engine speed, several factors affect the time it takes to print a job, including the use of specialty paper, computer download time, and device processing time. The time it takes for your computer to download a job to the MFP, and for the MFP to process the job, depends on the following variables:

- The MFP's I/O configuration (network or parallel speed)
- The speed of your computer
- The amount of device memory installed
- The network operating system and configuration
- The throughput speed of the network print server
- Printer personality or language (such as PCL or PostScript®)

A better performing product leads to higher productivity in your workplace. You spend less time waiting, output appears faster, and network traffic is minimized.

### Increase office efficiency

With a 533 MHz processor, 256 MB standard RAM (expandable to 512 MB), and a powerful HP Jetdirect Fast Ethernet embedded print server, the product is designed to process jobs quickly for increased uptime. To heighten performance, the MFP features Memory Enhancement technology (MEt), which automatically compresses data, virtually doubling the MFP memory and allowing more complex printing with available memory.

Depend on office efficiency with the MFP. Print and copy high-quality FastRes 1200 documents at up to 45 ppm for typical letter documents (43 ppm A4). The product includes HP PCL 6 for optimum performance, HP PCL 5e for backward compatibility, and HP postscript level 3 emulation for PostScript print jobs. Automatic language switching ensures that the appropriate printer language is used for each print job.

To optimize performance, the HP LaserJet 4345mfp series features Instant-on Technology, which virtually eliminates warm-up time and delivers a first page out print speed of less than 10 seconds for typical letter and A4 documents. The predictive ready-to-print algorithm processes jobs in parallel with printing and improves the first page out print speed over time. Because there is no warm-up time, the MFP consumes less energy and realizes less wear on the engine.

# Convenient job retention features

There are four job retention features: Quick Copy, Proof and Hold, Private Printing, and Stored Job.

<b>Quick Copy</b>	Prints the requested number of copies of a job and stores a copy of the job on the MFP's hard disk. Additional copies of the job can be printed later, directly from the MFP's control panel.
<b>Proof and Hold</b>	Provides a quick and easy way to print and review the first copy of a job with multiple copies. After reviewing the first copy, you can either print the remaining copies, which have been saved at the MFP, or cancel the job from the control panel. After all copies are printed, the Proof and Hold job is deleted from the MFP. This reduces network traffic, paper waste, and supplies costs.
<b>Private Printing (virtual mailbox)</b>	Lets you protect confidential documents by allowing you to hold a job for printing until you release it using a 4-digit Personal Identification Number (PIN) through the MFP's control panel. When you enter the PIN in the driver, it is sent to the MFP as part of the print job.
<b>Stored Job</b>	Allows you to download a print job to the MFP without printing it. You can then print the job at any time from the MFP's control panel. For example, you may want to download a personnel form, calendar, time sheet, or accounting form that other users can access and print.

## Evaluation

### Creating samples

First, develop a group of sample documents that represent what an end-user typically prints. This is the best method for determining if a product is suited to your environment.

**Note** It is important to test files like those that a typical user will print. Most print samples included with a product have been optimized for that product and may not reflect the type of output you will receive.

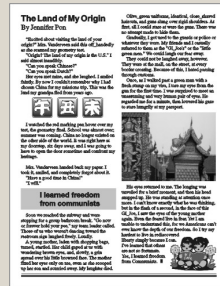
When evaluating performance, your print samples should include multiple documents and file types, each created in the applications that will be used by the end-user. The samples should have different elements (text, graphics, and photographic images) and should vary in complexity and page length. Some suggested content includes simple text documents, mixed text and graphics, and complex graphics containing photographic images.

**CAUTION!** Using only one application or file can skew test results. Use several types of files and applications to present a broad and realistic performance picture.

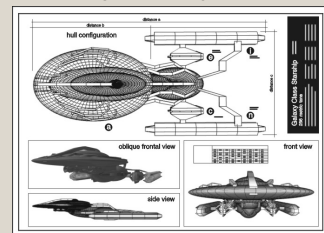
#### Simple—text only



#### Mixed—from complex text to a mixture of text and medium-complexity graphics



#### Complex—images and advanced graphics (using overlays or fill patterns)



Different manufacturers provide different print modes (such as FastRes 1200). Try to compare similar modes to achieve a fair comparison.

To evaluate the print quality and speed of text documents, such as those created in Microsoft Word and Excel, you should print them in different print modes. Documents such as newsletters intended for circulation or image files, where photo quality is desired, are preferably printed in the best mode.

### Evaluation guidelines

Before you print the sample documents, make sure that your test environment simulates the end-user's and that you make a fair comparison between products. Follow the guidelines below:

#### Measure performance from the end-user's perspective.

- Print from computer systems that closely match the typical end-user's.
- Test multiple media sizes and types.
- Test MFP features (copying, scanning, faxing, digital sending, two-sided printing, multiple pages per sheet, etc.).
- Test and compare default settings. (What settings will the end-users use most often?)

#### When evaluating more than one product, it is crucial that you make a fair comparison between products.

- Print from identical computer systems so that variations in speed are not due to differences in processing power.
- Print the same files on all products, using the same print media and the same or equivalent settings. Print modes such as FastRes 1200 and 300 dpi need to be tested separately for each product and compared respectively. The HP LaserJet 4345mfp series includes three print modes:
  - FastRes 1200: This setting produces 600 by 600 dpi enhanced with HP REt (Resolution Enhancement technology), which prints at 2-bits per pixel, creating additional levels of gray and markedly better print quality than traditional 600 dpi. This is the default print setting and prints at full engine speed (up to 43 ppm).
  - 600 dpi: This setting produces high quality printing at full engine speed.
  - 300 dpi: This setting can be used for draft printing.
- Use the same operating system and software application and be sure to test comparable printer drivers. (Each of these components interacts with the printing process and can affect performance.)

### Evaluating printing performance

Using the samples that you created, perform the following tests to gauge product performance.

<b>First-page-out</b>	The time from when the print command is issued to a product that is in <i>sleep</i> mode until the completion of the first page. This test measures the effect of an instant-on fuser and shows a product's true speed.
<b>Click-to-drop</b>	The time from when the print command is issued until the completion of the print job.
<b>Pick-to-drop</b>	The time from when the first piece of paper is picked up by the product until the completion of the print job.
<b>Return-to-application</b>	The time from when the print command is issued until the time when the computer is available for other tasks.

Follow the guidelines below when measuring printing performance:

- Be sure to measure the amount of time it takes to print a *complete* document. (For example, you might print a ten-page, two-sided, stapled document with a company logo on the first page.)

**Note** A professional printing device is designed to print multiple-page documents. We suggest that you print either multiple-page documents or multiple copies of a single page.

- Record any error messages.
- Perform each test three times to obtain an average. If the variances in the three tests are too much, discard the result, check the system, and redo the test.
- Look at each page to make sure all text and graphics printed correctly. Files that print significantly faster on one product might not be printing correctly. Some products drop complex graphics and images when they are unable to process the whole job. Examine output to ensure that the entire document printed and that it printed correctly.
- When comparing product performance, look beyond the speed trial data and consider the acceptability of the output. There are definitely tradeoffs in print quality, but as you review your results, look at the samples and consider whether the quality meets your standards. Also, make sure that toner is adhering to the paper properly.

### **Evaluating copying performance**

High resolution does not directly correlate to copy quality. Copy the type of material you typically copy, whether a book, magazine, sales brochure, or other high-quality content.

- Does the copy quality meet your expectations?
- How easy is it to adjust image quality and select output options from the control panel?
- How quickly does the page copy?
- Does it take multiple adjustments and multiple copies to get good copy quality?

### **Evaluating scanning performance**

Scan several documents, images, and photos.

- How easy is it to configure scanning options from the control panel?
- Is the scanning software easy to use? Are there options for scanning specific document and image types?
- Does the quality of the scanned image meet your expectations? How easy is it to obtain a satisfactory image?

## Print and copy quality



## Produce great-looking documents with industry-leading print quality

There are many different factors to consider when evaluating the overall quality of a product's output. Print and copy quality involves more than the number of dots per inch (dpi) that the product places on a page; a higher dpi does not necessarily mean better print quality.

### High-quality output

Through great technology and inventive engineering, the HP LaserJet 4345mfp series provides the high-quality output customers have come to expect from HP while delivering the performance you need. FastRes 1200 is the MFP's default setting. It provides 1200 dpi equivalent quality at full engine speed. HP FastRes gives you professional print quality that rivals that of competitor's higher resolution products, without the performance penalties. HP FastRes 1200 can represent each dot space as one of four different levels of black, similar to true 1200 dpi. However, HP FastRes uses only one-half as much RAM to store information for each dot space. This means smaller file sizes, which translates to reduced memory requirements, less network traffic, and faster image processing.

In addition, smooth HP toner particles produce true HP LaserJet print quality—clear, sharp text, smooth grayscales, and deep blacks. Consistent toner particle size enables accurate placement and control while maximizing the efficiency of how toner is used. Continuous improvements to HP toner formulas enable reliable, high-quality results at a broad range of print speeds.

### Reliable scanning

Enjoy quick, color scanning speeds of up to 45 ppm letter (43 ppm A4) with the automatic document feeder at 600 by 600 dpi resolution for easy, two-sided copying, faxing, and scanning.

Count on the product to deliver excellent document and imaging quality for professional hardcopy output and reliable digital processing. The product's powerful digital sending capabilities enable convenient and effective handling of your hardcopy documents.

## Printing samples

It is important to test files like those that are printed in your workplace. Most print quality files or print samples included with a product have been optimized for that product and may not reflect the output you will receive. You may want to use the samples you created for evaluating performance (see “Creating samples” on page 20). Follow these guidelines for printing sample documents:

- When evaluating more than one product’s print quality, it is crucial that you make a fair comparison between products. Print the same files on all products, using the same or equivalent settings. Use the same operating system and software application, and be sure to test comparable printer drivers. (Each of these components interacts with the printing process and can affect print quality.)
- Use more than one software application to make sure software/driver conflicts are not affecting print quality.
- Plain papers vary among brands and the regions in which they are manufactured. Some plain papers have a preferred print side. You should also take into account storage conditions as well as how the papers handle toner.
- Temperature and humidity should be kept constant for each product tested. These factors can have an impact on final print quality.

## Viewing samples

Ideally, print quality should be evaluated under a mix of fluorescent and incandescent lighting. Print quality should not be evaluated too close to windows, since natural light changes dramatically with variations in weather and time of day.

In addition, the color of the surrounding area can significantly affect quality perception. White surroundings may call undue attention to the color of the paper. Medium or light gray is usually the best choice for the area surrounding where the sample documents will be evaluated.

Individuals may perceive print quality differently. HP suggests that you have several people evaluate your sample documents, in the same environment, with a consistent light source. Have them vote on the samples that they like by listing them in order from the best to the worst. Allow each person to rate the samples independently and then record the results. Also, have each person establish a *cut line* for acceptable print quality for the end-user environment.

**Note** This process is referred to as psychometric testing and should be performed on all of the sample documents that you are using to evaluate text, graphics, and image quality.

## Evaluating output quality

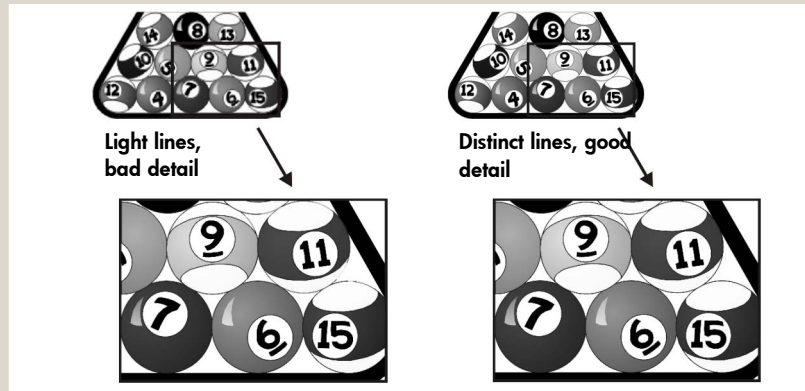
When you evaluate print quality, avoid magnification. Under magnification, insignificant differences become huge. However, careful inspection is still necessary, and when doing this, look for the following characteristics:

### Text output quality

- Text should be dark, not faded.
- Text should be solid black, without hollow spots.
- Edges should be crisp and smooth, not jagged.
- There should be little or no toner scattered on the non-printed areas of the paper.
- Reverse text should be fully visible, no toner filling lines.
- Portrait and landscape text should have the same print quality.

### Graphics output quality

- Fine lines should be distinct, not blending into each other or dropping out.
- Gray shading should go from light to dark in many layers, giving detail and depth to the image.
- Solid black areas should be consistent to the eye with no patches of lighter shades or lines.
- Solid black areas should not appear glossy. This reduces readability.
- There should be no bands across graphics.



### Image output quality

- Images should be clear and sharp.
- There should be no bands across images.
- There should be no graininess or visibility of dots.

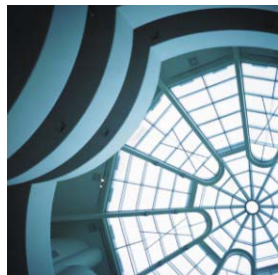


### Evaluating document durability and usability

After you have finished evaluating the print quality of your samples, evaluate the documents' durability and usability. Test the following:

- Can the printed output be fed through a copier without being damaged?
- Will the printed output smear with moisture?
- Can the printed output be easily scratched, melted, or otherwise damaged?
- Is the printed output durable? Can it be folded?

## Network management solutions



## Unsurpassed HP Jetdirect networking

The HP LaserJet 4345mfp series is designed to integrate seamlessly into all major networking environments. Support for industry-leading network management tools provides convenient and efficient device administration. In addition, the HP LaserJet 4345mfp series incorporates sophisticated hardware and software features to make device management scalable to meet your business needs.

### Robust networking

The HP Jetdirect Fast Ethernet embedded print server is compatible with most major network operating systems and protocols. Support for Internet protocols such as TCP/IP enhances the MFP's versatility when administering over company intranets. HP Jetdirect print servers provide the simplest, most reliable way to share printing devices.

The HP Jetdirect Fast Ethernet embedded print server supports Microsoft® Windows 98, Me, Windows NT 4.0®, 2000, XP, XP 64-Bit, Server 2003; Novell NetWare 3.2, 4.2, 5.x, 6.x; Apple Mac OS 8.6 and later; Red Hat Linux 6.x and later; SuSE Linux 6.x and later; HP-UX 10.20, 11.x; Solaris 2.5x, 2.6, 7, 8, 9, 10 (SPARC systems only); IBM AIX 3.2.5 and later; MPE-iX; Citrix MetaFrame; Windows Terminal Services.

### Manage from anywhere

With HP Web Jetadmin and the HP Embedded Web Server, busy MIS/IT managers can configure, monitor, and troubleshoot via the Internet using Netscape or Microsoft Web browsers. HP Web Jetadmin lets you use one management utility for all networked peripheral, simplifying management and improving uptime. HP Web Jetadmin enables simple remote installation, configuration, diagnostics, and proactive management of multiple devices.

When evaluating network capability, it is important to test the network solution for both the network administrator and the end-user.

### **For the network administrator**

- Determine if your network operating systems are supported.
- Install and configure the product and administrative software and simulate connecting end-users. (Keep track of the resources and time required, and the ease of setup.)
- Examine the following:
  - Ease of network installation
  - Network security
  - Product diagnostics and troubleshooting
  - Product alerts and status
  - Product grouping, filtering, or mapping

**Note** Try to assess the time efficiency and convenience of the network management utilities.

### **For the end-user**

Make sure that the user can easily determine:

- What devices are available?
- Where are they relative to my desk?
- What are their features?
- What is the MFP's status?
- Is my job done yet?
- Is the MFP out of paper? Is there a paper jam? Is there enough toner to finish my job?

The user does NOT want to know:

- Status of all the devices on the network.
- Diagnostic information for all devices on the network.

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## A—Imaging and printing services

HP's Imaging and Printing Services portfolio provides large and enterprise businesses with efficient, flexible, and cost-effective ways to manage printing. These services are fully scalable and range from assessment and strategy to complete outsourced management.

### HP Managed Office Services for Imaging and Printing

HP Managed Office Services for Imaging and Printing include consulting, integration, management, and support and are custom-designed to your unique imaging and printing environment. The services offer assessment and design consulting, full project management through implementation, on-site office services management to handle day-to-day imaging and printing needs, and an account manager to provide regular reviews and recommendations for continuous improvement.

HP's Managed Services for Imaging and Printing not only offer significant cost savings and service level improvements through environment and process optimization, but they also enable you to focus your valuable resources on core business initiatives. HP's skilled services team will help you evaluate your environment to develop the solutions and financing options that best suit your company's needs.

### HP Pay per use for Imaging and Printing Solutions

HP Pay per use for Imaging and Printing Solutions deliver a scalable standard and custom service options tailored to meet your specific needs. HP provides everything you need for reliable printing, including site assessment and design for optimized print productivity coupled with unsurpassed repair and maintenance support. In addition, HP ensures that you'll always have an adequate supply of print cartridges, and that empty cartridges will be replaced and disposed of properly. This results in improved device management that can reduce costs up to 30 percent, depending on company size. HP's Pay per use Solutions conserve capital, improve asset control, preserve existing lines of credit, and provide protection against technology obsolescence. A variety of flexible, all-inclusive pay-per-use solutions are available through level pay, base plus click, and cost per page billing options with three, four, or five-year agreements and guaranteed support response times.

For more information, go to: [www.hp.com/go/tpm](http://www.hp.com/go/tpm).

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## B—Productivity tools and services

The HP LaserJet productivity tools and services provide convenient access to device information, settings, and support, and are available for the life of your product—even after the warranty expires. They include the following:

- HP Embedded Web Server
- HP Web Jetadmin
- HP Instant Support Professional Edition
- HP SureSupply

### HP Embedded Web Server

The HP Embedded Web Server provides a universal interface to the device that anyone with a network-connected PC and a standard Web browser can easily access. It requires no special software to install or configure. The HP Embedded Web Server allows you to display status information, change settings, and manage the MFP from your computer.

The HP Embedded Web Server requires a connection to the network via an HP Jetdirect print server, which comes standard with the MFP. To use the HP Embedded Web Server, you need the following:

- A TCP/IP-based network
- A supported Web browser installed on your computer

**Note** You can gain access to the HP Embedded Web Server from any operating system that supports the TCP/IP protocol and a Web browser. Parallel cable connections and IPX-based network connections are not supported. You cannot view the HP Embedded Web Server pages from outside a firewall.

You do not have to have Internet access to open and use the HP Embedded Web Server. For more information, see the HP Embedded Web Server User Guide located on the software CD included with the product.

### Using the HP Embedded Web Server

When the MFP is connected to the network, the HP Embedded Web Server is automatically available. The HP Embedded Web Server allows you to view device and network status and to manage printing functions from your computer instead of from the control panel. Below are examples of what you can do using the HP Embedded Web Server:

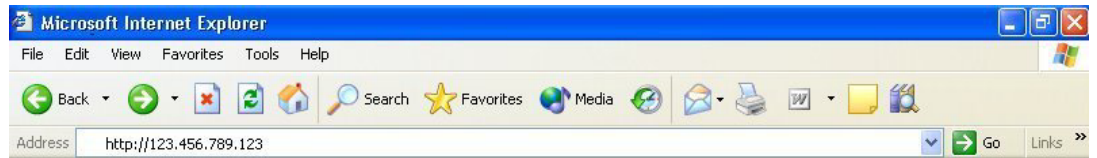
- View device status information
- Set the type of paper loaded in each tray
- Determine the remaining life on supplies and order new supplies on-line
- View and change tray configurations
- View and change the control panel menu configuration
- View and print internal pages
- Receive notification of MFP and supplies events
- View and change network configuration

## Accessing the HP Embedded Web Server

You can access the HP Embedded Web Server in the following ways:

- From a Web browser

In a supported Web browser on your computer, type the IP address assigned to the device. For example, if the device's IP address is 123.456.789.123, you would type "http://123.456.789.123" into your Web browser's **Address** or **Go to** field. (The device IP address is listed on the Jetdirect Configuration page.)

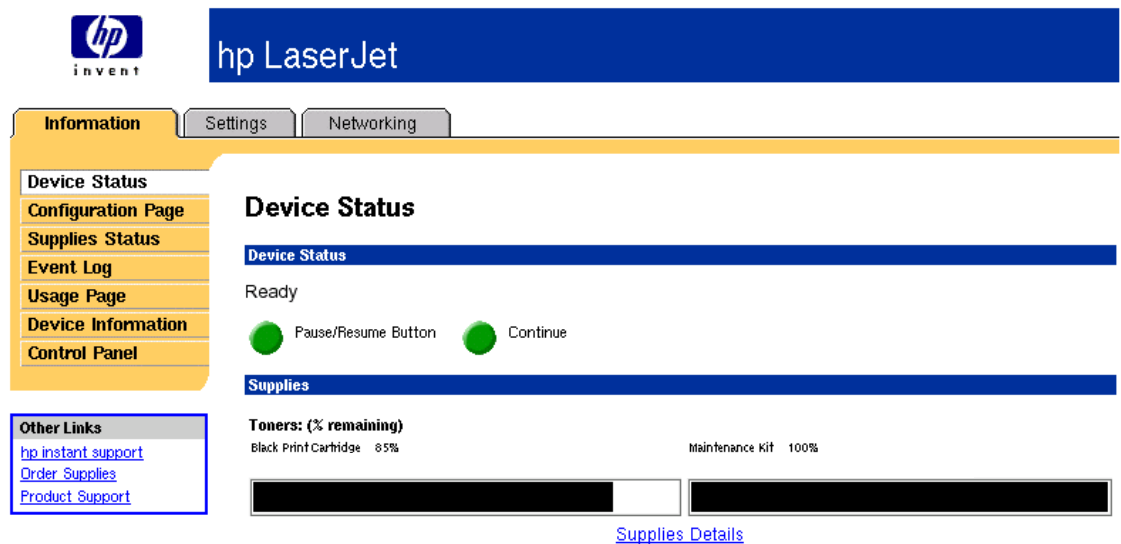


- From HP Web Jetadmin

**Note** After you access the HP Embedded Web Server, you can bookmark it in your browser so that you can return to it quickly in the future.

The HP Embedded Web Server has the following sections:

- **Information** tab
- **Settings** tab
- **Networking** tab



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## HP Web Jetadmin

HP Web Jetadmin is a simple, Web-based peripheral management utility for remotely installing, configuring, and managing a wide variety of HP and non-HP network peripherals. With advanced security features, you can be assured that HP Web Jetadmin and your network-connected peripherals are well protected. HP Web Jetadmin increases business productivity by helping you manage supplies, proactively address potential printing problems, configure peripheral drivers, and update firmware. Best of all, HP Web Jetadmin provides all of the peripheral management capabilities you need in one easy-to-use Web browser interface.

**Note** HP Web Jetadmin is not included with the MFP installation software but can be downloaded from the HP Web site at [www.hp.com/go/webjetadmin](http://www.hp.com/go/webjetadmin).

### Remote management

- Easily install and manage peripherals. Through a standard Web browser, you can configure devices, conduct remote diagnostics, update firmware, and organize devices into groups.
- Navigate quickly and easily. The tree-structured layout is easy to use thanks to an intuitive, task-oriented interface.
- Take advantage of complete management. Expandable functionality via optional plug-ins allows all printing needs to be easily managed. Firmware can be installed, configured, and updated simultaneously for all supported devices within a list or group.
- Employ time-saving autogrouping features. Autogrouping allows administrators to have newly discovered devices automatically placed into a group based on filter criteria.

### Proactive management

- Solve problems preemptively. Management of HP and other standards-compliant devices allows you to solve potential problems before they impact user productivity.
- Automatically e-mail device alerts and real-time status reports. Configure which devices to monitor, the content of the message, and who receives the notification.
- Protect your investment. The intelligent update feature lets you download the latest device plug-ins, language packs, or application plug-ins without requalifying or reinstalling HP Web Jetadmin.

### Advanced security

- Relax with secure network settings. HP Web Jetadmin supports Secure Socket Layer (SSL) and Simple Network Management Protocol (SNMP) v 3.0 for even greater security.
- Rely on simple, cost-effective administration with Windows NT user authentication. System administrators can associate each user's NT Domain account with a profile on the HP Web Jetadmin server.

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## HP Instant Support Professional Edition

HP Instant Support Professional Edition (ISPE) is a suite of Web-based troubleshooting tools that analyzes your HP MFP data as well as your Microsoft Windows operating system to provide automated solutions online. Working with information collected by the HP Embedded Web Server, HP ISPE delivers custom-tailored solutions to your printing issues and includes access to Windows-related functions, such as driver update checks and the ability to troubleshoot your complete HP desktop and peripherals environment.

### HP expert help online

HP ISPE's Active Chat allows you to get personalized Web-based help from an HP support expert on demand. Simply submit a question or a description of your problem. Your recent history, system configuration, and the actions you have already taken are securely encrypted and, upon your approval, automatically forwarded to HP. An HP support expert will work to resolve your problem through a real-time chat session.

### Knowledge at your fingertips

The HP ISPE knowledge database enables you to quickly find answers to your questions. Submit a query, and a powerful search engine responds with the information you need.

## HP SureSupply

HP SureSupply lets you conveniently and easily order supplies over the Internet. Enabled by HP Smart Printing Technology,<sup>9</sup> SureSupply helps you track and manage supplies usage, and provides alerts when supplies should be reordered or replaced. With just a few clicks, access cartridge information, pricing, and purchasing options that best meet your needs—either from the reseller of your choice or from HP. (Program availability varies by region.)

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<sup>9</sup> Using genuine HP supplies ensures availability of all HP printing features.

# C—Technical specifications

<b>Print and copy speed<sup>10</sup></b>	45 ppm letter (43 ppm A4), single-sided
<b>First page out</b>	Less than 10 seconds
<b>Scanner resolution</b>	600 by 600 dpi
<b>Output resolution</b>	600 by 600 dpi with REt, HP FastRes 1200 (1200 dpi quality) at engine speed (PCL 6 and HP postscript level 3 emulation), Device-best halftoning with up to 256 levels of gray
<b>Copy features</b>	Reduce or enlarge: 25 to 400% from scanner glass (25 to 200% from ADF); resolution: 600 by 600 dpi; scalability, contrast, background removal, sharpness, N- or Z- ordering, change size, change orientation
<b>Fax features</b>	Fax speed: up to 33.6 kbps; resolution (Superfine mode): 300 by 300 dpi; JBIG compression fax forwarding, fax polling, and auto redialing supported
<b>Digital sending features</b>	Embedded scan to e-mail standard; optional (via HP DSS 4.0) send to folder, authentication, send to LAN fax, send to printer, send to application
<b>Microprocessor</b>	533 MHz
<b>Memory</b>	256 MB DDR RAM, expandable to 512 MB via one open DDR DIMM slot
<b>Hard disk</b>	20 GB HP high-performance embedded hard disk
<b>Duty cycle</b>	200,000 pages-per-month device
<b>Connectivity</b>	Bidirectional IEEE-1284-B compliant parallel port, one open EIO slot, HP Jetdirect Fast Ethernet embedded print server, Jetlink port, FIH, RJ-11 port (fax connection, standard with 4345x, 4345xs, 4345xm)
<b>Printer language</b>	HP PCL 6, HP PCL 5e, HP postscript level 3 emulation, direct PDF printing (v 1.3), XHTML-Print v 0.95, PML (Printer Management Language)
<b>Font capabilities</b>	80 scalable TrueType fonts
<b>Paper handling</b>	Maximum 2,100-sheet input: Multipurpose tray: 100-sheet input tray Tray 2: 500-sheet input tray Optional tray 3: 500-sheet input tray (standard with 4345x, 4345xs, and 4345xm) Optional trays 4 and 5: 500-sheet input tray  Output: 500-sheet output bin or optional output accessory: 500-sheet stapler/stacker (standard with 4345xm) 700-sheet 3-bin mailbox (standard with 4345xm)  Automatic two-sided printing accessory (standard with 4345x, 4345xs, and 4345xm) 50-sheet automatic document feeder (ADF) Optional 75-sheet envelope feeder Jetlink port enables third-party solutions

<sup>10</sup> Exact speed varies depending on the system configuration, software program, and document complexity.

<b>Supported paper sizes</b>	<p>Multipurpose tray, 3-bin mailbox, and stacker element of stapler/stacker: 3 by 5 in (76 by 127 mm) to 8.5 by 14 in (216 by 356 mm); letter, legal, executive, statement, 8.5 x 13 in, envelopes, A4, A5, B5 (JIS), executive (JIS), 16K, D Postcard (JIS)</p> <p>500-sheet trays: 5.8 by 8.3 in (148 by 210 mm) to 8.5 by 14 in (216 by 356 mm); letter, legal, executive, 8.5 x 13 in, A4, A5, B5 (JIS), executive (JIS), 16K</p> <p>Custom sizes not supported on optional automatic two-sided printing accessory, envelope feeder, stapler</p>
<b>Paper weights</b>	<p>Multipurpose tray, 3-bin mailbox: 16 to 53 lb (60 to 200 g/m<sup>2</sup>)</p> <p>Trays 2, 3, 4, 5, automatic two-sided printing accessory, stapler/stacker: 16 to 32 lb (60 to 120 g/m<sup>2</sup>)</p> <p>Optional envelope feeder: 20 to 28 lb (75 to 105 g/m<sup>2</sup>)</p>
<b>Media types</b>	Paper (plain, preprinted, letterhead, prepunched, bond, recycled, color, rough), transparencies, labels, envelopes, cardstock
<b>Environmental ranges</b>	<p>Operating temperature: 50 to 91° F (10 to 32.5° C)</p> <p>Storage temperature: 32 to 95° F (0 to 35° C)</p> <p>Operating humidity: 10 to 80 percent RH</p>
<b>Acoustics</b>	<p>Printing: 7.0 B(A); copying: 7.4 B(A)</p> <p>Standby: 3.3 B(A)</p>
<b>Power requirements</b>	<p>100 to 127 volts (± 10 percent): 50 to 60 Hz (±2 Hz)</p> <p>220 to 240 volts (± 10 percent): 50 to 60 Hz (±2 Hz)</p>
<b>Power consumption<sup>11</sup> (ENERGY STAR® compliant)</b>	<p>Maximum: 790 watts printing, 800 watts copying</p> <p>Standby: 49 watts (4345: 44 watts)</p> <p>Powersave: 15 watts</p> <p>Off: 0.25 watts</p>
<b>Dimensions (w by d by h)</b>	<p>4345: 30 by 19 by 21.5 in (762 by 483 by 545 mm)</p> <p>4345x: 30 by 19 by 26.3 in (762 by 483 by 667 mm)</p> <p>4345xs and 4345xm: 36 by 19 by 43.7 in (914 by 483 by 1110 mm)</p>
<b>Weight</b>	<p>4345: 113.7 lb (51.6 kg)</p> <p>4345x: 120.33 lb (54.6 kg)</p> <p>4345xs: 153.03 lb (69.4 kg)</p> <p>4345xm: 152.53 lb (69.3 kg)</p>
<b>Network operating systems</b>	Via the HP Jetdirect Fast Ethernet embedded print server: Microsoft Windows 98, Me, NT 4.0, 2000, XP, XP 64-Bit, Server 2003; Novell NetWare 3.2, 4.2, 5.x, 6.x; Apple Mac OS 8.6 and later; Red Hat Linux 6.x and later; SuSE Linux 6.x and later; HP-UX 10.20, 11.x; Solaris 2.5x, 2.6, 7, 8, 9, 10 (SPARC systems only); IBM AIX 3.2.5 and later; MPE-iX; Citrix MetaFrame; Windows Terminal Services
<b>Network protocols</b>	Via the HP Jetdirect Fast Ethernet embedded print server: TCP/IP (IP Direct mode; may require software from the NOS vendor or third party vendor: LPD, FTP, IPP), IPX/SPX, DLC/LLC, AppleTalk, Auto-IP, Apple Rendezvous compatible, NDS, Bindery, NCP, Telnet, SLP, IGMP, BOOTP/DHCP, WINS, SNMP (v 1, 2c, 3), HTTP
<b>Operating systems</b>	Microsoft Windows 98, Me, NT 4.0 (parallel and network connections only), 2000, XP, Server 2003; Apple Mac OS 9.x and later, OS X v 10.1 or later
<b>Warranty</b>	One-year, next-day on-site limited warranty

<sup>11</sup> Values subject to change. See [www.hp.com/support/lj4345mpf](http://www.hp.com/support/lj4345mpf) for current information. Power numbers are the highest values measured using all standard voltages.

## D—Accessories and supplies

Use accessories and supplies specifically designed for the MFP to ensure optimal performance. To order the product accessories and supplies listed here, go to the HP Web site at [www.hp.com/ghp/buyon-line.html](http://www.hp.com/ghp/buyon-line.html). If you don't have access to the Internet, contact your HP dealer, or call HP at (800) 613-2222 (U.S.).

<b>Paper handling</b>	500-sheet input feeder tray Automatic two-sided printing accessory 75-sheet envelope feeder Stapler/stacker 3-bin mailbox MFP stand with storage cabinet	Q5968A Q5969A Q2438B Q5691A Q5692A Q5970A
<b>Print cartridge</b>	HP LaserJet print cartridge with Smart Printing Technology <sup>12</sup>	Q5945A
<b>HP LaserJet MFP Analog Fax Accessory 300</b>	This easy-to-install, internal fax card improves office productivity by increasing the functionality of your MFP with features that include: 33.6 kbps processing speed, thumbnail of first page on fax call report, fax forwarding, fax polling receive, memory lock, JBIG compression, and, when running HP DSS 4.0, configuration switch between LAN and analog fax.	Q3701A
<b>HP Digital Sending Software 4.0</b>	The entry-level member of a family of server-based software products that enables paper documents to be incorporated into electronic business processes at the touch of a button. Digitized information can be sent quickly and securely to network folders, printers, and fax services, improving productivity, and reducing the costs of sharing and storing information.	T1936AA
<b>HP AutoStore</b>	The premium member of a family of server-based software products that streamline business processes. Use HP AutoStore to route to multiple document management applications as well as network folders, printers, and fax services. The software comes standard with routing to Microsoft SharePoint Portal Server (version 2003), Microsoft Exchange, and Lotus Notes for easy integration into existing management systems.	T1943AA
<b>Supplies</b>	ADF replacement Mylar sheets (package of 3) Staple cartridge refill (5,000 staples)	Q6496A C8091A
<b>Memory</b>	64 MB 100-pin DDR DIMM 128 MB 100-pin DDR DIMM 256 MB 100-pin DDR DIMM 512 MB 100-pin DDR DIMM	Q2625A Q2626A Q2627A Q2628A
<b>Print servers</b>	HP Jetdirect 625n Gigabit Ethernet internal print server HP Jetdirect 620n Fast Ethernet internal print server HP Jetdirect 680n 602.11b wireless Ethernet internal print server	J7960A J7934A J7942A
<b>Bluetooth connectivity</b>	HP bt1300 Bluetooth wireless printer adapter	J6072A
<b>Maintenance kits</b>	ADF maintenance kit 110-volt printer maintenance kit 220-volt printer maintenance kit	Q5997A Q5998A Q5999A
<b>Service and support</b>	3-year next business day onsite 9x5x5 3-year 4 hour response 9x5x5 (not available in the U.S.) 3-year 4 hour response 13x5x5 Installation per incident	H7668A/E U4845A/E H7686A/E U2009E
<b>Third-party solutions</b>	<a href="http://www.hp.com/go/gsc">www.hp.com/go/gsc</a>	

<sup>12</sup> Average cartridge yield: 18,000 standard pages. Declared yield value in accordance with ISO/IEC 19752.

HP paper		
	HP Multipurpose Paper, letter	HPM1120
	HP Multipurpose Paper, legal	HPM1420
	HP Printing Paper, letter	HPP1122
	HP LaserJet Paper, letter	HPJ1124
	HP LaserJet Paper, legal	HPJ1424
	HP Premium Choice Paper, letter	HPU1132
	HP Cover Paper, letter	Q2413A
	HP LaserJet Transparencies, letter	92296T
	HP Matte Photo & Imaging Laser Paper, letter	Q6549A
	HP Glossy Photo & Imaging Laser Paper, letter	Q6545A
	HP Matte Brochure Laser Paper, letter	Q6543A
	HP Soft Gloss Presentation Laser Paper, letter	Q6541A
	HP Soft Gloss Laser Paper, letter	Q2415A
	HP LaserJet Transparencies, letter	C2934A
	HP LaserJet Tough Paper, letter	Q1298A
	HP Printing Paper, A4	CHP210
	HP LaserJet Paper, A4	CHP310
	HP Premium Choice Paper, A4	CHP410
	HP Laser Photo Paper, Matt, A4	Q6550A
	HP Laser Photo Paper, Glossy, A4	Q6547A
	HP Laser Paper, Matt, A4	Q6544A
	HP Laser Paper, Soft Gloss, A4	Q6542A
	HP Soft Gloss Laser Paper, A4	Q2417A
	HP LaserJet Tough Paper, A4	Q1298B
	HP Full-Sheet Labels, 8.5 by 11 in, 25 sheets	Q2550A
	HP Full-Sheet Labels, 8.5 by 11 in, 100 sheets	Q2551A
	HP Address Labels, 1 by 2.625 in, 25 sheets	Q2587A
	HP Address Labels, 1 by 2.625 in, 100 sheets	Q2588A
	HP Address Labels, 1.33 by 4 in, 25 sheets	Q2589A
	HP Address Labels, 1.33 by 4 in, 100 sheets	Q2590A
	HP Shipping Labels, 2 by 4 in, 25 sheets	Q2591A
	HP Shipping Labels, 2 by 4 in, 25 sheets	Q2592A
	HP Return Address Labels .5 by 1.75 in, 25 sheets	Q2593A
	HP Shipping Labels, 3.33 by 4 in, 100 sheets	Q2594A



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