

HP Digital Sending Software V4

Software Technical Reference (Public)



HP Digital Sending Software V4

Software Technical Reference



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1 Purpose and scope

Introduction

This technical reference provides information about, and troubleshooting tips for, the HP Digital Sending Software (HP DSS) program. This reference is also presented in an electronic format to serve as a quick reference tool for Customer Care Center (CCC) agents, support engineers, system administrators, and management information system (MIS) personnel.

The following information is included in this technical reference:

- Overview of the components and features of the software
- Procedures for installing and removing software components
- Procedures for configuring and using the features of the software

HP Digital Sending Software

HP DSS is a software program that, in conjunction with firmware, enables HP multifunctional peripherals (MFPs) and digital senders to send scanned documents directly to electronic mailboxes (e-mail), secure e-mail, network folders, fax destinations, or workflow destinations, transforming paper-based information into digital images that can be shared, stored, or edited. Documents are initially scanned at the MFP or digital sender, and then are transmitted to a network-connected computer where HP DSS is installed. HP DSS can also be configured to require user authentication, ensuring that only authorized persons use the Digital Sending features of the MFP.

HP DSS provides services to newer HP MFPs and to the HP 9200c Digital Sender. This document details the interaction between the software and the devices that support this solution, including the HP LaserJet 4100mfp, HP LaserJet 4345mfp, HP LaserJet 9000 Series MFPs (HP LaserJet 9000mfp, 9040mfp, and 9050mfp), HP Color LaserJet 9500mfp, and the HP 9200c Digital Sender.

With version 4.0 of the HP DSS program, the new send-to-folder and send-to-workflow features were added. Customers running earlier versions of HP DSS can upgrade to this new version and take advantage of the new features.

2 Software description

This chapter contains information about the following topics:

- [Technology overview](#)
- [Software capabilities](#)
- [HP DSS components](#)
- [Licensing](#)

Technology overview

HP DSS is an optional software program for the HP LaserJet multifunction peripheral (MFP) products. When using HP DSS for digital sending, settings are configured by using the HP MFP DSS Configuration Utility rather than the device control panel.

Two methods are available for configuring an HP MFP to send documents digitally:

- **Embedded digital sending:** Embedded digital sending can be configured on the HP LaserJet 4100mfp, HP LaserJet 4345mfp, HP LaserJet 9000 Series MFPs, and the HP 9200c Digital Sender “out of the box.” These embedded digital-sending features include send-to-e-mail and dynamic LDAP (lightweight directory access protocol) addressing. These features are either configured from the control panel of the MFP or from the HP Embedded Web Server interface, and do not require HP DSS to be installed.
- **Service-based digital sending:** Service-based digital sending requires HP DSS to be installed on a digital sending server. The digital sending server then controls all of the digital sending tasks. Performing service-based digital sending by using HP DSS 4.0 and later also adds the ability to send to secure e-mail, network folder, and workflow destinations.

After installing HP DSS, the administrator can choose to either continue to route send-to-e-mail jobs from the device directly to the simple mail transfer protocol (SMTP) gateway or to route send-to-e-mail jobs first to HP DSS. Each method has distinct advantages, depending on the network environment.

Sending e-mail directly from the device offers the following advantages:

- The device can route the e-mail to an SMTP gateway that is “closer” to the device than the service is.
- The administrator can configure different devices to use different SMTP gateways.

Using HP DSS to send e-mail offers the following advantages:

- HP DSS supports multiple SMTP gateways for redundancy.
- If the SMTP gateway does not support anonymous access, only one transmission protocol/internet protocol (TCP/IP) address needs to be specified in the exception table.



NOTE The HP DSS program V4.3 added support for authenticated SMTP.

[Figure 2-1 Embedded and service-based e-mail](#) illustrates the differences between embedded and service-based e-mail.

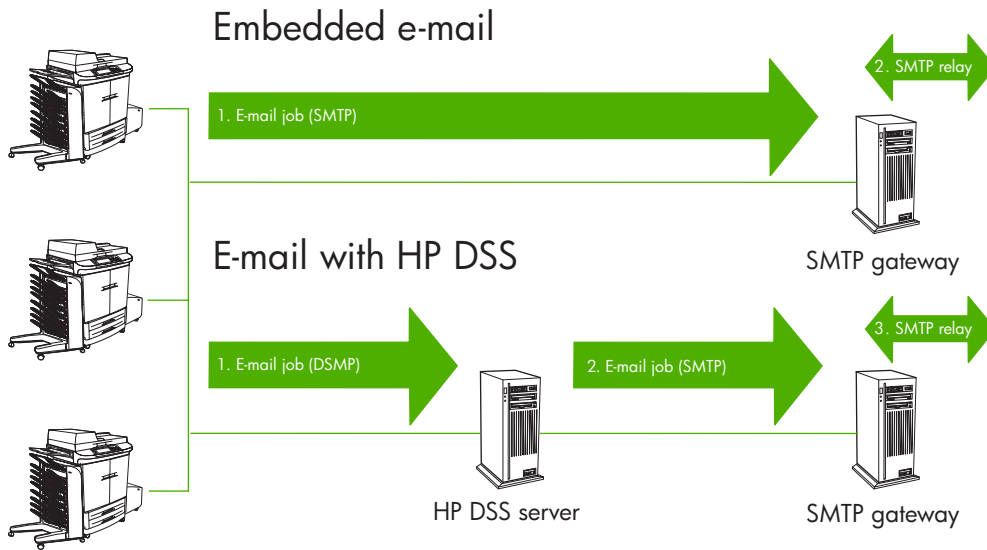


Figure 2-1 Embedded and service-based e-mail

When using embedded send-to-e-mail, the MFP sends e-mail by using SMTP/MIME to transfer an e-mail with the scanned image attached as a separate file to the pre-configured SMTP gateway. By default, SMTP uses the TCP/IP port 25.



NOTE This port cannot be changed in HP DSS versions earlier than 4.3. A custom port can be configured in V4.3 of the software. Contact HP Customer Support for assistance with changing the port.

If the SMTP gateway is configured to relay e-mail, the e-mail with the attachment is relayed to the destination address(es). The MFP uses an “anonymous” connection to the SMTP gateway. If the SMTP gateway is not configured to accept anonymous connection, the SMTP administrator must add the TCP/IP address or hostname of each MFP configured for the SMTP gateway into an “exception list” for this specific SMTP gateway.

When the MFP is configured to use HP DSS to send e-mail, the send-to-e-mail jobs are routed to the HP DSS server over TCP/IP by using DSMP (Digital Sender Module Protocol—an encrypted HP-proprietary protocol). The HP DSS server then uses SMTP/MIME to transfer these send-to-e-mail jobs to the SMTP gateway that is specified in the HP DSS configuration. Beginning with version 4.3 of the HP DSS program, authenticated SMTP is supported for sending e-mail using HP DSS.

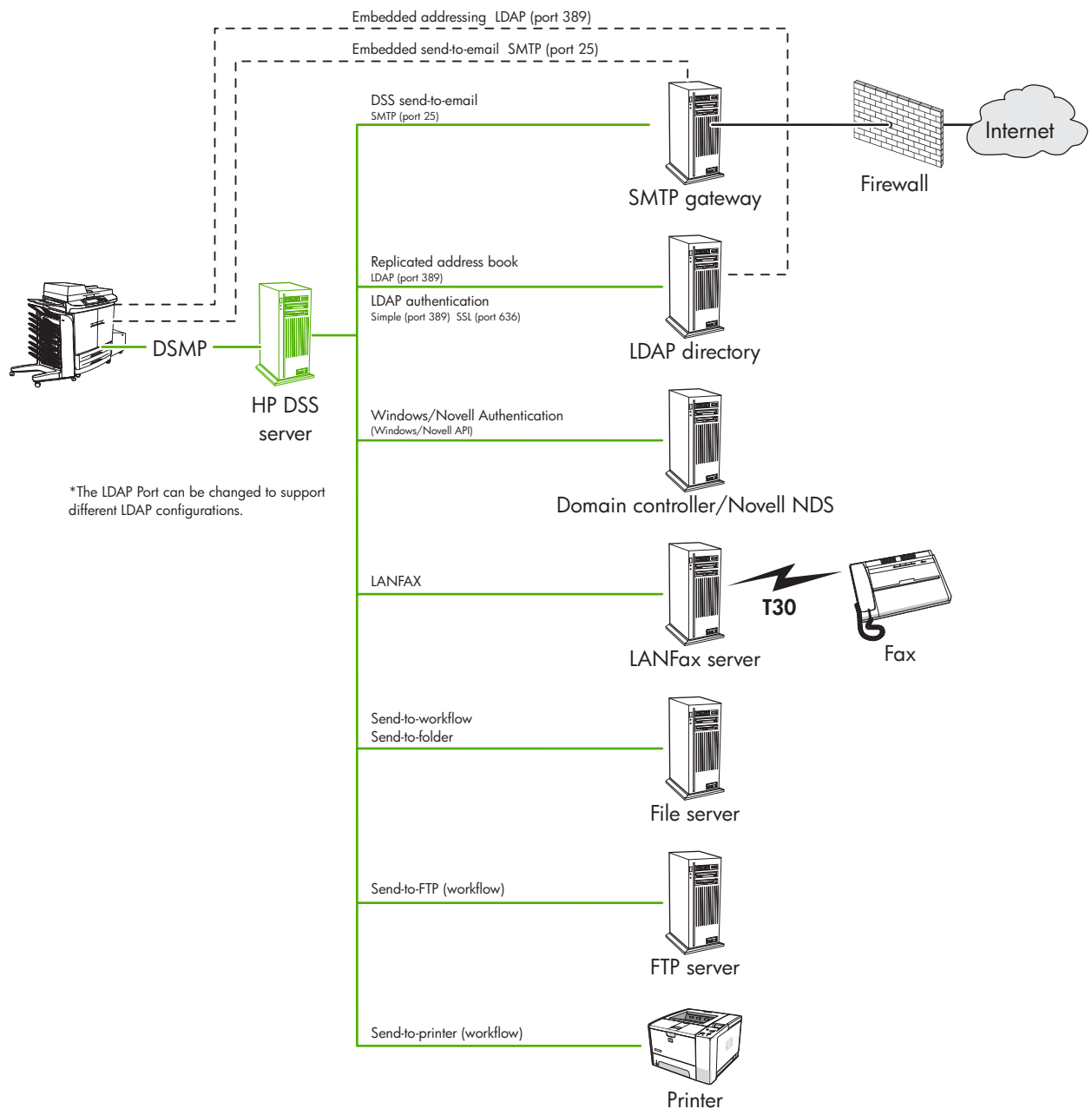


Figure 2-2 Embedded and service-based digital sending

In addition to selecting the method for sending e-mail, the administrator can also either choose to continue to use dynamic LDAP addressing (the embedded feature), or to connect the MFP to the replicated LDAP address book that resides on the server on which HP DSS is installed. Each method has distinct advantages.

Using the embedded dynamic LDAP feature has the following advantages:

- The address book data is always up to date.
- Replication is not required.
- Different devices can be configured to use different LDAP directories.

Using the replicated LDAP address book through HP DSS has the following advantages:

- The Simple and Protected GSS-API Negotiation (SPNEGO) bind method is supported. With Dynamic LDAP, only simple bind and anonymous bind are supported. The SPNEGO bind method provides encryption for the username and password that are used to bind to the LDAP server. With simple bind, the username and password are passed over the network as clear text.
- Administrators can use the HP Address Book Manager utility to manage the guest address book addresses that users add at each device.
- Administrators can choose to either replicate the LDAP directory or use other methods to import address-book data.
- The replicated address book is stored only in the DB directory in the \PROGRAM FILES \HEWLETT-PACKARD\HP MFP DIGITAL SENDING SOFTWARE folder, and not on the device hard drive.

Software capabilities

This section includes the following topics:

- [Functions available through HP DSS](#)
- [Control-panel features](#)
- [HP MFP Digital Sending Software Configuration Utility](#)
- [Authentication](#)
- [E-mail capabilities](#)
- [Fax capabilities](#)
- [Send-to-folder capabilities](#)
- [Send-to-workflow capabilities](#)

Functions available through HP DSS

The following table outlines the features that are available with the HP DSS V4.x program.

Table 2-1 Functions available through HP DSS

Function	Detail	Compatibility
E-mail enhancements for newer MFPs	• Public addresses, distribution lists through LDAP	HP LaserJet 9040mfp HP LaserJet 9050mfp
	• Local address book	HP LaserJet 4345mfp
	• Personal address book from Outlook contacts	HP LaserJet 9500mfp
		HP 9200c Digital Sender
E-mail enhancements for older MFPs	• Public addresses, distribution lists through LDAP	HP LaserJet 4100mfp HP LaserJet 9000mfp

Table 2-1 Functions available through HP DSS (continued)

Function	Detail	Compatibility
Authentication	<ul style="list-style-type: none"> Windows® network authentication 	HP LaserJet 9040mfp
	<ul style="list-style-type: none"> Novell authentication 	HP LaserJet 9050mfp
		HP LaserJet 4345mfp
		HP LaserJet 9500mfp
		HP LaserJet 4100mfp
		HP LaserJet 9000mfp
		HP 9200c Digital Sender
Fax	<ul style="list-style-type: none"> Send-to-local area network (LAN) fax 	HP LaserJet 9040mfp
		HP LaserJet 9050mfp
	<ul style="list-style-type: none"> Send-to-Internet fax 	HP LaserJet 4345mfp
	<ul style="list-style-type: none"> Send-to-Windows 2000 fax or Windows XP fax 	HP LaserJet 9500mfp
	<ul style="list-style-type: none"> Ability to configure embedded fax using the HP MFP DSS Configuration Utility 	HP LaserJet 4100mfp
		HP LaserJet 9000mfp
	Note: HP DSS supports third-party fax solutions.	HP 9200c Digital Sender
Secure e-mail	<ul style="list-style-type: none"> Send a document by using a secure third-party e-mail solution. 	HP LaserJet 9040mfp
		HP LaserJet 9050mfp
		HP LaserJet 4345mfp
		HP LaserJet 9500mfp
		HP 9200c Digital Sender
Send to Folder	<ul style="list-style-type: none"> Scan a document and send it to a folder on the network. 	HP LaserJet 9040mfp
		HP LaserJet 9050mfp
		HP LaserJet 4345mfp
		HP LaserJet 9500mfp
		HP 9200c Digital Sender
Send to Workflow	<ul style="list-style-type: none"> Send a document to a network folder or file transfer protocol (FTP) site along with additional information about the document (metadata). A third-party software program can then retrieve and decipher the information, and perform the appropriate operation on the scanned image. 	HP LaserJet 9040mfp
		HP LaserJet 9050mfp
		HP LaserJet 4345mfp
		HP LaserJet 9500mfp
		HP 9200c Digital Sender

Control-panel features

All basic HP DSS tasks can be initiated at the device control panel.

- When prompted on the control panel, the user types the username and password for authentication, using the control-panel keyboard.
- The user then selects an HP DSS task such as send-to-e-mail, send-to-folder, or send-to-fax.
- The control-panel keyboard is used to type the address and subject information (for example, the **To:** and **Subject:** lines) for e-mails. For faxes, the destination fax number is typed or selected on the control panel. For sending to a folder, a predefined folder path is selected, or, if the user is authenticated, the user can type a folder path into the **Other** text box. Users can also control duplex scanning, the paper size, and the e-mail attachment format at the control panel.
- If the address-book feature is enabled, the user can also select names and addresses for e-mail or fax from the available address book(s).

HP MFP Digital Sending Software Configuration Utility

The HP MFP Digital Sending Software Configuration Utility is a software program that provides an interface between the device digital-sending functions and the HP DSS server. To use the HP MFP DSS Configuration Utility, go to the server where HP DSS has been installed and click **Start**, click **Programs**, click **Hewlett-Packard**, click **HP MFP Digital Sending Software**, and then click **Configuration Utility**. In the **HP Digital Sending Software Configuration** dialog box that appears, select **This computer** and then click **OK**.

From this utility, the user can perform the following tasks:

- Set the administrator contact information
- Add licenses for HP DSS
- Configure and test the SMTP settings
- Configure and test the LDAP settings
- Configure the fax method
- Set the default **From:** address and the default subject for e-mail
- Create a custom message to be used with each e-mail
- Set the default file format, default color preference, default resolution, and maximum file size for scanned images
- Make available address books that are located on the network
- Configure custom workflow destinations and workflow prompts
- Set up a list of network folders to be used for the send-to-folder feature

Remote Configuration Utility

The HP DSS Remote Configuration Utility can be installed separately from the HP DSS program and used to administer HP DSS servers across the network. The **Remote Configuration Utility** directory on the HP DSS CD contains the setup program for the Remote Configuration Utility. When launching the Remote Configuration Utility, enter the network address of the HP DSS server to administer.

Authentication

The authentication feature requires device users to log in by using their network username and password before they can gain access to the digital-sending features. When a device is configured to require authentication, **Authentication Required** appears on the control panel when a user selects a digital-sending task. The user is prompted for username, password, and domain. After these fields are completed and the user presses or touches **OK**, the authentication process begins.

Three different methods are supported to authenticate users at the device: Windows authentication (SPNEGO), LDAP authentication, and Novell authentication (NDS or Bindery). After HP DSS authentication is configured, the HP DSS administrator might choose to require authentication for any or all of the individual digital-sending options. Each of these options can be configured differently for different devices. Note that the username and password of the authenticating user are encrypted between the device and HP DSS. In addition, the username and password are encrypted from the HP DSS server to the authenticating server by the Windows or Novell API that the HP DSS program uses.

For more information see [Using authentication](#).

E-mail capabilities

HP DSS can send e-mail messages that use multiple Internet mail extensions (MIME-compliant e-mail messages) to Internet addresses. It uses SMTP/MIME to deliver these messages. SMTP is independent of the network operating system on which the e-mail server is running.

E-mail addresses are specified at the device control panel. Users can specify e-mail destinations by using the following actions:

- Selecting e-mail addresses or distribution lists that are already loaded in HP DSS
- Typing e-mail addresses

The document that the user scans at the device becomes an attachment to their e-mail message. The attachment can be sent as a .PDF, .TIFF, .MTIFF, or .JPEG file.

The .PDF format is most often used for the attachments because recipients can easily view and print the e-mail attachment. Adobe® Acrobat® Reader is used to view the PDF files. A free copy can be obtained from the Adobe Systems, Incorporated, Web site (www.adobe.com).



NOTE One or more of the links in this document take you outside the Hewlett-Packard Web site. Hewlett-Packard does not control and is not responsible for information outside the HP Web site.

If the .TIFF file format is selected, the e-mail has one attachment for each page of the scanned document. If the .MTIFF format is selected, all of the pages are in one attachment. However, some programs cannot read .MTIFF documents, and they might display only the first page.

If the SMTP size limit is exceeded, the e-mail is distributed as multiple e-mails. This is based on the limit that is selected on the SMTP server page in the HP MFP DSS Configuration Utility.

Secure e-mail

A secure or “secondary” e-mail option is also available. Secondary e-mail is designed for solutions that require an extra measure of data security. Secondary e-mail differs from the regular e-mail feature in that a secure third-party software program is used to deliver the e-mail message. An rfc822-compliant e-mail message that includes the scanned data as an attachment is created in a

folder on the HP DSS server. A third-party secure e-mail program monitors this folder, processes the e-mail message, and sends it out in a secure manner. From the user's point of view, the process of sending an e-mail message by using the secure e-mail option is exactly the same as it is for normal e-mail.

The HP DSS secure e-mail feature is compatible with the following third-party software programs:

- Zixit
- Omtool Genidocs
- Authentica

For more information about e-mail and secure e-mail, see [Using the e-mail feature](#) and [Using the secondary e-mail feature](#).

Fax capabilities

Users can send faxes directly from the device. They can select destinations from a speed-dial list on the device or type them at the device control panel. The same document can be sent to multiple fax numbers.

To support this service, HP DSS supports Internet fax, Windows 2000 fax, and a number of third-party LAN fax products. This functionality requires an already-installed fax product, and the LAN fax products also require a shared folder for the fax work area.

Documents can be sent in TIFF, MTIFF, PCL 5 (uncompressed), or PCL 5 (packbits) format. The document file format is predetermined by the third-party fax product specification.

For more information about the fax feature, see [Using the fax feature](#).

Send-to-folder capabilities

Users can send documents directly to any folder on the network. Supported operating systems for folder destinations are Windows 98, Windows NT®, Windows 2000, Windows XP, Windows 2003, and Novell NetWare. Users can either select from a list of folders on the control-panel interface or type their own folder path.

For more information about the send-to-folder feature, see [Using the send-to-folder feature](#).

Send-to-workflow capabilities


With the send-to-workflow feature, users can scan a document and send it to a custom workflow destination. They can use the workflow feature to send additional information in the form of a metadata file that is saved with the scanned document in a specified network or FTP location. Prompts at the control panel solicit specific information for the metadata file. A third-party software program that monitors the network folder or FTP site can then retrieve and decipher the information, performing the specified operation on the scanned image. A printer can also be set up as a workflow destination, which allows users to scan a document and then send it directly to any network printer to be printed.

For more information about the send-to-workflow feature, see [Using the send-to-workflow feature](#).

HP DSS components

The following table describes the network components that are required for digital sending.

Table 2-2 HP DSS network requirements

Component	Description
Network server running Windows 2000 Professional, Server, or Advanced Server; Windows XP Professional; or Windows Server 2003 Standard or Enterprise Server	<p>The server contains the following components:</p> <ul style="list-style-type: none"> • HP DSS service • HP MFP DSS Configuration Utility—used to configure and monitor digital-sending features after the HP DSS program has been installed • Windows 2000 Fax service—required only when the Windows 2000 Fax service is the method of fax transport
Network	Fast Ethernet 100Base-TX or Ethernet 10Base-T
MFPs or digital senders	<p>An HP DSS server can support up to 250 MFPs or HP 9200C Digital Senders on the same network. Each device can be individually configured to support any or all of the digital-sending options.</p> <p> NOTE HP DSS does not support the HP 9100C Digital Sender or 8100C Digital Sender.</p>
SMTP gateway	This gateway facilitates the e-mail and Internet-fax digital-sending options.
LAN fax server	A LAN fax server is a network device that centrally handles the sending and receiving of fax jobs. HP DSS can be used to configure devices to route outgoing faxes to a LAN fax server.
LDAP server	An LDAP server is a directory server that contains recipients' names and e-mail addresses and supports LDAP. HP DSS uses the LDAP server to obtain addresses for device users, and can also use it for user authentication.
FTP server	An FTP server can be used as a destination for documents that have been scanned.
Domain controller/Novell directory server	HP DSS can use a domain controller or Novell directory server to support user authentication and to validate the user's login information.
Network printer	A network printer can be set up as a destination for documents that have been scanned.

[Figure 2-3 HP DSS architecture](#) depicts the HP DSS components.

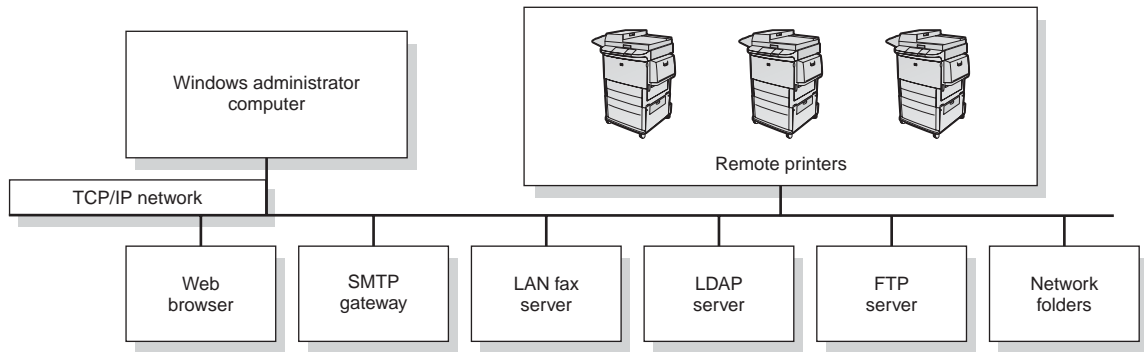


Figure 2-3 HP DSS architecture

Windows interface

HP DSS is installed on a network server that is running Windows 2000 Professional, Server, or Advanced Server; Windows XP Professional; or Windows 2003 Standard or Enterprise Server. The following Windows tools are used in conjunction with HP DSS:

- Windows **Services** interface
- Windows **Event Viewer**
- HP MFP Digital Sending Software Configuration Utility
 - Fatal errors are registered in the event log.
 - The Configuration Utility **Log** tab contains functional entries.

Licensing

When HP Digital Sending Software is installed for the first time, you have the option of entering a license number or using the software on a 60-day evaluation basis. During the evaluation period, the software can support up to 50 MFPs or digital senders. When the trial period expires, the software becomes inactive until a license is installed. The **Licenses** section of the HP MFP DSS Configuration Utility **General** tab contains a Trial License entry where new licenses must be added. The remaining trial period also appears on that tab.

HP DSS is available in five different seat configurations.

Seats	Part Number
1	T1936AA#UA0
5	T1936AA#0AD
10	T1936AA#0A9
50	T1936AA#0AA
250	T1936AA#UD6

Each seat enables digital-sending features on one device. As many licenses as needed can be installed in order to accumulate seats, but 250 is the maximum number of devices that a single server can support.

Click **Add** on the **General** tab to type a new license key code for the HP Digital Sending Software.

Node Locking

Purchased licenses can be applied only to a specific HP DSS 4.x server. The node-locking process combines the license certificate with a unique ID from the HP DSS server. The unique ID appears on the **About** tab of the HP MFP DSS Configuration Utility as the **MAC Address**. This ID appears during and after the trial period. To activate the license certificate, record the **MAC Address** that appears on the **About** tab of the HP MFP DSS Configuration Utility and proceed to the HP Software License Manager Web site at licensing.hp.com. At this Web site, type the license certificate number and the MAC address. The Software License Manager activates licenses based on information located on the purchased license certificate(s) and the server ID of the HP DSS server. After this information is entered into the Software License Manager, the generated licenses are delivered by fax or e-mail.

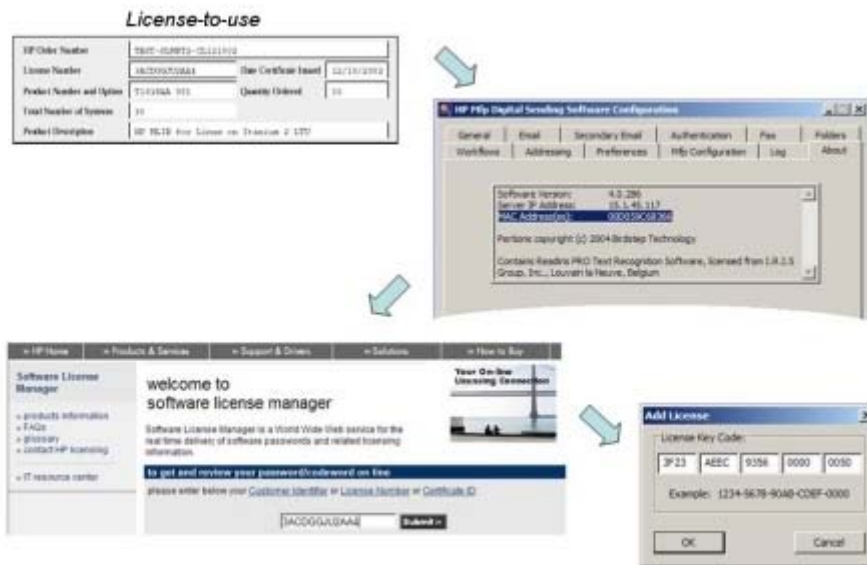


Figure 2-4 License Node Locking

Licenses from prior versions

The Secure Access and Communications license types found in earlier versions of HP DSS have been replaced with a single Workflow Process and Document Management license in HP DSS V4.0 and later. Secure Access and Communications licenses are automatically converted to a Workflow Process and Document Management license when the 4.x software is installed. Each legacy device uses one seat in the new Workflow Process and Document Management license. Although this provides full HP DSS functionality for current MFP models, older models support only their original digital-sending features. Use the **General** tab of the HP MFP DSS Configuration Utility to add and remove licenses.

See [Upgrading from previous versions of HP DSS](#) for more information about upgrading older licenses.

Hewlett-Packard limited warranty statement

The following licensing terms apply to the HP Digital Sending Software.

HP PRODUCT	DURATION OF WARRANTY
HP MFP DIGITAL SENDING SOFTWARE v. 4.0	90 days

1. HP warrants to you that the HP SOFTWARE PRODUCT will not fail to execute its programming instructions for 90 days after the date of purchase due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace SOFTWARE PRODUCT media, which does not execute its programming instructions due to such defects.
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3 Software features

This chapter contains information about the following topics:

- [Finding documentation and other supporting information](#)
- [Using Internet support](#)
- [Understanding support tools](#)
- [Using the e-mail feature](#)
- [Using the secondary e-mail feature](#)
- [Using the fax feature](#)
- [Using the send-to-folder feature](#)
- [Using the send-to-workflow feature](#)
- [Using authentication](#)
- [Using address books](#)
- [Configuring individual devices](#)

Finding documentation and other supporting information

The following table outlines the source for, and description of, the information that is available about issues that can arise when using HP DSS.

Table 3-1 Sources of information

Source	Description
HP MFP DSS Support Guide	This guide is located on the HP DSS CD and installed with Version 3.5.45 or later.
HP MFP DSS User Guide	This guide is located on the HP DSS CD. It provides basic information about how to use the digital-sending features.
MFP online Help system	MFPs feature an online Help system that provides instructions for resolving common problems. To use Help, press ? on the control panel.
Activity-log messages	<p>The activity log is a record of digital sending and is probably the best tool for troubleshooting. It contains information, warning, and error messages that can help resolve problems. It also provides access to the embedded Web server event log for MFPs.</p> <p>Two logs can be viewed:</p> <ul style="list-style-type: none">• The HP MFP DSS Configuration Utility Log tab shows general log messages for HP DSS.• In the MFP Configuration section of the Configuration Utility, a second Log tab shows log messages that are specific to the selected MFP device. <p>See Using the Activity Log in the Configuration Utility and Using the log for an individual device for more information. In addition, see the Help file for the HP MFP Digital Sending Software Configuration Utility for a list of messages and recommended actions.</p>
Windows Event Viewer messages	The Event Viewer shows a record of the startup procedure for the HP DSS that is running on the Windows server.
Control-panel messages	Messages appear on the device control panel to report digital-sending problems.
HP MFP DSS Configuration Utility messages	Messages appear in the HP MFP DSS Configuration Utility when problems occur.
Alert notifications	E-mail alert notifications can be sent when digital sending problems occur. The Help file for the HP MFP DSS Configuration Utility explains how to do this. See Understanding critical error notifications for more information.

Using Internet support

Information about the software and all documentation can be found at the following Web site:

www.hp.com/support/dss

Understanding support tools

The following table lists support tools that are available for HP DSS.

Table 3-2 Support tools

Tool	Purpose
Windows Services	Stop and start HP DSS.
Software and device activity logs	View messages for HP DSS and the devices. See Using the Activity Log in the Configuration Utility and Using the log for an individual device .
Windows Event Viewer	View messages that the Windows XP or Windows 2000/2003 operating system generates about digital sending.
HP MFP DSS Configuration Utility	Configure the devices: <ul style="list-style-type: none">• Enable or disable authentication and set the method.• Enable or disable digital sending for e-mail, fax, folder, and workflow, and configure all send options.• Change the folder that holds temporary files.• Find the software version number.• Set the administrator information and e-mail alerts.• Set the addressing options
HP Address Book Manager (ABM)	Change the ABM administrator password. Configure the destinations in the public address book.

Using the e-mail feature

Devices can be configured to send e-mail directly to an e-mail gateway or through HP DSS. All e-mail-creation activities, including image processing, SMTP message creation, and addressing, are performed in the device firmware. This section describes how completed e-mail jobs are routed to the SMTP gateway through HP DSS.

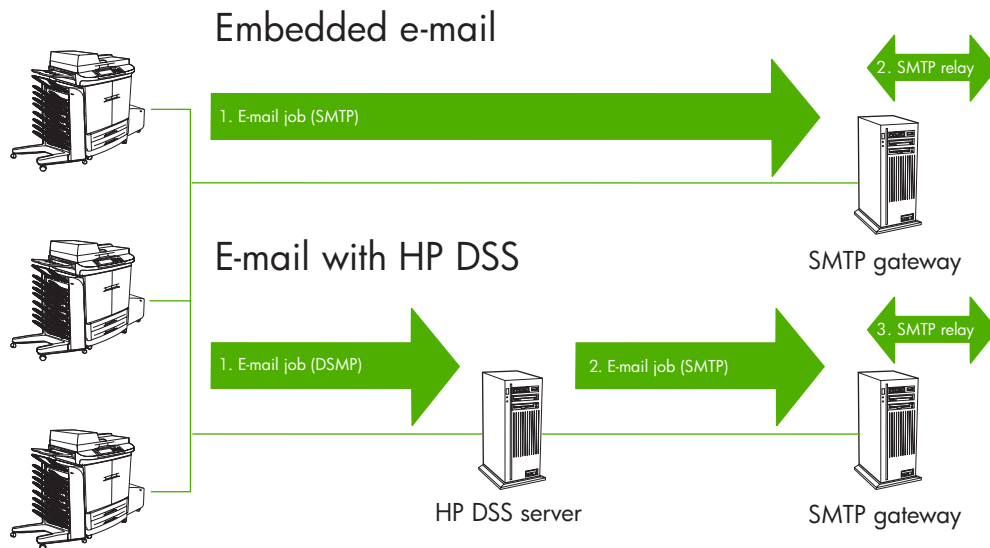


Figure 3-1 Embedded and service-based e-mail processes

Communications between the device and HP DSS are always done through the DSMP protocol.

If an error occurs during job completion, an entry is created in both the HP MFP DSS Configuration Utility log and the MFP device log, and the job is aborted.

The device can send SMTP e-mail messages to Internet addresses. It uses SMTP-MIME to deliver these messages. It is highly recommended that the SMTP gateway be located on the local area network. However, the product can be configured for e-mail functionality even if mail services are provided by an outside Internet service provider (ISP) over a digital subscription line (DSL).

If the server supports it, ESMTP (Extended SMTP) can be used to send e-mail. This capability is automatically detected and no specific configuration steps are necessary. The e-mail service is also compatible with the DSN (Delivery Status Notification) standard.

The document that the user scans at the device becomes an attachment to their e-mail message. The .PDF file format is most often used for the attachments, which gives recipients the ability to both view and print the attachments.

Using HP DSS to send e-mail from an MFP

The following steps outline what happens when a user sends e-mail from an MFP by using HP DSS.

1. The user selects the **E-mail** option on the device control panel.
2. If authentication is turned on, the user must use the control-panel keyboard interface to type their username and password. (See the [Authentication](#) section for more information about the authentication feature.)

3. After the device contacts the HP DSS service to ensure that it is ready for communication, the e-mail interface screen appears in the control panel. The default values are filled in based on what was specified during the configuration process. If authentication is on, the **From:** text box contains the user's e-mail address. This text cannot be changed.
4. The user uses the control-panel keyboard interface to type data in the **To:**, **Cc:**, and **Subject:** text boxes.
5. If the customized message feature is enabled, the user can type a custom message into the **Message** text box.
6. If necessary, the user can touch **Settings** to modify the default settings.
7. When the e-mail is ready, the user touches **Send** on the device control panel.
8. The device scans the job.
9. When scanning is complete, the device uses image processing on the job and saves the resulting file(s) to disk.
10. The device sends all of the addressing information that the user provided in step 4 to the HP DSS service, followed by the image-file attachment(s).
11. The HP DSS e-mail task opens up a session with the SMTP server.
12. The SMTP headers are sent to the server with e-mail aliases, and the subject is MIME encoded.
13. The localized body text is MIME encoded and sent.
14. The file attachment(s) are MIME encoded and sent.
15. HP DSS closes the SMTP session.
16. HP DSS logs the results to the HP DSS device log.
17. HP DSS deletes all files on the disk that pertain to the job.

Configuring the e-mail feature

Use the **Email** tab of the HP MFP DSS Configuration Utility to configure and organize the SMTP e-mail servers that HP DSS uses to send e-mail messages.

1. On the HP DSS server, open the HP MFP DSS Configuration Utility and click the **Email** tab.

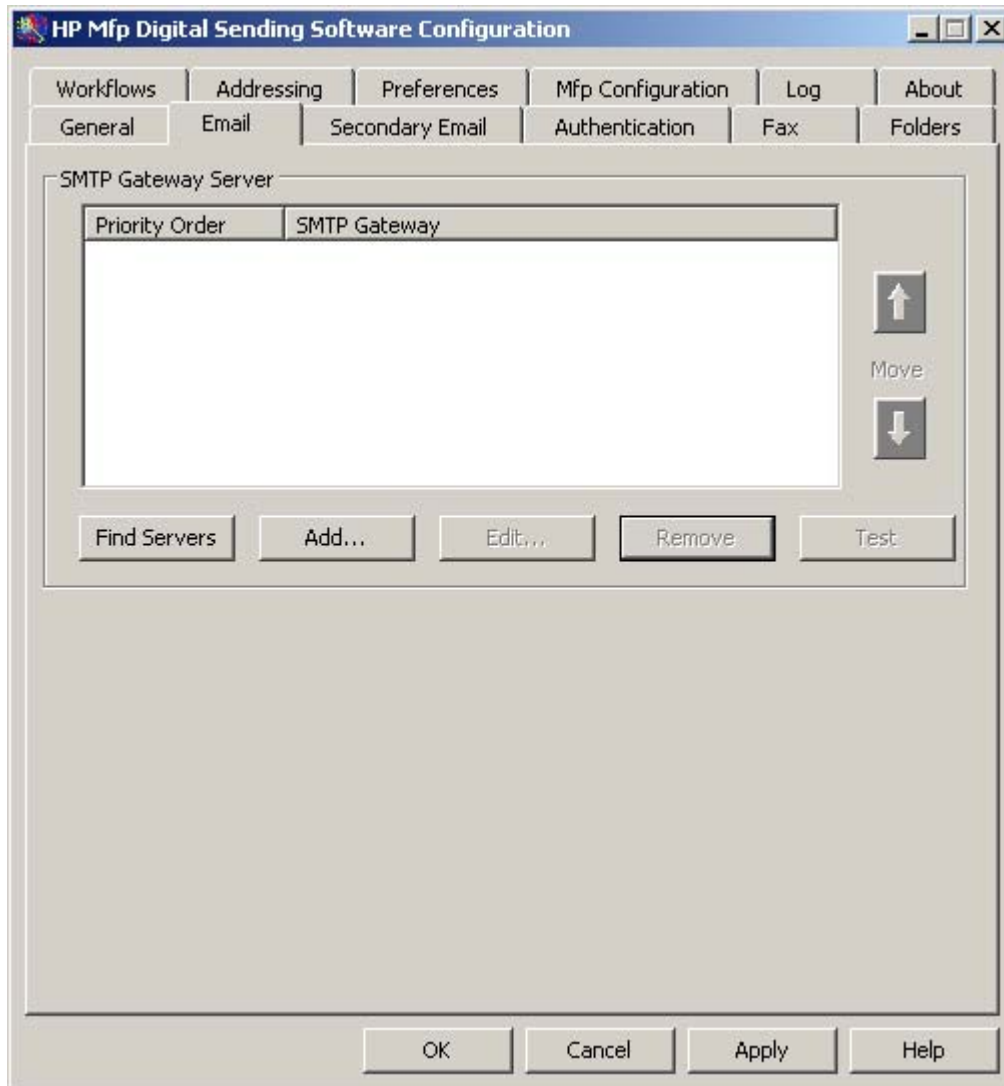


Figure 3-2 The **Email** tab

2. Click **Find Servers** to find all of the SMTP servers on the network. A list of SMTP servers appears.



NOTE If **Find Servers** does not find any SMTP servers, click **Add** on the **Email** tab and then add the SMTP server manually by typing the host name or TCP/IP address of the SMTP server.

3. Select one or more SMTP servers and click **OK**. The selected servers are loaded into the SMTP Gateway Server list.

4. Select each server and then click **Edit...** The **Edit SMTP Gateway** dialog box appears.

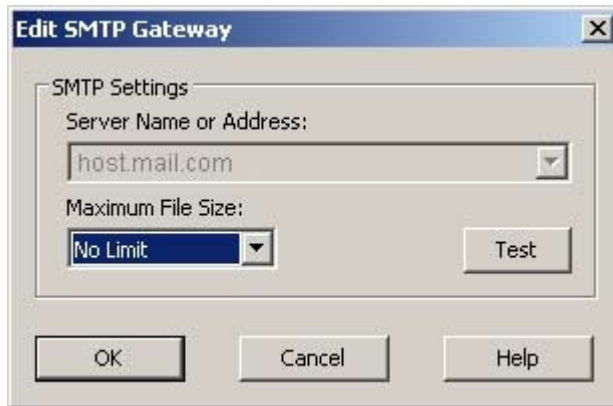


Figure 3-3 Edit SMTP Gateway dialog box



NOTE In version 4.3 of HP DSS this dialog box also includes an **Enable SMTP Authentication** option, with fields for entering the SMTP user name and password.

5. To set a maximum file size for the specified SMTP gateway, select it in the **Maximum File Size** drop-down list. If an e-mail attachment exceeds the specified file size, the attachment is divided into two or more smaller attachments.
6. Click **Test** to verify the presence of the SMTP gateway.



NOTE If the test fails, double-check the gateway address and then contact the network administrator to see if the SMTP server is functioning. See [Verifying the SMTP gateway](#).

7. Click **OK** to save the SMTP settings.
8. If there is more than one SMTP server, use the **Move** arrow buttons to move SMTP servers to a different position on the list. HP DSS attempts to use the first SMTP server when processing an e-mail transmission. If the first server is unavailable for use, HP DSS attempts to use the next server on the list. HP DSS continues this process until it finds an available SMTP server.

E-mail servers that function as SMTP gateways

The following servers can be used as SMTP gateways for HP DSS.

Exchange 5.5

In Exchange 5.5, the Internet Mail Service (IMS) is responsible for the transfer of SMTP mail. To transfer the mail successfully, the IMS must be configured with a route to another gateway.

Exchange 2000

Exchange 2000 (IIS5) does not directly support SMTP, but it is installed with IIS5, which does support the SMTP service. Exchange 2000 integrates with the Active Directory. It does not have its own data store. Similarly, IIS5 manages the SMTP service for Exchange 2000. Verify that the SMTP service in Windows 2000 is running by clicking **Administrative Tools** and then clicking **Services**.

Sendmail

Sendmail runs as a UNIX® daemon (service). In many large networks, several Exchange servers are routed to a Sendmail gateway, which can serve as a firewall.

Qmail

Qmail is very similar to Sendmail. Qmail does not accept a bare line-feed character in any SMTP content.

Lotus Domino (Notes)

The SMTP message transfer agent (MTA) must be configured in Domino for it to work as an SMTP gateway.

Verifying the SMTP gateway

The following instructions explain how to open a telnet session and send an e-mail to verify communication with the SMTP gateway and also to verify that the SMTP gateway is correctly configured to route Internet e-mail. Use an e-mail account outside of the local network (for example, a Hotmail account) to verify communication outside of the network.

By verifying that e-mail can be sent, you can rule out any problem with the particular gateway that has been configured for HP DSS.

The default local echo setting for a telnet session is "off," which means that characters do not appear as the user types at the telnet prompt. To change the local echo setting to "on," open a command prompt window, type `telnet`, and then press **Enter**. The Telnet prompt appears. Type `set LOCAL_ECHO` to turn on the local echo setting.

Use the following procedure to verify the communication through the SMTP gateway.



NOTE You cannot use the backspace key in a telnet session. Any characters that are typed are sent one character at a time to the SMTP gateway, backspaces included. Note also that SMTP is not case-sensitive. The local echo setting for the telnet session must be set to "on".

To verify the SMTP gateway

1. On a networked computer, open a command prompt, type `telnet <smtp gateway> 25`, and then press **Enter** (where `<smtp gateway>` is the fully qualified domain name or TCP/IP address of the SMTP gateway) to establish communication with the SMTP gateway on port 25.
2. Type `help` and then press **Enter**. Note the different SMTP options that are returned.
3. To start a conversation with the SMTP gateway, type `HELO <smtp gateway>` and then press **Enter**. Note that the response contains a list of attributes as well as the type of SMTP gateway that you are communicating with.
4. To send an e-mail, type `mail from: <your e-mail address>` and then press **Enter**.
5. Type `rcpt to: <your e-mail address>` and then press **Enter**.
6. Type `subject: This is a test message`.
7. Type `data:` and then press **Enter**.

8. Type what you want to go into the body of the message.
9. To send the message, type a period (".") and then press **Enter**.
10. Type `quit` and then press **Enter** to end the telnet session.

The test e-mail message should appear in the sender's inbox in a few seconds.

If the sender does not receive the e-mail message, the SMTP server might not be relaying e-mail. Contact the network administrator.



NOTE Versions of HP DSS earlier than 4.3 do not support authenticated SMTP.

Using the secondary e-mail feature

If the feature is configured, a Secondary E-mail option appears on the device control panel.

A number of third-party software vendors offer services for secure e-mail delivery. For example, Omtool provides a secure e-mail solution that encrypts e-mail messages and requires authentication for recipients before the e-mail message can be delivered. These programs help organizations comply with new laws that are being enacted, such as the E-sign act and the HIPAA requirements for electronic delivery of confidential documents.

The Secondary E-mail feature is designed to work with one of these third-party software programs for users who require extra data security. The rfc822-compliant e-mail message includes the scanned data as a MIME attachment and is saved in the “\HPEMAIL2” folder in the HP DSS program directory on the HP DSS server. The third-party software program processes the e-mail message and sends it out securely.

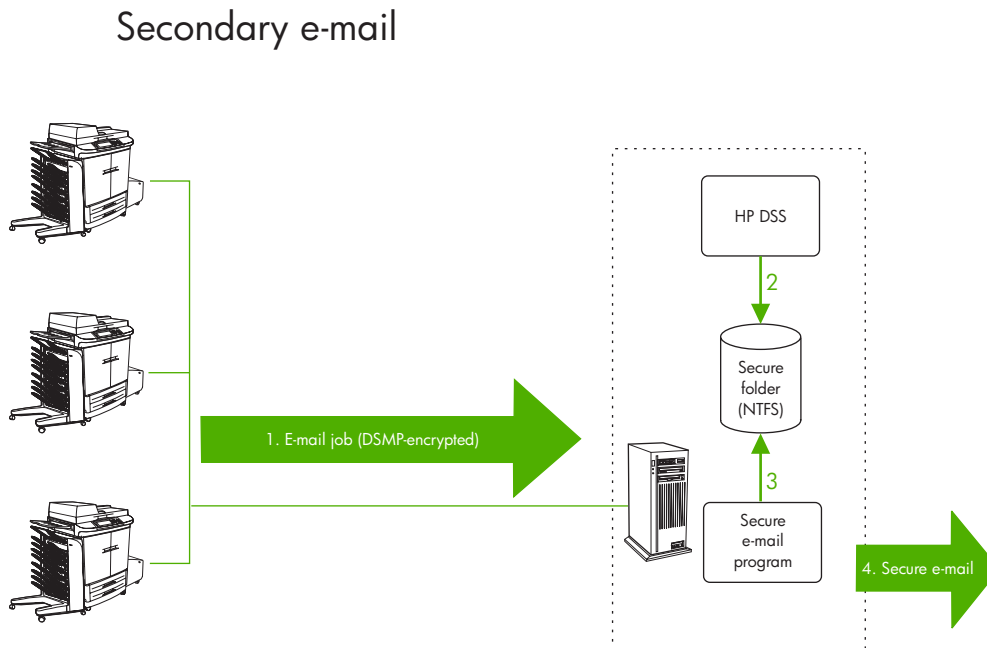


Figure 3-4 Secondary e-mail

Using HP DSS to send secure e-mail

The following steps outline what happens when a user sends e-mail from a device by using the HP DSS secondary e-mail feature.

1. The user selects the **Secondary E-mail** option on the device control panel.



NOTE Because the name of this option can be customized through the HP MFP DSS Configuration Utility, this button might have a different name.

2. If authentication is turned on, the user must use the control-panel keyboard interface to type their username and password. (See the [Authentication](#) section for more information about the authentication feature.)
3. After the device contacts the HP DSS service to ensure that it is ready for communication, the e-mail interface screen appears in the control panel. The default values are filled in based on what was specified during configuration. If authentication is on, the **From:** text box contains the user's e-mail address. This cannot be changed.
4. The user uses the keyboard interface to type data in the **To:**, **Cc:**, and **Subject:** text boxes.
5. If enabled, the user can type a custom message into the **Message** text box.
6. If necessary, the user can touch **Settings** to modify the default settings.
7. When the e-mail is ready, the user touches **Send** on the device control panel.
8. The device scans the job.
9. When scanning is complete, the device uses image processing on the job and saves the resulting file(s) to disk.
10. Using certificate-based encryption and DSMP, the device sends the e-mail file and attachment to the secure “\HPEMAIL2” folder on the HP DSS server.
11. The third-party e-mail software monitors the folder on the HP DSS server, takes the e-mail file, and securely sends it to the recipient.
12. HP DSS logs the results to the HP DSS device log.
13. HP DSS deletes all files on the disk that pertain to the job.

Configuring secondary e-mail

The HP MFP DSS Configuration Utility **Secondary Email** tab contains settings for the secure e-mail option.

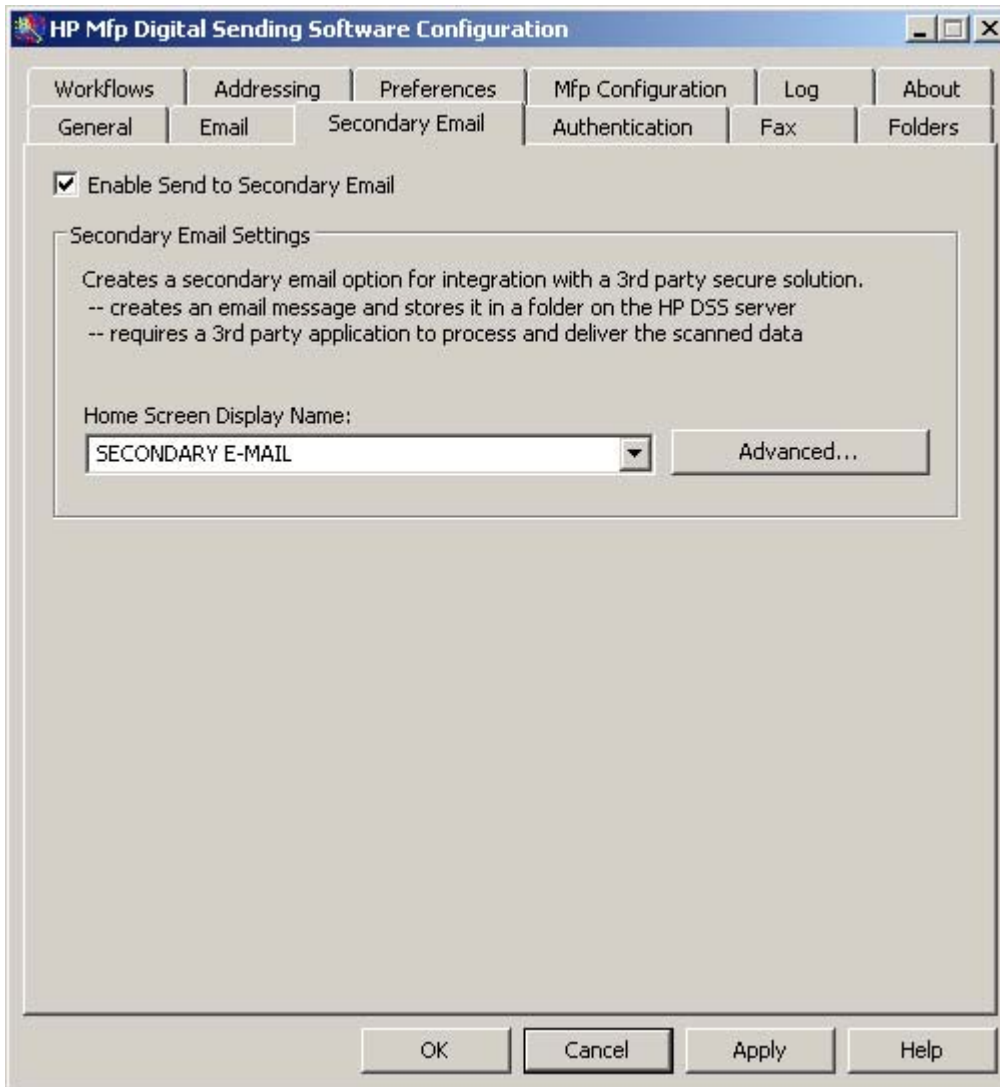


Figure 3-5 The **Secondary Email** tab

To configure secondary e-mail

1. On the HP DSS server, open the HP MFP DSS Configuration Utility and click the **Secondary Email** tab.
2. To enable the secondary e-mail option, select the **Enable Send to Secondary Email** check box.
3. Use the **Home Screen Display Name** text box to specify the display name. The name of this feature can be altered to more closely reflect the third-party program's functionality (such as Secure or Encrypted E-mail). This name appears on the device control-panel home screen. Type a custom display name in the **Home Screen Display Name** text box or select from one of the following options:
 - Secondary e-mail
 - Secure e-mail
 - Specialized e-mail

4. Click **Advanced...** on the **Secondary Email** tab to specify any X-headers to include in the e-mails. The administrator can use X-headers to supply a user-defined header that is inserted in the rfc822 file for each secondary e-mail message that the device sends. The third-party e-mail software program can then use this header information to perform specific actions.



NOTE Currently, none of the HP-recommended third-party vendors require X-headers.

5. Click **Apply** to save the secondary e-mail changes.

Using the fax feature

HP DSS can be configured to support four different methods of faxing. Only one method can be selected for any given HP DSS installation.

- **Internet fax:** An Internet fax provider can be used to process faxes. These providers use e-mail messages as a submittal mechanism and deliver them either to a traditional fax machine or reroute them to an individual e-mail inbox. This service supports .TIFF and .MTIFF files.
- **Windows 2000 fax:** Using a fax modem on the computer where the HP DSS is running allows that computer to act as a turnkey fax gateway. This service supports .MTIFF files.
- **LAN fax:** Requires a LAN fax product and a shared folder for the fax work area. This service supports .MTIFF, PCL 5 uncompressed, and PCL 5 packbits files.
- **Analog fax:** If MFPs on the network support analog faxing, you can choose to use that capability rather than HP DSS to send faxes. Use the HP MFP DSS Configuration Utility to configure the settings for this option.

Users can specify fax destinations at the device control panel by using the MFP keyboard to type fax numbers, by selecting speed-dial numbers, or by selecting fax numbers from an address book.

Internet fax

When Internet fax is configured to use a specific Internet fax provider, HP DSS formats the fax as an e-mail. The provider delivers the message either to a traditional fax machine or reroutes it to an individual e-mail inbox. With Internet fax, the fax number that is specified at the device control panel is used as the first part of the e-mail address. The e-mail address suffix is typically the e-mail suffix of the Internet fax provider's SMTP gateway (for example, efax.com). Unless the Internet fax provider offers it, the Internet fax method does not provide fax notification.

Windows 2000/XP fax

When Windows 2000/XP fax is configured in HP DSS, the HP DSS server uses the APIs provided by Microsoft to communicate directly with the Windows 2000 or XP Fax server. This method uses a fax modem on the computer where the HP DSS is running, which allows that computer to act as a turnkey fax gateway.

LAN fax

When it is configured for the LAN fax method, HP DSS uses a simple "file drop" mechanism to deliver fax files and receive fax-notification files for each fax job that is sent from an MFP. Most LAN fax solutions support some method of fax notification.

Figure 3-6 LAN fax process illustrates the LAN fax process. A more detailed description of the LAN fax method follows.

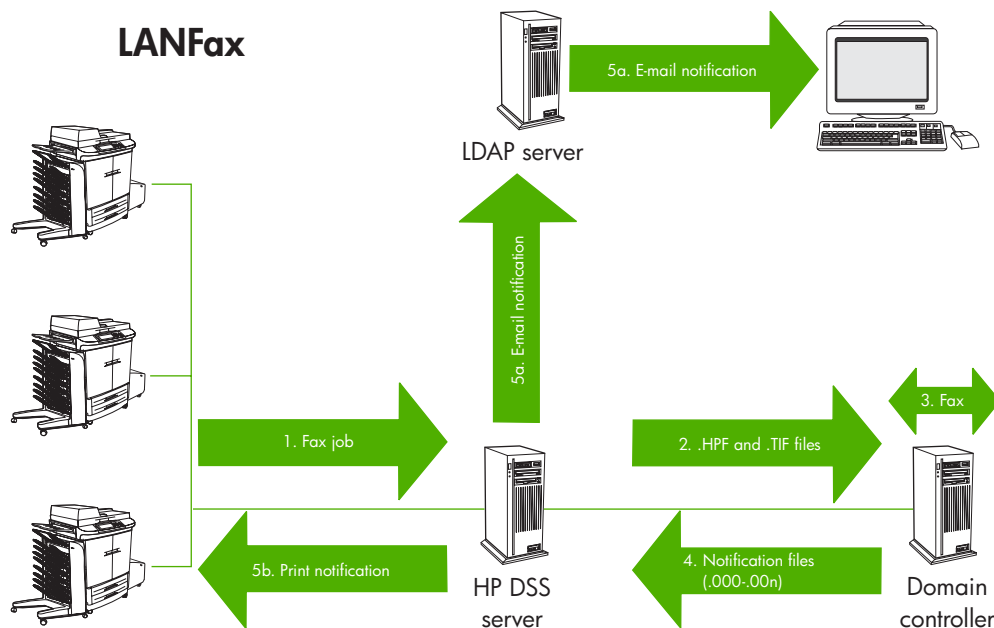



Figure 3-6 LAN fax process

Using LAN Fax to send a fax

1. The device sends the fax job to the HP DSS server along with the fax number, and, if authentication is used, the authenticated user's credentials.
 2. HP DSS splits the information into two files and sends them. The .HPF file contains information such as the fax number, the number of retries, and other information that has been configured on the **Fax** tab in HP DSS. Along with the .HPF file, the Task Manager sends a .TIFF or .PCL image file containing the fax content. HP DSS copies the two files to a shared fax folder that is configured on the LAN fax server and in the HP MFP DSS Configuration Utility.
-
-  **NOTE** For most LAN fax vendors, the administrator sets up a single folder named "HPFSCAN" on the LAN fax server. All LAN fax vendors provide an administrative setting that specifies the path to this shared folder. On the **Fax** tab of the HP MFP DSS Configuration Utility, the user specifies a folder path, which is the path to this same HPFSCAN folder.
-
3. The LAN fax server converts the .TIFF image(s) into fax format (analog), dials the number(s) that are included in the .HPF file, and transmits the fax to the receiving fax device. If the transmission is successful and the receiving fax device indicates success in the T30 communication with the LAN fax server; OR if the LAN fax server exceeds the server's retry limit (configured in HP DSS) AND the LAN fax server supports HP's method for fax notification, the LAN fax server writes a notification file to the shared fax folder for each fax number dialed.
 4. HP DSS periodically checks the shared fax folder for notification files. If it finds a file, HP DSS pulls it from the shared fax folder.
 5. Using the information that is stored in the HP DSS log, the HP DSS server sends the authenticated user an e-mail notification (5a) or prints a notification report at the MFP from which the fax was sent (5b).



NOTE Fax notification for Captaris RightFAX works slightly differently. Authentication must be enabled in HP DSS. The account name that the user specified at the device control panel (either the Windows or Novell user account name) is inserted into the .HPF file. The RightFax server uses this value to match the authenticated user to a specific RightFax user account. If this match occurs, the RightFax server sends an e-mail notification to the authenticated user's e-mail account.

LAN Fax notification

When the LAN fax software picks up the image and envelope files and processes them, the software returns a status or notification file that tells what happened. This is called notification. Many LAN fax vendors support notification.

Notifications are not detailed or complex. They include the phone number and a status message, such as OK, FAILED, or RETRY. HP DSS looks for these status messages and uses the information to make entries into the HP DSS log file and to create the e-mail or printed notification messages.

As mentioned in the previous section, if the fax transmission is successful and the receiving fax device indicates success in the T30 communication with the LAN fax server; OR if the LAN fax server exceeds the server's retry limit (configured in HP DSS) AND the LAN fax server supports HP's method for fax notification, then the LAN fax server writes a notification file to the shared fax folder for each fax number dialed. These notification files have the same eight-digit name as the .TIFF and .HPF files, but different file extensions. The extension for the first notification file (the first fax number dialed) is .000, and for the second notification file (the second fax number dialed) is .001, the third notification file is .002, and so on.

HP DSS periodically looks in the shared fax folder for notification files. If it finds a file, HP DSS pulls it from the shared fax folder. Using the information that is stored in the HP DSS log, the HP DSS server sends the authenticated user an e-mail notification or prints a notification report at the MFP from which the fax was sent.

Configuring LAN fax notification

If the LAN fax product being used supports notification, a **Notify** button appears on the device control-panel fax home screen when the user is preparing to send the fax. The user touches this button to select the type of notification and to select whether a notification is generated for every fax sent or only when an error occurs.

Timeout

The notification timeout is the length of time that HP DSS waits before reporting a failed fax delivery. The default timeout value is two hours.

Configuring the fax feature

The HP MFP DSS Configuration Utility **Fax** tab controls all of the HP DSS fax settings. To configure the fax option, first select the fax delivery method from the **Faxing Method** drop-down list. The following options are available:

- None
- LAN Fax

- Internet Fax
- MS Windows 2000 Fax

Depending on which method is selected, the applicable settings appear on the **Fax** tab. Fill in these settings to complete the fax configuration process.

To configure LAN fax

Follow these instructions to set up faxing from the device by using the network LAN fax service.

1. On the HP DSS server, open the HP MFP DSS Configuration Utility and click the **Fax** tab.
2. Select **LanFax** from the **Fax Method** drop-down list.

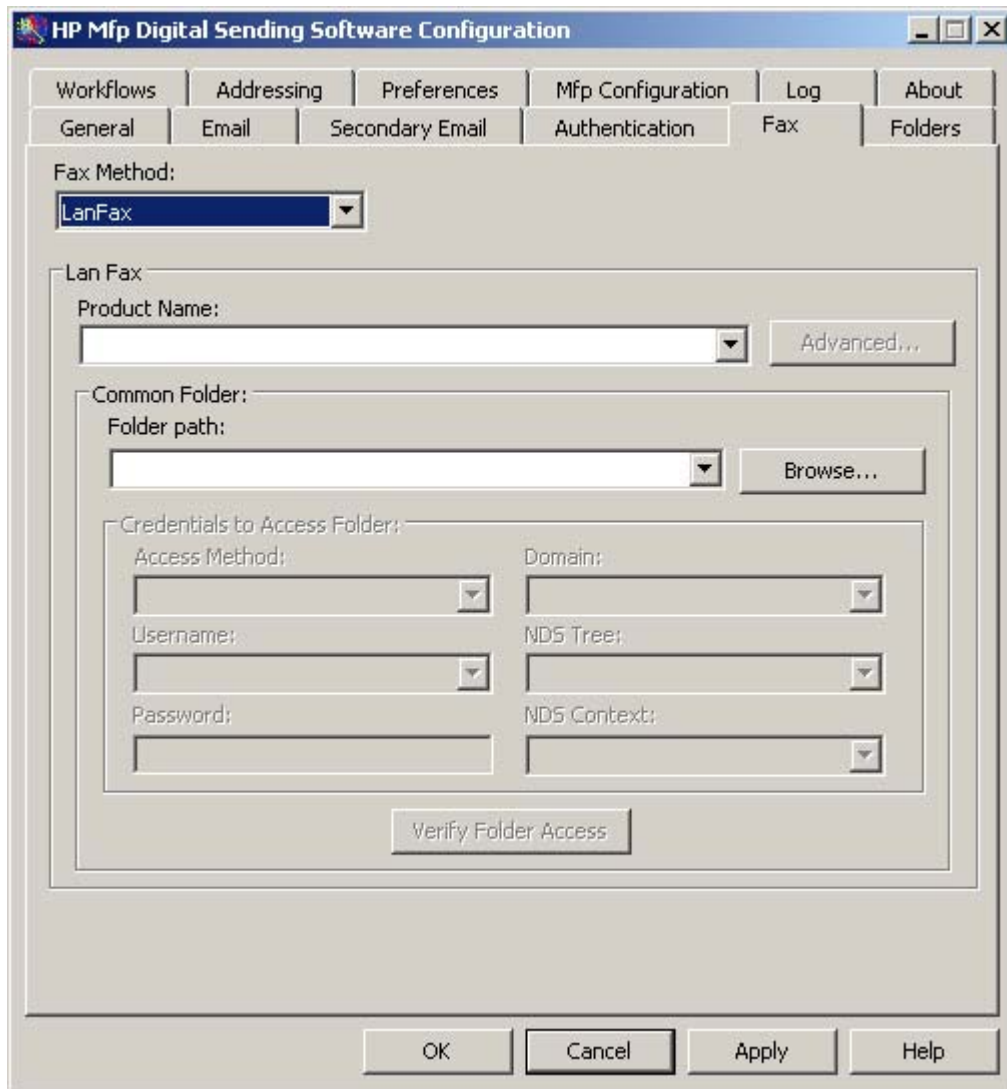


Figure 3-7 The **Fax** tab

3. Select the LAN fax software product name from the **Product Name** drop-down box.



NOTE If you are unsure about whether the product supports notification, select the **Generic LanFax product without notification support** option from the drop-down box.

4. Click **Advanced** to set up input and output settings for the LAN fax product.
5. Click **Browse** to select the network folder that the fax software uses.
6. Complete the **Credentials to Access Folder** section, if required. Then click **Verify Folder Access** to test the credentials and verify access to the folder.
7. Click **Apply** to save the LAN fax settings.

To configure Internet fax

With an Internet fax service, faxes are sent in e-mail. When using HP DSS, the user specifies a fax number at the device, and then the software creates and sends the e-mail behind the scenes.

1. On the HP DSS server, open the HP MFP DSS Configuration Utility and click the **Fax** tab.
2. Select **Internet Fax** from the **Fax Method** drop-down list.

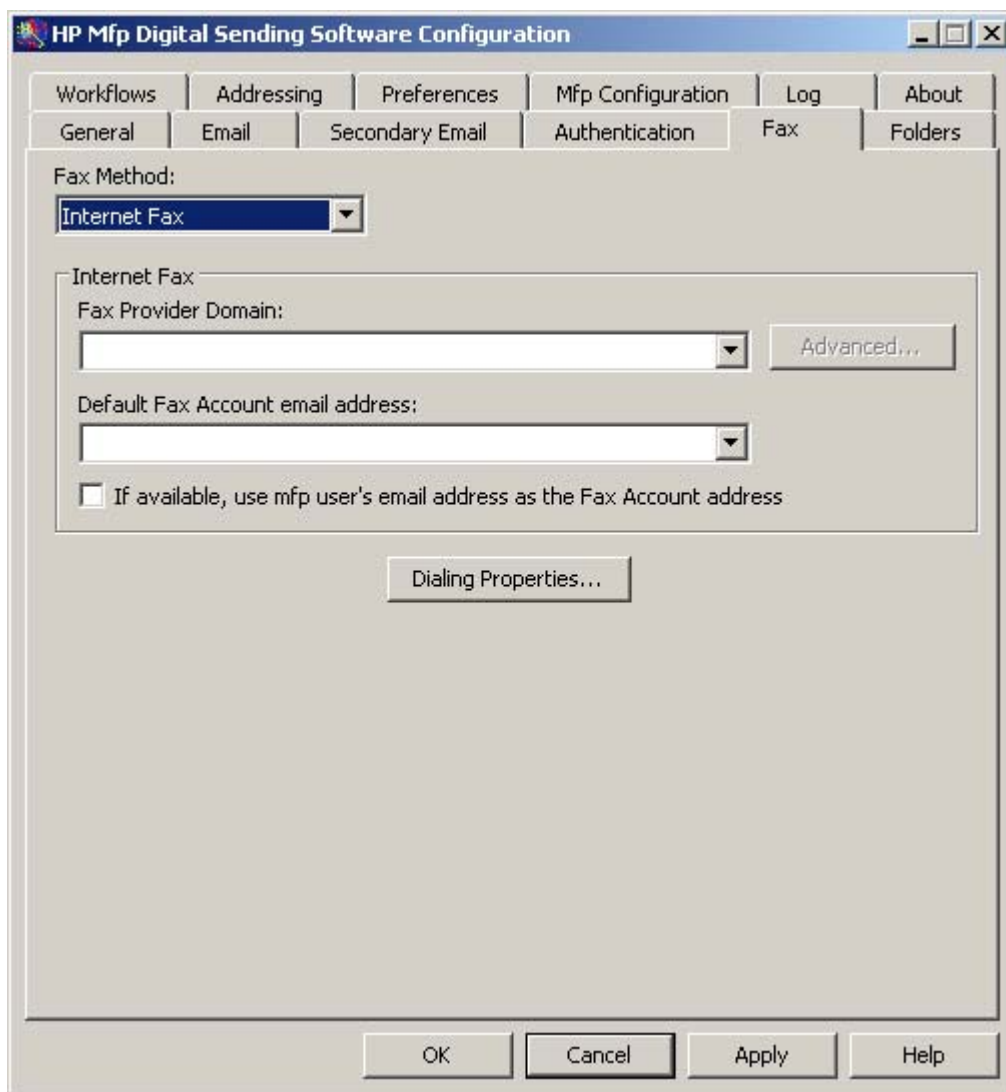


Figure 3-8 Configuring Internet fax

3. Type the domain name for the Internet fax provider into the **Fax Provider Domain** text box (for example, efax.com). HP DSS takes the phone number that is typed at the device and then uses this domain name to create the e-mail (for example, [phone number]@efax.com).
4. Type a valid e-mail address into the **Default Fax Account** e-mail address text box. The fax service uses this e-mail address for billing purposes and for any returned or failed Internet fax e-mail.
5. Select the check box to use the authenticated user's e-mail address as the return e-mail address. If the device user's e-mail address is not available, the **Default Fax Account** e-mail address is used.



NOTE If you select this option, the user's e-mail address must be registered with the Internet fax service provider in order to fax successfully.

6. Click **Apply** to save the Internet fax settings.

To configure Windows 2000/XP fax

In order to use the Windows 2000/XP fax service, a fax modem must be installed on the HP DSS server.

1. On the HP DSS server, open the HP MFP DSS Configuration Utility and click the **Fax** tab.

2. Select **MS Windows 2000 Fax** from the drop-down list on the **Fax** tab.

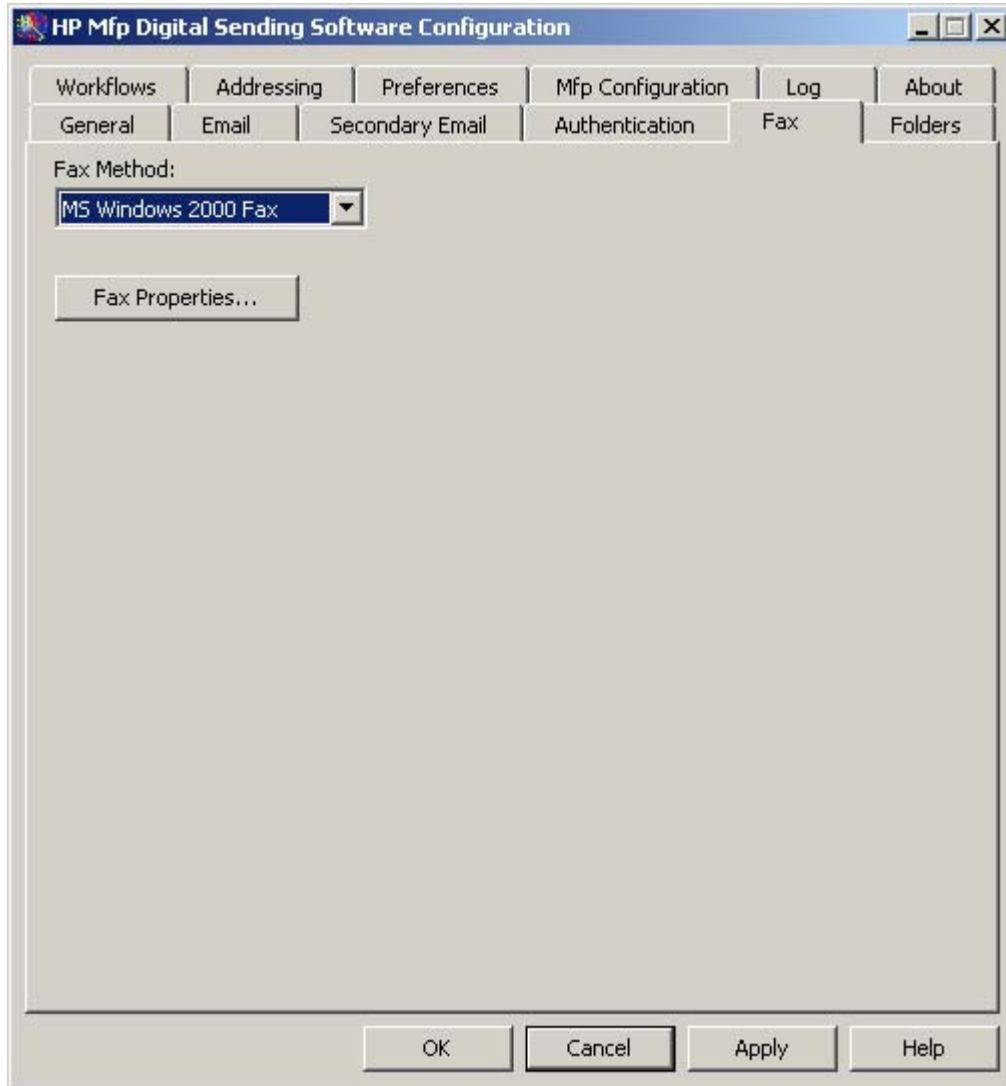


Figure 3-9 Configuring Windows 2000 fax

3. Click **Fax Properties**. The **Windows Fax Console** dialog box appears. Use the **Tools** menu to configure any settings, if needed.
4. Click **Apply** to save the Windows 2000 fax settings.

To configure Analog (embedded) fax

HP DSS can be used to configure the settings for the embedded analog fax modem in an MFP. Use the **Send to Fax** tab in the MFP Configuration interface to configure these settings on individual MFPs. See [Send to Fax tab](#) for information about this tab.

Using the send-to-folder feature

If the send-to-folder feature is configured as part of HP DSS, users can scan files and send them to folders on the network. Supported operating systems for folder destinations are Windows 98, Windows NT, Windows 2000, Windows XP, Windows 2003, and Novell NetWare.

Figure 3-10 Send-to-folder feature outlines this feature.

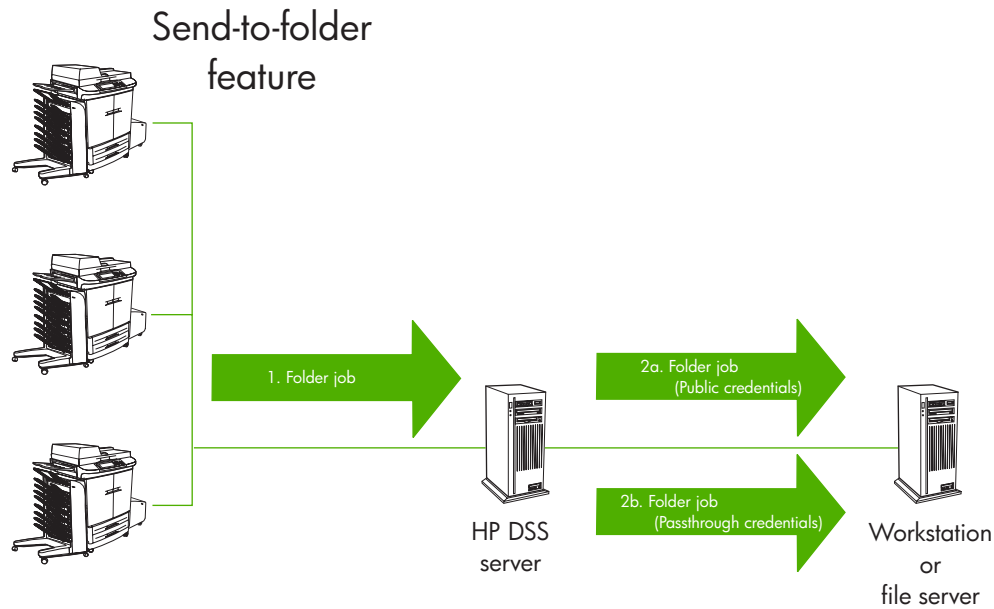


Figure 3-10 Send-to-folder feature

Using HP DSS to send a document to a folder

Follow these instructions to scan a document and send it to a folder.

1. Select **FOLDER** from the send options on the device.
2. Any folders that the administrator has specified as digital send destinations are listed in the **Folders** list. Touch the check box to select an existing path. To specify a new folder, touch **Other**. Type the path for the folder by using the keyboard interface. Touch **OK** on the keyboard screen to save the new path. The software verifies that a valid path name has been specified.



NOTE Specifying a folder does not add it to the folders list permanently. The system administrator must add new folders to the list by using the HP MFP DSS Configuration Utility.

3. Specify a filename by touching **File Name**. Using the keyboard interface, type in the filename. Specifying a filename is optional. If one is not specified, the software assigns a unique filename to the file when it is saved.
4. To send, touch **Start** to begin scanning the document. Status messages show the progress of the send operation.

Changing the settings

Before sending to a folder, the user can change the following settings by touching **Folder Settings** on the control-panel interface:

- **Scan Preferences:** Select black and white or color (if available).
- **File Type:** Select .PDF, .TIFF, .MTIFF, or .JPEG.



NOTE If the document has multiple pages, the .PDF and .MTIFF formats produce a single file that contains all of the pages. The .TIFF and .JPEG formats produce a single file for each scanned page.

- **Scanning resolution:** Select 75, 150, 200, 300, 400, or 600 dots per inch (dpi).
- **File size:** Select a small, standard, or large file size.
- **Image enhancement:** Change the sharpness or background-removal settings for the scanned image.

Configuring the send-to-folder feature

Use the HP MFP DSS Configuration Utility **Folders** tab to set up the send-to-folder feature and select network folders to send to.

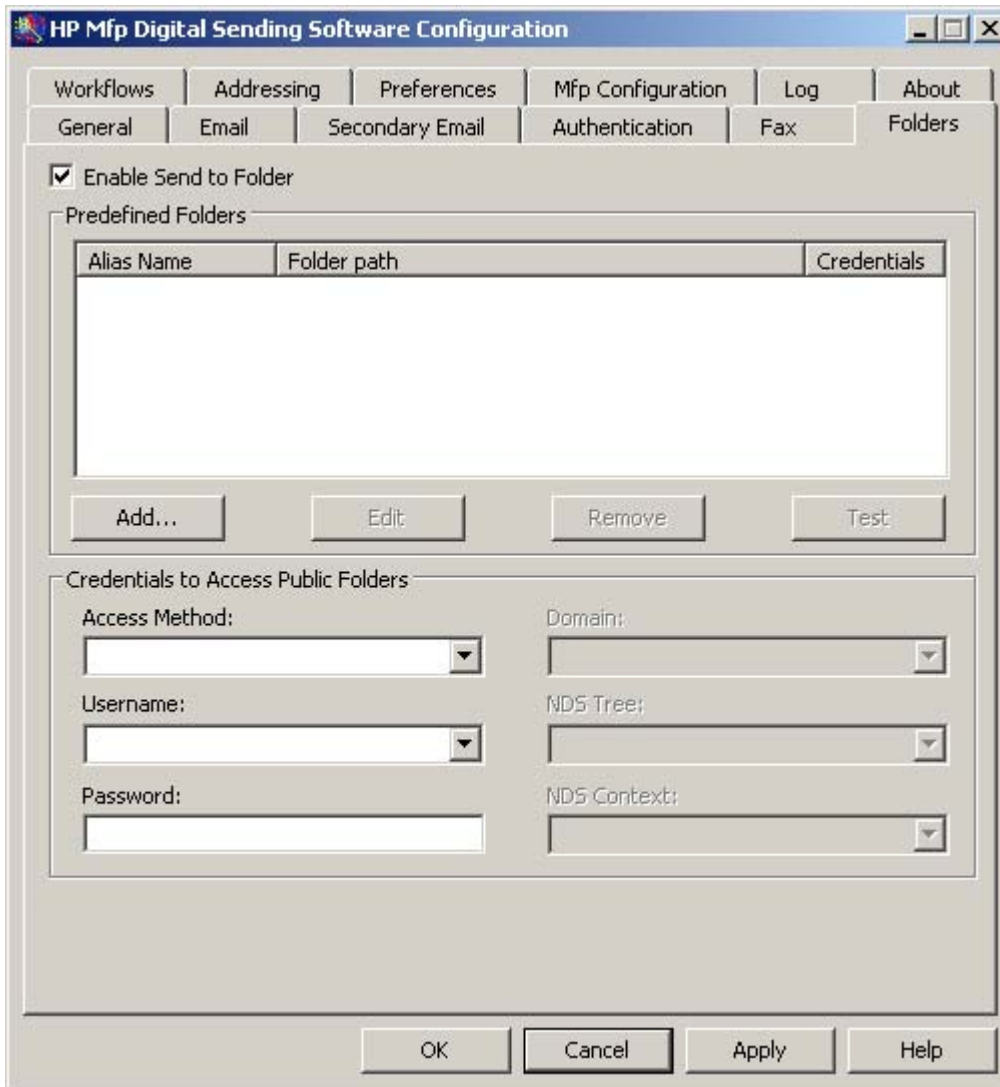


Figure 3-11 The **Folders** tab

To configure the send-to-folder feature

1. On the HP DSS server, open the HP MFP DSS Configuration Utility and click the **Folders** tab.
2. Select the **Enable Send to Folder** check box.
3. Click **Add...** to add a new folder. The **Add Predefined Folder** dialog box appears.
4. Type a name for the folder into the **Alias Name** text box. This name appears on the device control-panel interface.
5. Click **Browse...** to browse to a folder location, and then click **OK** to accept it.



NOTE Supported operating systems for folder destinations are Windows 98, Windows NT, Windows 2000, Windows XP, Windows 2003, and Novell NetWare.

6. Select the credentials that should be used to gain access to the folder from the **Access Credentials** drop-down list. If **Public** is selected, the program uses the **Credentials to Access**

Public Folders on the **Folders** tab. If **MFP User** is selected, the program uses the credentials with which the user has logged into the device.

7. Click **OK** to save the settings. The new folder is added to the list.
8. Repeat steps 1 through 5 to add more folders.
9. Type the public access credentials that are required to gain access to folders in the **Credentials to Access Public Folders** area of the **Folders** tab. This information is required before the folder list can be saved.
10. Click **Apply** to save the new folders.

Using the send-to-workflow feature

If workflow functionality is configured, the user can scan a document and send it to a custom workflow destination. A workflow destination provides the ability to send additional information in a metadata file along with the scanned document to a specified network or FTP location. Prompts at the control panel are used to collect specific information for the metadata file. A third-party software program monitoring the network folder or FTP site can then retrieve and decipher the information, performing the specified operation on the scanned image. The system administrator can also set up a printer as a workflow destination, which allows users to scan a document and then send it directly to any network printer to be printed.

1. When the user selects **WORKFLOW** on the control-panel display, the workflow prompt screen appears.
2. To send to a workflow, the user selects one of the custom workflow buttons. Some workflow buttons might require the user to fill in more information to complete the operation. They might specify a certain file type for the scanned document or might interact with third-party software, such as a document management system, so files that are sent to a particular destination can be automatically processed.

Configuring the send-to-workflow feature

The HP MFP DSS Configuration Utility **Workflows** tab can also be used to view workflow entries or to set up workflow processes. To enable this feature, first select the **Enable Workflows** check box at the top of the tab.

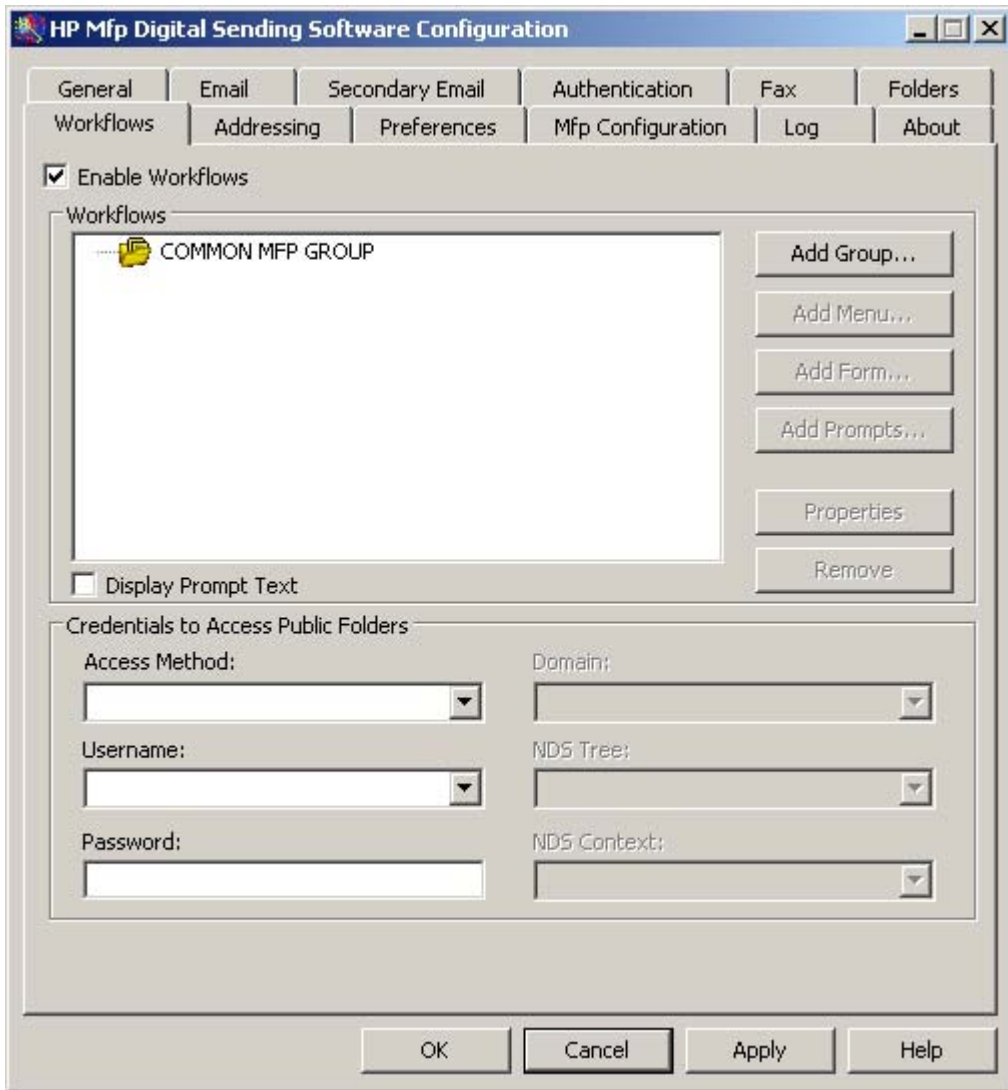


Figure 3-12 The **Workflows** tab

The workflow configuration process comprises three steps:

- Creating the workflow group, which defines which workflow menus and forms are available on the device control panel.
- Creating the workflow menu, which creates logical groups of workflow forms.
- Creating the workflow form, which accumulates information that the user specifies at the control panel before initiating a send-to-workflow job.

Configuring a workflow group

The first step in creating a workflow process is to create a workflow group.



NOTE Rather than creating a new group, the default group, called the **Common MFP Group** can also be used. This group cannot be deleted. Custom groups are optional and provide a way to associate different workflows with different devices or groups of devices.

1. On the HP DSS server, open the HP MFP DSS Configuration Utility and click the **Workflows** tab.
2. Click **Add Group**. The **Workflow Group** dialog box appears.
3. Type the name of the new group. The name must be unique.
4. Click **OK** to save the new group.

Configuring a workflow menu

The second step in creating a workflow process is to create a workflow menu.

1. In the workflow tree, click a group to select it.
2. Click **Add Menu**. The **Workflow Menu** dialog box appears.

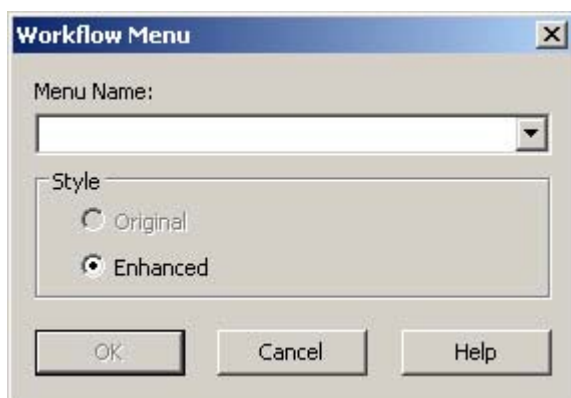


Figure 3-13 Workflow Menu dialog box

3. Type the name of the new menu. This name must be unique within the workflow group.
4. Select the style of the workflow menu. The style determines which options are available for workflow forms within this workflow menu. The only available choice is **Enhanced**.



NOTE In version 4.3 of the HP DSS program, the **Workflow Menu** dialog box has an additional **Allow Nesting of Menus** option under the **Enhanced** selection. Select this option if you want to create multi-level workflow menus.

NOTE Only third-party workflow programs can create “Original” style workflow menus. For backward compatibility, the HP MFP DSS Configuration Utility can view and modify these menus, but cannot create them.

5. Click **OK** to save the new workflow menu.

Configuring a workflow form

The final step in creating a workflow process is to create a workflow form. Forms are destination-specific. Three destination types are available:

- Folder
- FTP site
- Printer

The following sections describe how to create a workflow form for each of these destination types.

To create a workflow form for a folder destination

1. Click a workflow menu to select it.
2. Click **Add Form**. The **Workflow Form** dialog box appears.

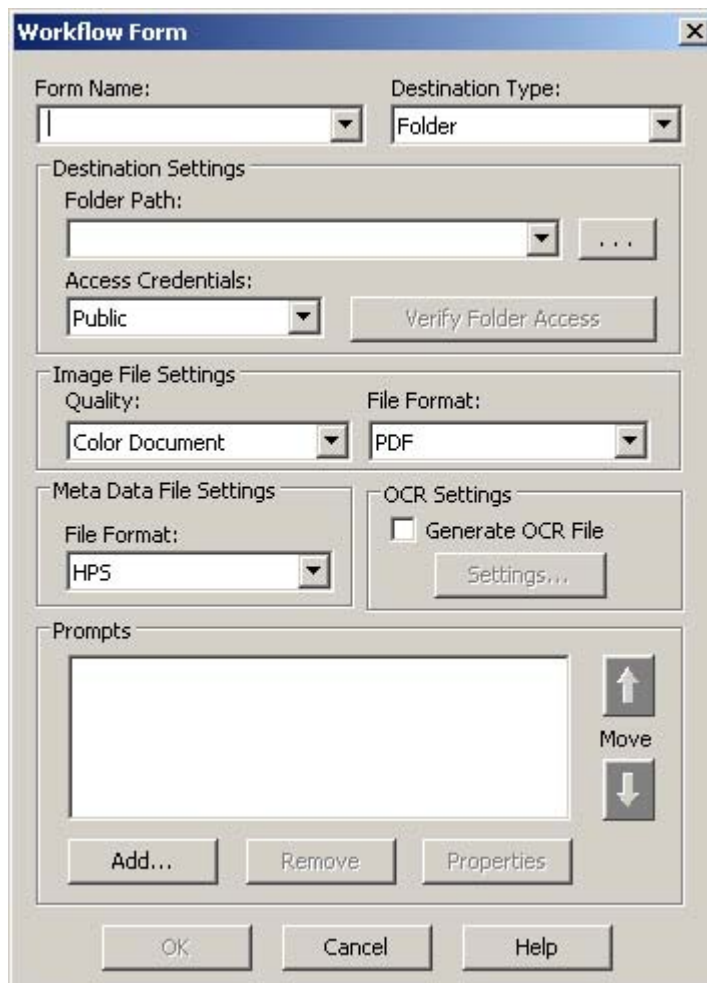


Figure 3-14 Workflow Form dialog box

3. In the **Form Name** text box, type a name for the new form. The name must be unique within the workflow menu.
4. Select **Folder** from the **Destination Type** drop-down list.



NOTE Based on the option selected, the options on the **Workflow Form** dialog box change. This procedure applies to the **Folder** option. See the following sections for instructions for creating a workflow form for an FTP site or a printer.

5. Type the path for the destination folder in the **Folder Path** text box, or browse to select a path.
6. Select the access method for the folder from the **Access Credentials** drop-down list. The choices are **Public** and **MFP User**. If **MFP User** is selected, HP DSS uses the credentials of the user that is logged into the device. If **Public** is selected, HP DSS uses the **Credentials to Access Public Folders** that are specified on the main **Workflows** tab.
7. Under **Image File Settings**, select the settings for the scanned file. These should be the settings that the third-party software program that processes the file requires.
8. From the **File Format** drop-down list, select the file type for the metadata file. The options are **None**, **HPS**, or **XML**. The metadata file contains the data that is collected by the workflow prompts. If no prompts are being created, select **None**.
9. Select the **Generate OCR File** check box under **OCR Settings** if the processing software program requires an OCR (optical character recognition) file. Click **Settings** to specify the OCR settings for language and output-file format.



NOTE The OCR processing requires significant system requirements. If OCR processing is used, a system that has a Pentium® 4 processor and at least one gigabyte of RAM is recommended.

10. In the **Prompts** area, define any appropriate prompts and expected responses for the user of the workflow form. The prompts appear on the device control panel. The responses to the prompts are saved in the metadata file, which is stored with the document image for use by the third-party workflow software program.

Follow these instructions to add prompts.

- a. Click **Add**. The **Add Prompts** dialog box appears.

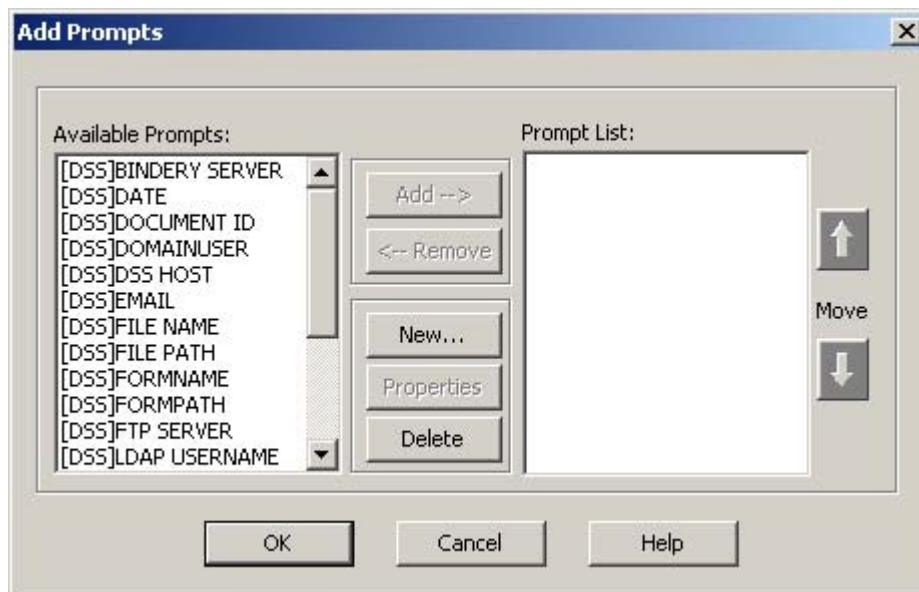


Figure 3-15 Add Prompts dialog box

- b. In the **Add Prompts** dialog box, click **New** to create a new prompt. This opens the **Workflow Prompt** dialog box.



NOTE In version 4.3 of the HP DSS program, some default prompts appear in the **Available Prompts** box. You can either use one of these default prompts or create a new prompt. Default prompts are not available in versions earlier than 4.3.

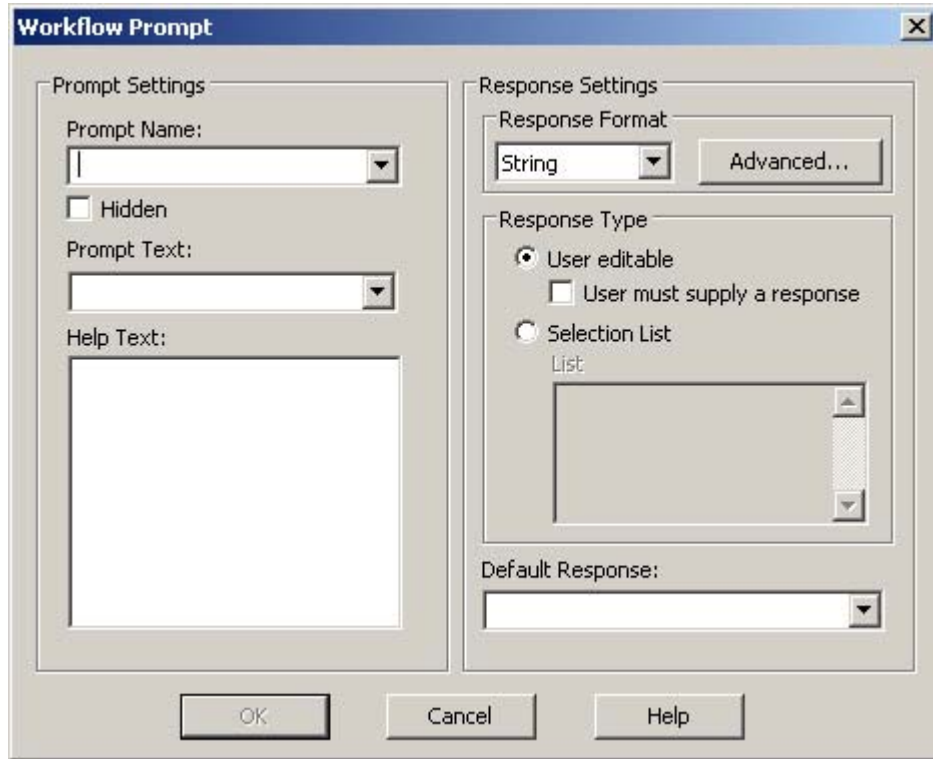


Figure 3-16 Workflow Prompt dialog box

- c. Under **Prompt Settings** in the **Workflow Prompt** dialog box, type the **Prompt Name**. This name is used internally and is not visible to the user. It must be unique within the workflow form.
- d. Select the **Hidden** check box if the prompt is not to be shown to the user. Hidden prompts are typically used to send specific unaltered information to the third-party programs in the metadata file. When the **Hidden** check box is selected, a **Prompt Information** text box appears. Type the information for the hidden prompt in the **Prompt Information** text box.
- e. In the **Prompt Text** text box, type the text that you want to appear on the device control panel.
- f. In the **Help Text** text box, type the help text for the prompt. The help text appears if the user touches **HELP** on the device control panel while the prompt is on the screen.
- g. Under **Response Settings**, select the **Response Format**. The **Response Format** options are **String**, **Numeric**, **Date**, **Time**, or **Privacy**. [Table 3-3 Response format options](#) provides a description of each option.

Table 3-3 Response format options

Format	Attributes
String	<ul style="list-style-type: none">• The user can type any alphanumeric string.• Minimum length: 1• Maximum length: 127
Numeric	<ul style="list-style-type: none">• The user is limited to typing numbers only.• Decimal places range from 0 to 15• Minimum Value: 0• Maximum Value: 4294967295
Date	<ul style="list-style-type: none">• The user is limited to typing a date value in the form of HH/DD/YYYY. The date format cannot be changed.
Time	<ul style="list-style-type: none">• The user is limited to typing a time value in the form of HH:MM:SS using the 24-hour clock. The time format cannot be changed.
Privacy	<ul style="list-style-type: none">• As the user types in text at the control panel, it is displayed as asterisks.• Typically used for passwords

- h. Under **Response Type**, select **User Editable** or **Selection List**. If **User Editable** is selected, select the **User must supply a response** check box to require a response.
- i. As appropriate, type a default response in the **Default Response** text box. The program uses the default response if the user does not provide a response to the prompt.
- j. Click **OK** to save the prompt settings. The new prompt is added to the **Prompts List** in the **Add Prompts** dialog box.
- k. Repeat steps b through j as needed to create more prompts.
- l. After creating all of the required prompts, use the **Move** buttons at the bottom of the list to adjust the order of the prompts.
- m. Click **OK** to accept the new set of prompts. The new prompts appear in the **Prompts** area of the **Workflow Form** dialog box.

11. Click **OK** to accept all of the settings on the **Workflow Form** dialog box. The new form appears in the workflows list on the **Workflows** tab.



NOTE A workflow form can be edited at any time by selecting it and then clicking **Properties**.

12. Type the public access credentials for gaining access to workflow folders in the **Credentials to Access Public Folders** area of the **Workflow** tab. This information is required before the workflow settings can be saved.
13. Click **Apply** to save the new workflow settings.

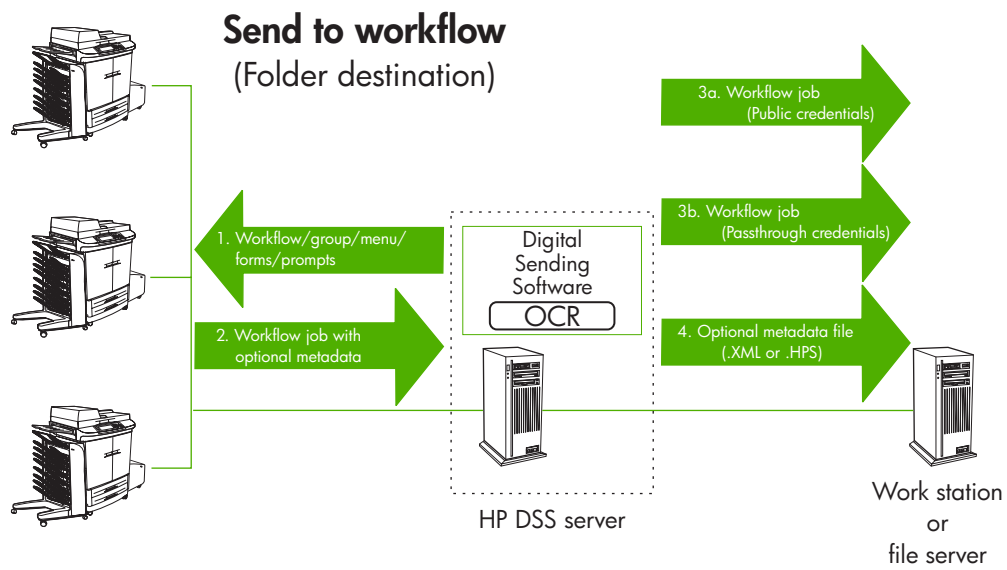
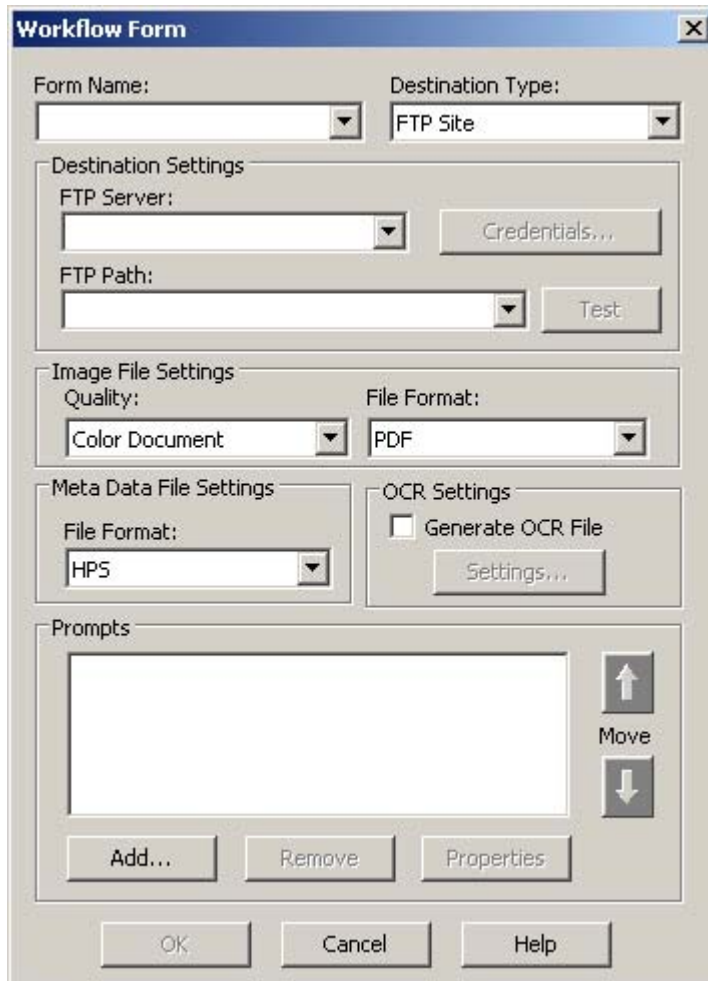


Figure 3-17 Sending to a workflow folder destination

Creating a workflow form for an FTP site

The following instructions describe how to send a workflow document to an FTP site rather than a network folder.

1. Click a workflow menu to select it.
2. Click **Add Form**. The **Workflow Form** dialog box appears.



The screenshot shows the 'Workflow Form' dialog box with the following settings:

- Form Name:** (empty text box)
- Destination Type:** FTP Site
- Destination Settings:**
 - FTP Server:** (empty text box) with a 'Credentials...' button.
 - FTP Path:** (empty text box) with a 'Test' button.
- Image File Settings:**
 - Quality:** Color Document
 - File Format:** PDF
- Meta Data File Settings:**
 - File Format:** HPS
- OCR Settings:**
 - Generate OCR File
 - Settings... button
- Prompts:** (empty list area) with 'Add...', 'Remove', and 'Properties' buttons. A 'Move' button with up and down arrows is also present.

At the bottom are 'OK', 'Cancel', and 'Help' buttons.

Figure 3-18 Workflow form for an FTP site

3. In the **Form Name** text box, type a name for the new form. The name must be unique within the workflow menu.
4. Select **FTP Site** in the **Destination Type** drop-down box.
5. In the **FTP Server** text box, type the host name or TCP/IP address of the FTP server.
6. Click **Credentials**, and then type in the username and password that are required for the FTP server. Click **OK** to save the credentials.
7. In the **FTP Path** text box, type in the path to the directory on the FTP server that will hold the scanned documents.
8. Follow steps 7 through 11 in the previous procedure (see [To create a workflow form for a folder destination](#)) to complete the remainder of the workflow form settings and add any prompts.

Creating a workflow form for a printer

The following instructions describe how a workflow form can also be used to send a scanned document to a network printer to be printed.

1. Click a workflow menu to select it.
2. Click **Add Form**. The **Workflow Form** dialog box appears.




Figure 3-19 Workflow form for a printer

3. In the **Form Name** text box, type a name for the new form. The name must be unique within the workflow menu.
4. Select **Printer** in the **Destination Type** drop-down box.
5. In the **Select Printer** drop-down box, select a printer from the list of available network printers.
6. Select one of the option buttons to use the default or custom printer preferences. If custom printer preferences are selected, click **Preferences** to set them up.



NOTE The MFP user cannot change any of these print settings from the MFP control panel.

7. Click **OK** to save the workflow form.
8. Click **Apply** to save the settings on the **Workflow** tab.

Using authentication

Authentication is a security feature that requires users to provide a network username and password before using digital-sending features. Authentication can be turned on or off for each device that the HP DSS supports.



NOTE At no time are the credentials that are used to authenticate at the device written to either the HP DSS server or the device hard disk. In addition, although the credentials that the HP DSS administrator uses to configure authentication or LDAP addressing are written to the HP DSS server hard disk, a hashing algorithm is incorporated to ensure that these credentials cannot be recovered.

LDAP bind methods

Authentication can be performed by using Microsoft Windows, an LDAP server, or Novell NetWare. The authentication process also retrieves the user's e-mail address, so that the sender's address is automatically supplied in the **From:** text box when the e-mail is sent. Because the address cannot be changed or erased, users are prevented from sending e-mail using a fictitious return address.

E-mail retrieval is carried out by connecting to a local LDAP server using one of four possible bind methods. The following table outlines the types of LDAP bind methods that are used for HP DSS.

Table 3-4 Authentication bind methods

Bind method	Description	Can be used by
Anonymous	The selected LDAP server does not require user credentials to gain access to the LDAP database	Windows Novell
Simple	The selected LDAP server requires user credentials but does not support NTLM or SPNEGO. <ul style="list-style-type: none">The password, if any, is sent non-encrypted across the network.The process requires a username and password.	Windows Novell LDAP
Simple over Secure Channel (SSL)	The selected LDAP server requires user credentials but does not support NTLM or SPNEGO. <ul style="list-style-type: none">All data, including the username and password, is encrypted by using the Secure Sockets Layer (SSL).The LDAP server must be set up to support SSL.	Windows LDAP
Windows Negotiated (SPNEGO)	The selected LDAP server requires user credentials and supports SPNEGO and SSL. <ul style="list-style-type: none">Use this selection negotiate the strongest authentication protocol that both the LDAP Server and the HP DSS server support.Kerberos 5 is supported for Active Directory authentication.NTLM is supported for Exchange 5.5 server authentication.	Windows

Methods of authentication

This section describes the three methods of authentication:

- Windows Active Directory
- Novell authentication
- LDAP authentication

Windows Active Directory authentication method

HP DSS Windows authentication uses Microsoft Active Directory, a special-purpose database that contains information about objects, including users, that are contained within the domain. The Active Directory database resides on domain controllers and is automatically replicated across all domain controllers in the domain. Active Directory provides an LDAP interface to the data in the directory database.

As shown in [Figure 3-20 Windows Active Directory authentication](#), the following steps occur during Windows authentication:

1. The user types his or her username and password at the device. This information is securely transmitted to the HP DSS server.
2. The HP DSS program authenticates to the domain through the Windows API to validate the user's credentials.
3. If the user's credentials are correct, the Domain Controller returns either the security identifier (SID) or the BSID (Binary SID).
4. Using the LDAP interface, HP DSS queries the LDAP directory for the authenticated user's e-mail address.
5. The LDAP directory returns the authenticated user's e-mail address.
6. HP DSS inserts the authenticated user's e-mail address in the **From:** text box of the e-mail and prohibits the user from changing the field.

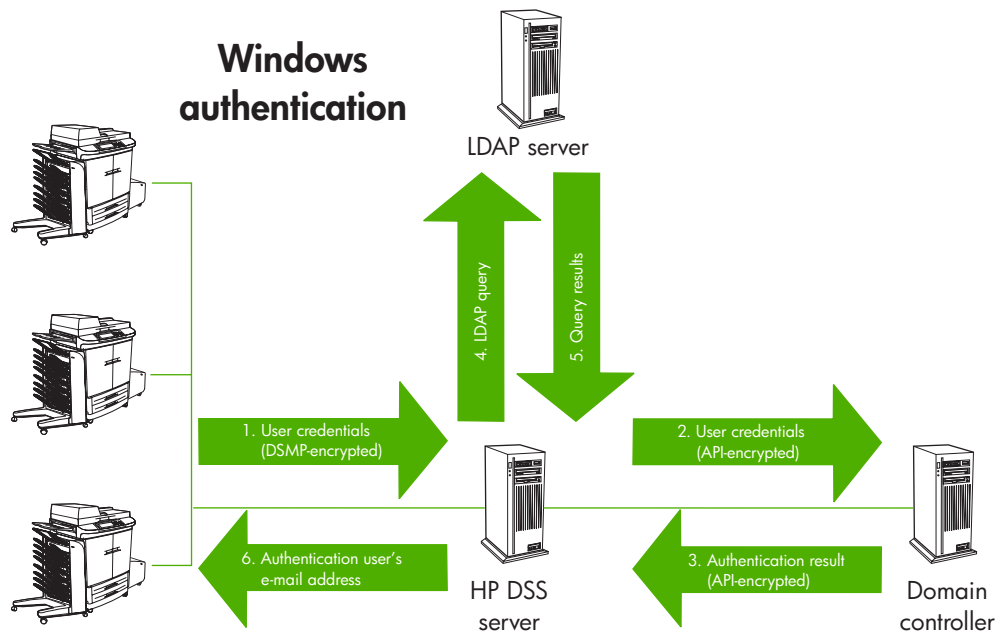


Figure 3-20 Windows Active Directory authentication

Determining the LDAP server bind method for Windows

By default, Active Directory is not configured to accept anonymous queries for information that is contained in the Active Directory store. When an administrator configures LDAP addressing or authentication, he or she must decide between changing Active Directory to accept anonymous queries and configuring HP DSS to have authenticated access. If Active Directory is configured for anonymous access, HP DSS can be configured to do an anonymous LDAP query. If Active Directory is *not* configured for anonymous access, HP DSS must be configured for either Simple or SPNEGO authentication. Because Active Directory supports SPNEGO for backward compatibility with Windows NT clients, it is the preferred method for configuring HP DSS authentication. SPNEGO authentication uses either Kerberos or NTLM, depending on the environment.



NOTE The username and password that are used in the Simple method of authentication are transmitted over the network in cleartext. This means that this information can be read by anyone who has access to the data on the network.

To configure Active Directory Services for an anonymous LDAP query

1. Open the Active Directory Users & Computers Microsoft Management Console program.
2. Right-click the **Users** container and then select **Properties**.
3. Click the **Security** tab.
4. Click **Add**.
5. Select **Everyone** and then click **Add**.
6. Click **OK**.
7. Click **Advanced**.
8. Select **Everyone**.

9. Click **View/Edit**.
10. In the **Apply onto** drop-down list, select **This object and all child objects**.
11. Click **Apply**.
12. Click **OK** to close the **Properties** dialog box.
13. Right-click **Users** and then click **Refresh**.



NOTE Enabling anonymous access to the **Users** container might also enable other anonymous users (for example, the Guest logon) to view LDAP properties. For more information about security and Active Directory, consult Microsoft support.

Novell authentication methods

Two types of Novell authentication are available:

- **Novell NDS.** This method integrates with Novell Directory Services.
- **Novell Bindery.** This method integrates with Novell Bindery.

For the LDAP server bind method, Novell can use either Simple or Anonymous. See [Table 3-4 Authentication bind methods](#).

As shown in [Figure 3-21 Novell authentication](#), the following steps occur during Novell authentication:

1. The user types his or her username and password at the device and this information is securely transmitted to the Digital Sending Service (HP DSS).
2. HP DSS authenticates to the directory through the Novell client API to validate the user's credentials.
3. If the user's credentials are correct, the Novell Directory Server returns success.
4. Using the LDAP interface, HP DSS queries the LDAP directory (Novell Directory Server or Novell eDirectory Server) for the authenticated user's e-mail address.
5. The LDAP directory returns the authenticated user's e-mail address.
6. HP DSS inserts the authenticated user's e-mail address in the **From:** text box of the e-mail and prohibits the user from changing that field.

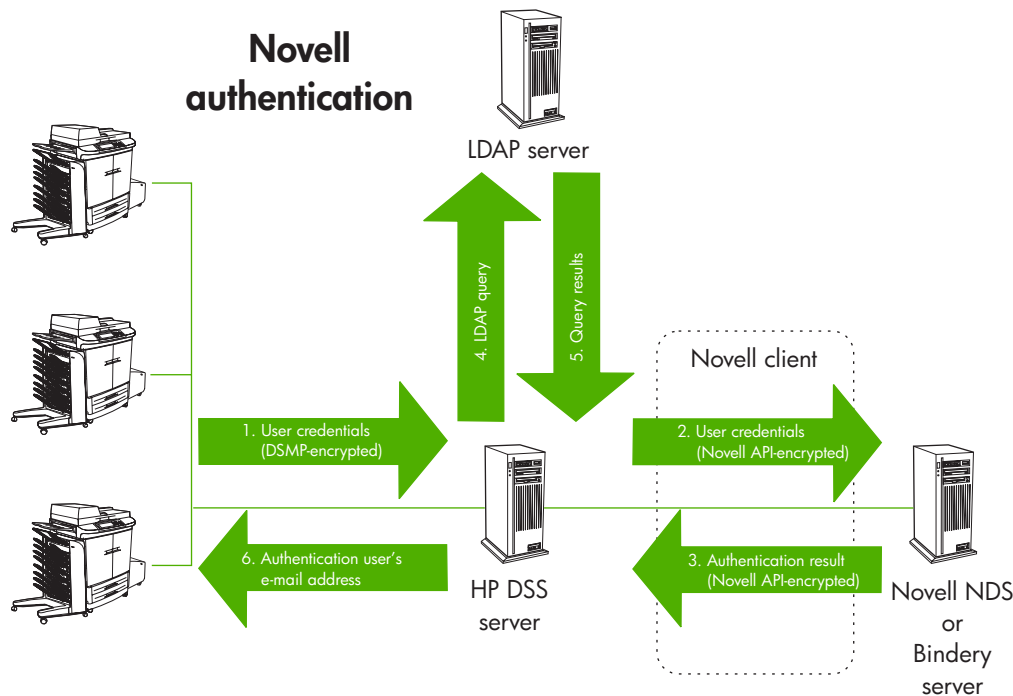


Figure 3-21 Novell authentication

Novell NDS configuration

When setting up Novell NDS authentication on the **Authentication** tab, the **Search Root** text box is typically left blank. Then, on the MFP configuration **Authentication** tab, information is provided about the **Default NDS Tree** and **Default NDS Context**. When users log in at the device, the default NDS tree and context are shown on the login screen, and the user can edit them if necessary.

Novell Bindery configuration

When setting up Novell Bindery authentication on the **Authentication** tab, the **Search Root** text box is also typically left blank. Then, on the MFP configuration **Authentication** tab, information is provided about the **Default Bindery Server**. When users log in at the device, the default bindery server appears on the login screen, and the user can edit it if necessary.

LDAP authentication

LDAP is a standard, extensible directory-access protocol. It is a common language that LDAP clients and servers use to communicate with each other. LDAP is a message-oriented protocol. The client constructs a message that contains a request and sends it to the server. The server processes the request and sends back the result in a series of LDAP messages. LDAP is also a connection-oriented protocol. The client opens a connection and performs any number of operations on the same connection.

For the LDAP server bind method, LDAP authentication uses either the Simple or the Simple over SSL method. See [Table 3-4 Authentication bind methods](#).

LDAP authentication

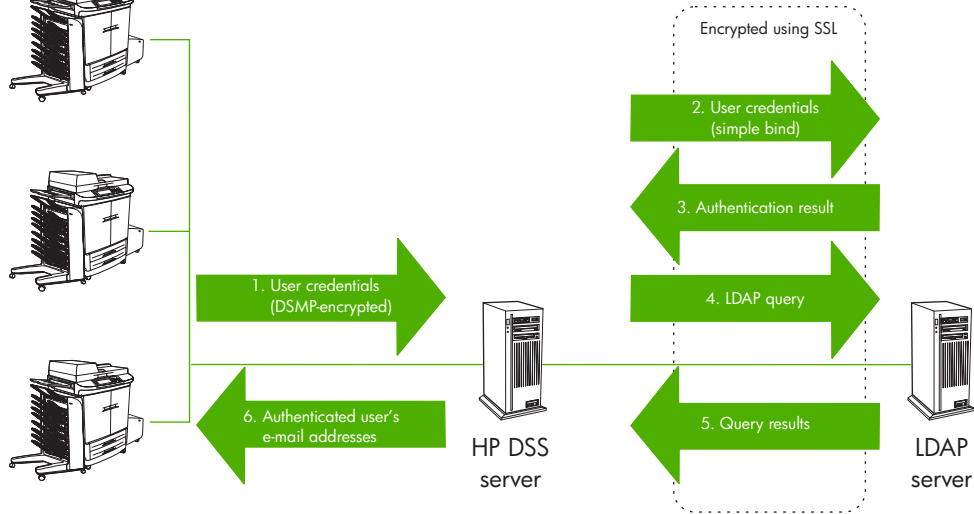


Figure 3-22 LDAP authentication

Configuring Authentication

Use the HP MFP DSS Configuration Utility **Authentication** tab to control how users are authenticated when using the digital-sending features.

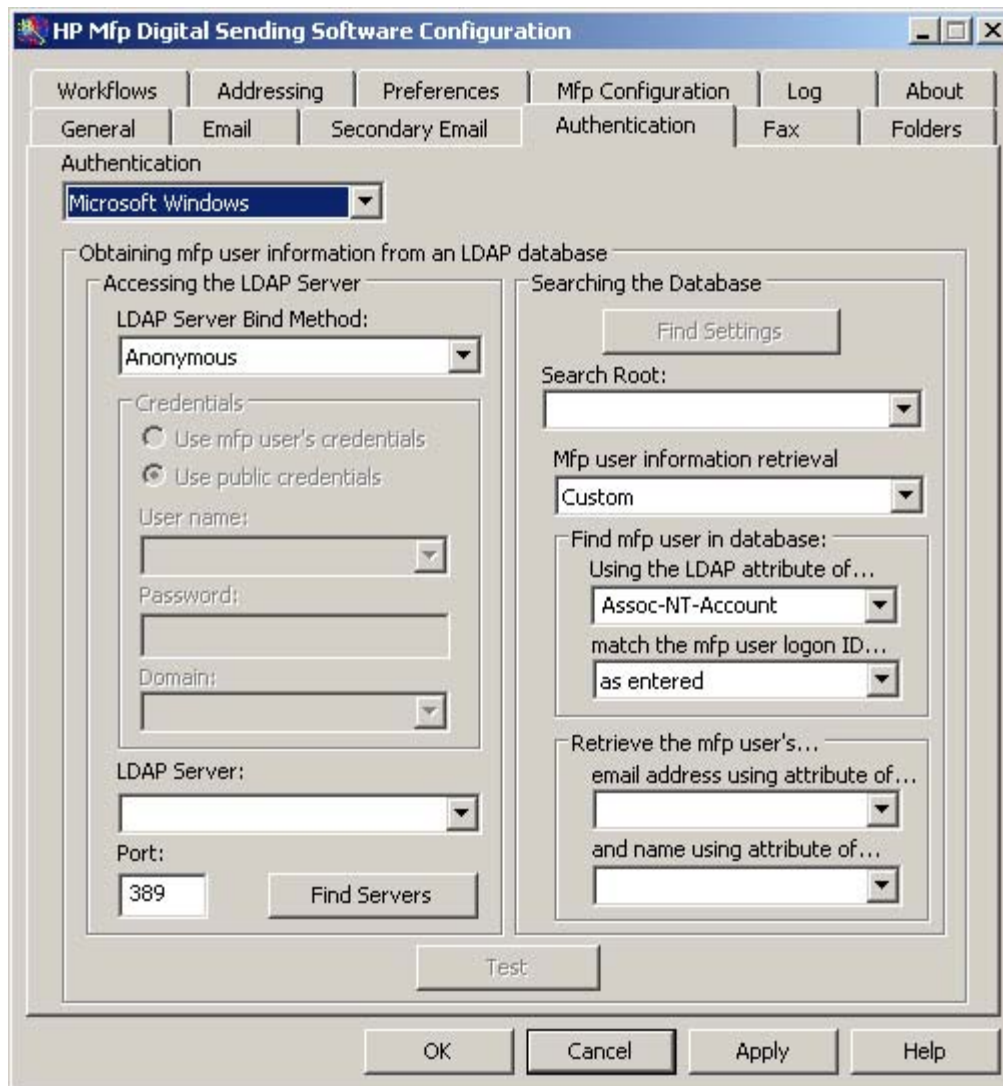


Figure 3-23 The **Authentication** tab

Authentication consists of two interdependent parts. First, the device verifies the user's credentials by using the selected authentication method. Then, the device attempts to find the user's e-mail address in the database of an LDAP server by using settings that are specific to the LDAP server. If either step fails, the user is denied access to the digital-sending features. These two steps utilize two distinct technologies (an authentication server and an LDAP server), except in the case of the LDAP server method, where both steps are accomplished by using the LDAP server. To enable authentication, start by selecting an option from the **Authentication** drop-down list. The following options are available.

- **None**
- **Microsoft Windows**
- **LDAP server**

- **Novell NDS** (if Novell client software is present)
- **Novell Bindery** (if Novell client software is present)

LDAP Configuration

After selecting the authentication method on the **Authentication** tab, the LDAP configuration settings appear. The device uses LDAP to retrieve the e-mail address for the authenticated user. After the user has provided valid credentials, the software uses this information to match an attribute in the LDAP database. After the match is made and the user is identified in the database, the user's e-mail address is retrieved by using another database attribute. The LDAP settings include the following options.

- Options for configuring HP DSS to gain access to the LDAP server
- Options for searching the database to obtain user e-mail addresses

To configure the LDAP server

1. Click **Find Servers**. The program searches the network for LDAP servers, and might also prompt you for your network username and password, depending on the network configuration. Next, the **Select LDAP Server** dialog box appears, containing a list of LDAP servers on the network.



NOTE The **Find Servers** option for finding LDAP servers does not work in all environments. If the Find Servers process does not work, the TCP/IP address or hostname of the Domain Controller or Global Catalog Server should be typed in the **LDAP Server** text box. If the Global Catalog Server is used, the default LDAP port in the **Port** text box must be changed to 3268.

2. Select the LDAP server to use. The information about the selected server appears.
3. Click **OK** to accept the selected server. The server information is filled in on the **Authentication** tab.
4. Click **Find Settings**. The server settings appear in a dialog box. Click **Yes** to accept the settings.
5. Click **Test** on the **Authentication** tab to test the settings. In the **Test User Authentication** dialog box, type in the network logon credentials of a user in order to test whether the user can be authenticated and whether LDAP can successfully retrieve an e-mail address.

Troubleshooting authentication

If **Find Settings** does not return any information, or if a user-credential error occurs during **Find Settings** or **Test**, one of the following three criteria for a successful LDAP query probably has not been met:

- HP DSS must be configured with the correct search root. The search root is a string that represents the location in the Active Directory database where the search begins. This is sometimes called the “search base.” The “base DN” (distinguished name) is the search root that describes the root of the Active Directory database. The base DN can be used as the search root when the LDAP client is configured to search the entire directory.
- The account used in HP DSS must have read access to the data in Active Directory. The client account that is used to configure the LDAP lookup for authentication and addressing must have read access in the LDAP directory container that is indicated by the search root. In addition, if information about users and recipients is located in any part of the subtree indicated by the search root, the client account that is used must also have access to the subtree.
- HP DSS must be configured to search the correct LDAP attributes. The LDAP client must be configured to search an existing LDAP attribute for information. LDAP attribute names vary somewhat between implementations.

Determining the LDAP server hostname or TCP/IP address



NOTE This method applies to the Windows environment only.

All domain controllers in a given domain contain a copy of the Active Directory database. Typically, all domain controllers run the LDAP service and are listening for LDAP queries on port 389. In some multi-domain environments, however, HP DSS should use the domain’s Global Catalog Server. The Global Catalog Server contains information about other domains in the domain forest and listens for LDAP queries on port 3268.

To determine which domain controller a specific Windows 2000 or XP client used to log onto the domain, look at the system variable “LOGONSERVER” by typing the following command at the command prompt:

```
C:\>echo %LOGONSERVER%
```



NOTE All of the commands that are listed in this section should be performed from the server or workstation on which HP DSS is installed.

The LOGONSERVER environment variable contains the hostname of the domain controller. To obtain the TCP/IP address for any hostname, use the “nslookup” command. For example, to find the TCP/IP address for a server that has the hostname DC1, type the following command at the command prompt:

```
C:\>nslookup DC1
```

In some cases, nslookup might not work, but the “ping” command also returns the TCP/IP address for a specific hostname.

One way to determine whether or not a specific domain controller is listening for LDAP queries is to telnet to the TCP/IP address of the domain controller and specify either port 389 or port 3268. To do this, type the following command at the command prompt: “telnet <TCP/IP address of the domain controller> <Port (389 or 3268)>”. For example:

```
C:\ telnet 15.63.55.144 389
```

If the Telnet program does not respond with the message “Could not open connection to the host,” the LDAP protocol is probably running on this specific port.

Determining the search root

The search root is the distinguished name (DN) of the entry in the LDAP directory where the search is to begin. A DN is made up of 'attribute=value' pairs separated by commas.

In Windows 2000 Active Directory Services, the search root normally takes the form: `CN=Users, DC=domain_name, DC=domain_suffix`. To limit the address search even more, for example, to a single organizational unit (OU), add components to the search root. For example, to search for users in the “accounting” OU, add “OU=accounting” to the search root (`OU=accounting, CN=Users, DC=domain_name, DC=domain_suffix`). By using these methods to configure the search root that is used in authentication, access to digital-sending features can be limited to a subset of users in an organization. Several methods can be used to determine the search root. These methods are described in the following sections.



NOTE On some LDAP servers, the search root can remain blank. In this case, the root node is assumed to be the starting place.

To determine the search root using the Microsoft LDAP Administration tool (LDP.EXE)

The Microsoft LDAP Administration tool is installed by installing Support Tools, which is included on the Microsoft Windows 2000 or Windows XP installation CDs (setup.exe in the \support\tools directory).

1. Run LDP.EXE (Click **Start**, click **Run**, and then type **LDP.EXE**).
2. Click **Connection** and then click **Connect from the Menu**.
3. Type the fully qualified domain name of the domain controller in the **Connect** dialog box. If the domain controller is a Global Catalog Server, the port might need to be changed to 3268.
4. After the connection is established, the Active Directory information should appear. Look for the text after the **1> defaultNamingContext** label, which looks similar to this:
`DC=dstest, DC=com`. This string describes the root of the Active Directory and can be used as the search root when configuring HP DSS.



NOTE The user whose credentials are used in HP DSS to gain access to the LDAP data must have read access to the root of the Active Directory database and to all objects below the root. Otherwise, use a more restrictive search root for a container to which the user has read access (for example, `CN=users, DC=dstest, DC=com`).

To determine the search root using the Microsoft Management Console with ADSIEDIT.MSC

The ADSIEdit (Active Directory Service Interface Edit) Microsoft Management Console tool can be used to view the LDAP attribute names and attribute values for users that are contained in the directory.

1. Run ADSIEDIT.MSC (Click **Start**, click **Run**, and then type **ADSIEDIT.MSC**).
2. Browse the tree structure to find the container that contains user objects. In many environments, users are contained in the **Users** container. The search root in this case is typically `CN=USERS, DC=<Domain>, DC=<Domain Suffix>` (for example, `CN=USERS, DC=HP, DC=COM`).

Determining access rights

Several methods are available to determine whether or not the account used in the LDAP configuration has read access to data in the Active Directory. Two of them are described in the following sections.

To determine access rights using the Microsoft LDAP Administration tool (LDP.EXE)

1. Run LDP.EXE (Click **Start**, click **Run**, and then type **LDP.EXE**).
2. Create a new LDAP profile.
3. Click **Connection** and then click **Bind**. In the **Bind** dialog box, type the username and password that are used in HP DSS to gain access to the LDAP data in Active Directory.
4. If the message **user <username> bind successful** appears in the LDP message window, this user has access to the directory. This level of confirmation does not, however, guarantee that this user has read access to any part of the directory below the root.
5. Select **Browse** from the **LDP** menu, and then select **Search**.
6. Type the search root that is to be used in HP DSS in the **Base Dn** text box into the **Search** text box.
7. Type the following LDAP search filter into the **Filter** text box: `(&(objectclass=person)(cn=a*))` This filter will return information for any user whose name starts with 'a.'
8. Select **Subtree** as the scope.
9. Click **Run**. Information will be returned for every user (up to the size limit configured in Options) whose name starts with 'a.' If the message **Result <0> Null** appears in the LDP message window, either no users exist in the container that the search root specifies, or the user whose credentials were used in the **Bind** command does not have read access to the data in this container.

To determine access rights using Active Directory Users and Computers



NOTE This method is usually performed at the domain controller console.

1. Open Active Directory Users and Computers.
2. Expand the tree view and select the container indicated by the search root entered in the HP MFP DSS Configuration Utility.
3. Right-click the container and select **Properties**.
4. Click the **Security** tab.
5. Click **Advanced**.
6. Select the **Authenticated Users** or **Domain Users** object.
7. Click **View/Edit**.
8. Ensure that the **Read** attribute is selected.
9. In the **Apply onto** drop-down list, select **This object and all child objects**.

10. Click **Apply**.
11. Click **OK** to close the **Properties** dialog boxes.
12. Right-click the root of the directory and select **Refresh**.

Determining the correct LDAP attributes

Use the Microsoft LDAP Client or the Microsoft Management Console tool ADSIEDIT to determine which LDAP attributes are present for individual user objects in the Active Directory. The MMC tool ADSIEDIT is typically run at the domain controller console. The LDAP Client (LDP.EXE) can be run from any workstation on the network.

To determine LDAP attributes using LDP.EXE

1. Run LDP.EXE (Click **Start**, click **Run**, and then type **LDP.EXE**).
2. Create a new LDAP profile.
3. Click **Connection** and then click **Bind**. In the **Bind** dialog box, type the username and password used in HP DSS to gain access to the LDAP data in the Active Directory database.
4. If the message **user <username> bind successful** appears in the LDP message window, this user has access to the directory. This level of confirmation does not, however, guarantee that this user has read access to any part of the directory below the root.
5. Select **Browse** from the LDP menu and then select **Search**.
6. Type the search root that is used in the HP MFP DSS Configuration Utility in the **Base Dn** text box in the **Search** dialog box.
7. Type the following LDAP search filter in the **Filter** text box: (&(objectclass=person)(cn=a*)) This filter will return information for any user whose name starts with 'a.'
8. Select **Subtree** as the scope.
9. Click **Options**, and delete all of the text in the **Attributes** text box in the **Options** dialog box. During the query, all of the user LDAP attributes appear.
10. Click **Run**. The LDAP attribute names and values will be returned for all users whose name starts with 'a' (up to the size limit configured in Options). From these results, the user should be able to determine whether or not specific LDAP attributes are populated in the Active Directory database for specific users. For example, each user container in the directory should contain CN, objectSID, and mail attributes.



NOTE If the message **Result <0> Null** appears in the LDP message window, either no users exist in the container that the search root specifies, or the user whose credentials were used in the **Bind** command does not have read access to the data in this container.

To determine LDAP attributes using the Microsoft Management Console with ADSIEDIT.MSC

The ADSIEdit (Active Directory Service Interface Edit) Microsoft Management Console tool can be used to view the user LDAP attribute names and attribute values that are contained in the directory.

1. Run ADSIEDIT.MSC (Click **Start**, click **Run**, and then type **ADSIEDIT.MSC**).
2. Browse the tree structure to find the container that contains user objects. In many environments, users are contained in the **Users** container. The search root in this case is typically CN=USERS, DC=<Domain>,DC=<Domain Suffix> (for example, CN=USERS , DC=HP , DC=COM).
3. Right-click a specific user object and view the LDAP properties that are associated with this user. The possible view options are required attributes, optional attributes, and all attributes. Select all attributes and then find the attributes that HP DSS is configured to query. For example, for authentication, select Binary SID, CN, and Mail, and look to see whether or not each of these attributes is populated with data.

Other authentication configuration issues

Three other issues might arise during attempts to configure access to the LDAP database.

First name, last name out of order

The CN field in ADS typically takes the form “firstname lastname.” Because the LDAP query that the device performs always uses a “begins with” search, users must start to type the first name of the person whose e-mail address they need at the device control panel. Microsoft has published two support notes (Q250455 and Q277717) that describe how to change the full name field (LDAP property CN) from the “firstname lastname” format to the “lastname,firstname” format.

LDAP performance with dynamic LDAP addressing

Occasionally, when working with a very large directory, Active Directory might take more than 5 seconds to return the results of the query. Often, users will assume that addressing is not functioning correctly and type the entire SMTP address. In some cases, performance can be improved by changing the search root to search a smaller container in the LDAP directory. If the search root that is used by HP DSS points to the root of the tree (DC=DSTEST,DC=COM), the search might be restricted to a directory subtree. For example, if users are contained in organizational units that are based on geography, a more restrictive search root can be set to search only a specific OU (OU=NORTHEAST,OU=AMERICAS,CN=USERS,DC=DSTEST,DC=COM).

Only one name appears in the Address Book

If only one name appears in the device Address Book, the **Database is Alphabetized** option is probably selected in the **Advanced** dialog box of the **Addressing** tab under **Configure MFPs**. See [Advanced addressing settings](#). Because Active Directory returns data that is *not* alphabetized, this option should not be selected.

Using address books

An address book is available at each digital-sending device to speed up the process of selecting e-mail and fax destinations from the control panel. The e-mail addresses and fax numbers in the address book can be located on the LDAP server on the network or at a destination that has been previously specified at the control panel. (This function is not supported in older MFP models.)

Firmware inside the device initiates and resolves name queries directly with the LDAP server. The address book does not have to be synchronized with the LDAP server, either manually or on a schedule. To initiate a search at the control panel, the user types a partial name. On the device, the list of resulting names from the LDAP server appears. When a name is selected, the associated e-mail address or fax number is automatically entered.

Adding addresses

Addresses can be added to the device address book in three ways:

- The HP Address Book Manager can add addresses to the Guest, Global, Private, or Public Distribution List address books.
- The user can touch **Add** on the device control panel to add a specific address.
- If the Personal Address Book feature is enabled, the user can add addresses to their Outlook contact list and these addresses will automatically be made available at the device .

Clearing addresses

HP DSS uses address books to store e-mail addresses that a user types at the device. If user authentication is enabled on the device, addresses are stored in a user's individual HP DSS address book. Otherwise, the addresses are stored in a public HP DSS address book. HP DSS address books are available to every digital sender or MFP that the HP DSS server supports. If the addresses contained in these address books are no longer needed, they can be deleted by clicking **Clear** on the **Addressing** tab in the HP MFP DSS Configuration utility.

The effect of authentication on address book availability

Addresses that the user types at the device are saved differently depending on whether the user has been authenticated at the control panel.

- **Authenticated:** Addresses are saved to a “Private” address book, and e-mail addresses that are stored in Outlook contacts are available.
- **Not Authenticated:** Addresses are saved to a “Guest” address book. All non-authenticated users can see the contents of the “Guest” address book.

Personal address books

HP DSS can gain access to an authenticated user's personal e-mail addresses that are stored in their Outlook contacts folder. The device provides a list of personal e-mail addresses combined with addresses from public address books. To enable this feature, select the **Enable PABs** check box on the **Addressing** tab in the HP MFP DSS Configuration Utility.



NOTE The availability of personal address books has the following requirements: Windows authentication must be enabled on the device (Novell is not supported), and the HP DSS server must have a MAPI-compliant e-mail client installed.

Types of address books

On the HP LaserJet 4100mfp and the HP LaserJet 9000mfp, e-mail addresses that are typed directly at the control panel of a device that is not connected to HP DSS are stored in a local address book. When the device is added to HP DSS, the local address book is imported into a “Guest” address book that is stored on the HP DSS server. This address book combines all of the address books of the MFPs that have been added, making previously cached e-mail addresses available from any MFP.

On more recent models of MFPs and digital senders, e-mail addresses typed in at the control panel are not automatically saved. The user must touch **Add** to save an e-mail address.

The device control panel provides the user with a choice between two views of the address book: “All” and “Local.” Each view presents to the user a single, sorted list of e-mail addresses that has been merged from all of the address books that are currently active in that view. [Table 3-5 Available address books](#) shows which of the address books are merged in each view.

Table 3-5 Available address books

Dynamic LDAP Enabled	Authentication Enabled	View “All”	View “Local”
No	No	Guest, Global (Replicated LDAP/ ABM), Public Distribution List	Guest
No	Yes	Private, Personal, Personal Distribution List, Guest, Global (Replicated LDAP/ ABM), Public Distribution List	Private, Personal, Personal Distribution List, Guest
Yes	No	Guest, Dynamic LDAP	Guest
Yes	Yes	Private, Personal, Personal Distribution List, Guest, Dynamic LDAP	Private, Personal, Personal Distribution List, Guest

Private

The Private address book is unique to each authenticated user and provides the user a place to store (add and delete) e-mail addresses that are typed at the device control panel. The user can gain access to the Private address book from any digital sender or MFP that is configured to use authentication for send-to-e-mail.

Personal

The Personal address book is unique to each authenticated user and is a copy of the user’s Microsoft Exchange contacts database. The e-mail addresses from the user’s contact list are loaded into the Personal address book, and the contact lists are loaded into the Personal distribution lists. These addresses are loaded when the user authentication is complete.

Personal distribution list

Personal distribution lists are named lists of e-mail addresses that are obtained from the Microsoft Exchange Server as contact lists and maintained in the Personal address book.

Guest

The Guest address book provides unauthenticated users a place to store, add, and delete e-mail addresses that are typed at the device control panel. The user can gain access to the Guest address book from any digital sender or MFP that is configured to use HP DSS.

Global (Replicated LDAP/ABM)

The digital-sending device can be configured to import address book records from an LDAP server. The Global address book that is populated from LDAP is commonly referred to as Replicated LDAP. The HP Address Book Manager software provides functionality to populate the Global address book directly from user input or from files that are generated from other databases. See the [Using the Address Book Manager](#) section for more information.

Public distribution list

A Public distribution list is a named list of e-mail addresses that have been created in or imported by using the HP Address Book Manager and that are maintained in the Global address book. See the [Using the Address Book Manager](#) section for more information.

Using the Address Book Manager

The main purpose of the Address Book Manager (ABM) is to give an administrator a way to create and change the e-mail address books that are used by HP DSS. You must be an administrator to use the Address Book Manager.



NOTE The HP Address Book Manager must be installed separately. To install it, insert the HP DSS program CD, browse to the ABM folder, and run SETUP.EXE.

Specifically, an administrator can use the Address Book Manager to accomplish the following tasks:

- View, add, change, and delete information in the public address books
- View, add, change, and delete information in authenticated users' private address books

To open the Address Book Manager

1. From a computer, click **Start**, and then point to **Programs**. Point to **Hewlett- Packard**, and then click **HP Address Book Manager**. The **Address Book Manager** window appears.
2. In the Digital Sender name text box, type the DNS name or TCP/IP address for the HP DSS server, or select an existing DNS name or TCP/IP address from the drop-down list.
3. In the **User name** text box, type ADMINISTRATOR.
4. In the **User password** text box, type the password (if one is required), and then click **OK**. If all of the information is valid, the ABM main window appears.

See the online Help in the ABM **Help** menu for more information about using the ABM application.

Importing addresses into the ABM

E-mail addresses can be imported into the ABM so that they can be made available to devices served by HP DSS. Four types of e-mail address lists can be imported into the HP Address Book Manager:

- .CSV
- .HPB
- .LDIF
- Microsoft Exchange

See the online Help in the ABM **Help** menu for more information.

Configuring address books

Use the HP MFP DSS Configuration Utility **Addressing** tab to configure HP DSS to make centralized address books available to digital-sender users.

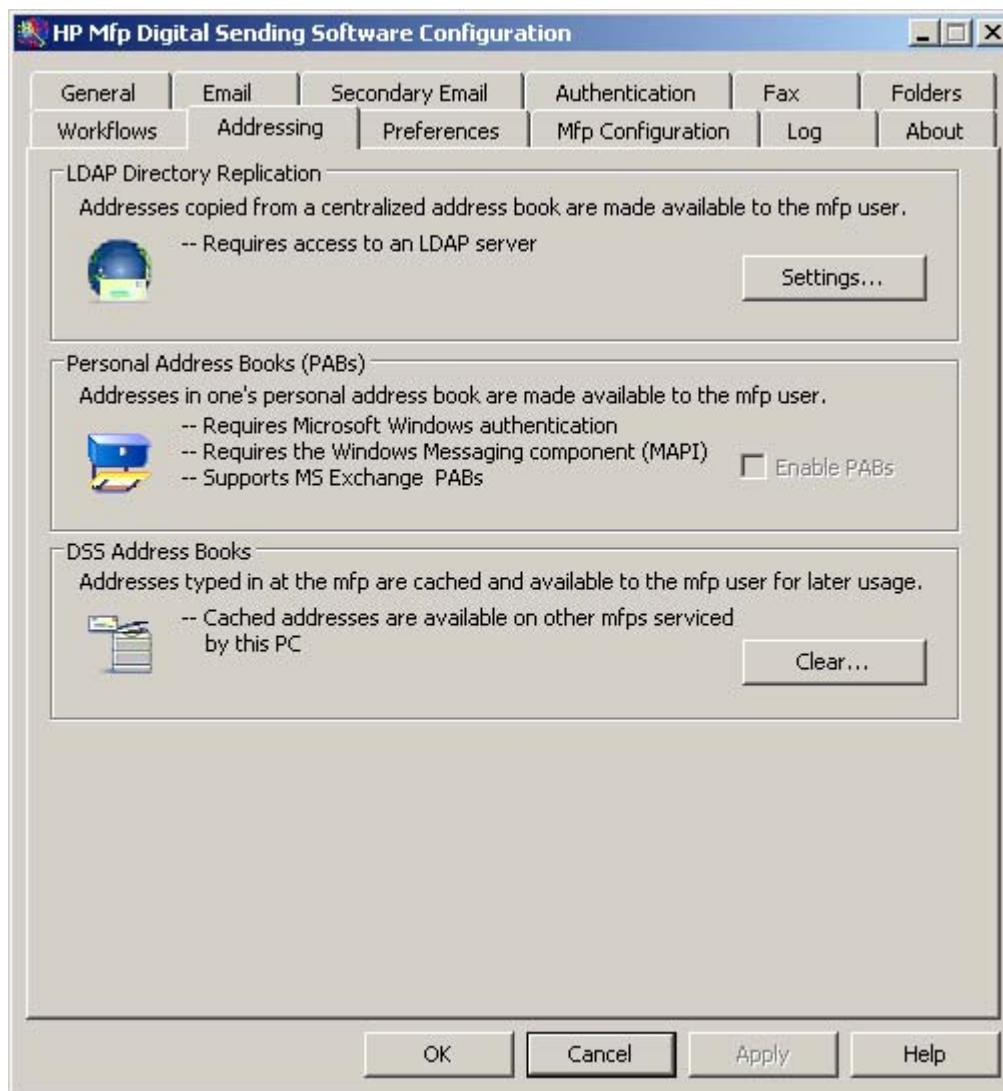


Figure 3-24 The **Addressing** tab

Configuring LDAP directory replication

The e-mail addresses and fax numbers in the address book come from several sources:

- The LDAP server on the network
- Destinations that users have previously specified at the control panel
- E-mail and fax address books that have been created by using the HP Address Book Manager

One of two methods can be used to synchronize the digital-sender address books with the LDAP server. [Table 3-6 Address book synchronization](#) contains descriptions of these methods.

Table 3-6 Address book synchronization

Method	Description	Effect at the control panel
Using a replicated LDAP address book	HP DSS takes a snapshot of the LDAP server database and populates the device address book with the addresses that it finds. The HP MFP DSS Configuration Utility can be used to either initiate the task manually or schedule it to run automatically at a certain time.	As the user types the initial characters in a name, the device attempts to complete the name from the names in the address book. The user types more characters until a match is found. When the user selects a name, the associated e-mail address is automatically selected.
Using an LDAP address book directly	Firmware in the device initiates and resolves name queries directly with the LDAP server. The administrator does not need to synchronize the address book with the LDAP server, either manually or according to a schedule.	The user types a partial name. The device shows the list of resulting names from the LDAP server. When the user selects a name, the associated e-mail address is automatically selected.



NOTE If the device is configured to use an LDAP address book directly, it cannot gain access to the replicated address book. If replication is used, only the display names and e-mail addresses are replicated.

To set up automatic replication of the LDAP address book

1. On the HP DSS server, open the HP MFP DSS Configuration Utility and click the **Addressing** tab.
2. Click **Settings...** The **Replicating LDAP Address Book** dialog box appears.

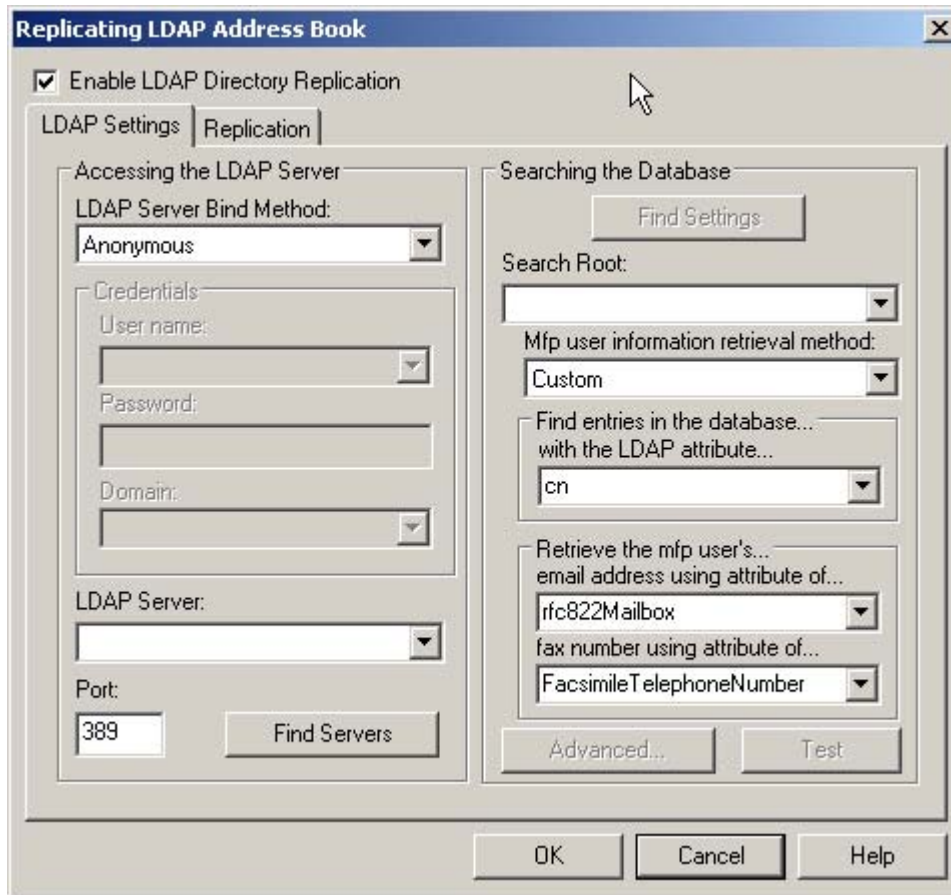


Figure 3-25 Replicating LDAP Address Book dialog box

3. Select the **Enable LDAP Directory Replication** check box.
4. On the **LDAP Settings** tab, set up the necessary parameters for logging into the LDAP server and searching the LDAP database. See [LDAP Configuration](#) for more information. After setting up the LDAP parameters, click **Advanced** to set up more advanced LDAP search options.
5. On the **Replication** tab, select the schedule for replicating the LDAP database. If you select **Daily**, **Weekly**, or **Monthly**, you can set a specific time and day of the week for the replication process. The replication should be scheduled to take place at off-peak times. The information that is replicated for each recipient in the directory (display name and e-mail address) is fairly small. An address book database of 100,000 users is approximately 5 MB in size.

Configuring personal address books

When the **Enable PABs** check box on the **Addressing** tab is selected, users can gain access to their personal Outlook contacts address books at the device. Personal address book support is only available if authentication is enabled and the authentication method is set to Microsoft Windows (see [Using authentication](#)). The Microsoft Messaging API (MAPI) is also required in order to interface with a user's personal address book. Make sure that the Windows Messaging Component is installed. If a

MAPI client software program is installed (such as Microsoft Outlook), this component should already be in place.

Configuring DSS address books

HP DSS uses address books to store e-mail addresses that a user types at the device. If user authentication is enabled on the device, addresses are stored in a user's private HP DSS address book. Otherwise, the addresses are stored in a public HP DSS address book. These HP DSS address books are available to every digital sender or MFP that HP DSS supports. If the addresses that are contained in these address books are no longer needed, they can be deleted by clicking **Clear** in the **DSS Address Books** section of the **Addressing** tab. This lists all existing address books, so that one or more of them can be selected.

Configuring individual devices

The HP MFP DSS Configuration Utility **MFP Configuration** tab specifies which devices are using the HP DSS service, and also provides an interface for customizing HP DSS features for specific devices.

To add a new device

1. On the HP DSS server, open the HP MFP DSS Configuration Utility and click the **MFP Configuration** tab.
2. Click **Add...** near the bottom of the tab. The **Add MFPs** dialog box appears.

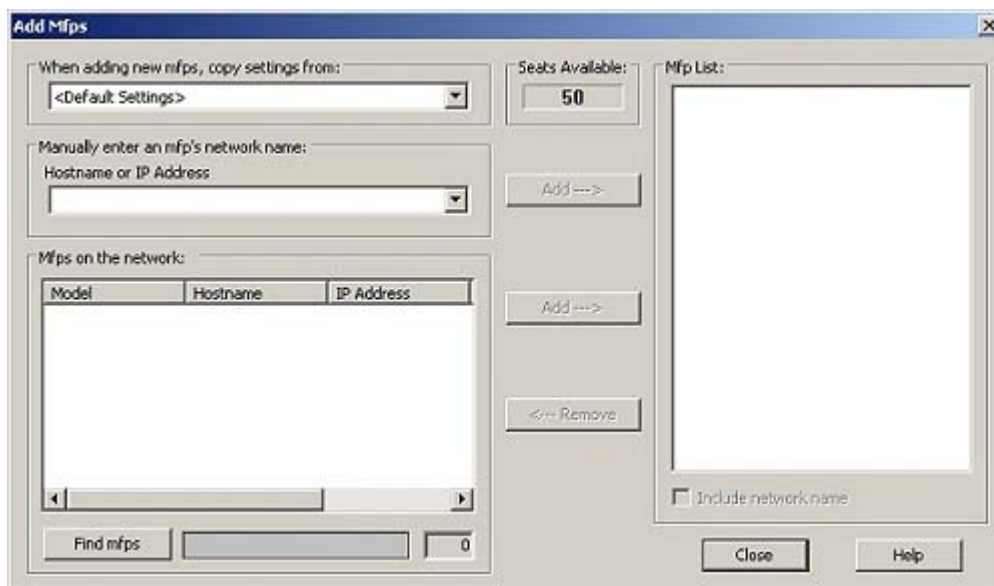


Figure 3-26 Add Mfps dialog box

3. Click **Find mfps** to display a list of the MFPs and digital senders on the network.
4. From the displayed list, select the device to be added.



NOTE If you know the hostname or TCP/IP address of the device, you can type it in the **Hostname or IP Address** text box under **Manually enter an mfp's network name** rather than using the **Find MFPs** button.

5. To have the new device use the same settings as a previously configured device, select the previously configured device from the **When adding new mfps copy settings from** drop-down list.
6. Click **Add-->** to add the device to the MFP List.



NOTE You can add only as many digital senders or MFPs as there are seats available in the HP DSS license. The number of seats available appears near the top of the **Add Mfps** dialog box .

7. Click **Close** to close the **Add Mfps** window.

The MFP list

The MFP list on the **MFP Configuration** tab shows the MFPs and digital senders that are currently being served by HP DSS. The icon to the left of the device name indicates the status of the device.

Table 3-7 MFP list icons

Icon	Description
Green	Communication with the device is established and the configuration settings are known.
Yellow	The device configuration settings are known, but communication between HP DSS and the device has been interrupted.
Red	HP DSS is unable to establish communication with the device and the settings are unknown.
Crossbones	The device was seized by another computer that is running the HP MFP DSS Configuration Utility. The TCP/IP address of the other computer is available in the MFP Status field, located under the Status heading on the MFP list. Scroll to the right on the MFP list to view this field if it is not visible. To reclaim ownership of a seized device, right-click the crossbones icon and click OK in the two dialog boxes that appear.

To remove a device from the MFP list, select it and click **Remove**. To restore a device that has been removed, right-click anywhere in the MFP list and select **Restore Deleted mfps** from the pop-up menu. This restores all deleted devices.

Configuring a device

After adding a new device (or group of devices), use the following procedure to configure which digital-sending features it uses.

This procedure is a brief overview of the process of configuring individual digital-sending devices. For more detailed instructions, see the following sections beginning with [Send to Email tab](#).

1. On the HP DSS server, open the HP MFP DSS Configuration Utility and select a device from the list on the **MFP Configuration** tab.



NOTE To select and configure multiple devices at the same time, press the **Shift** or **Ctrl** key and then click on the device names in the **MFP List:** dialog box.

2. Click **Configure MFP...** The dialog box that appears looks similar to the main Configuration program interface. Use this interface to customize the specific digital-send settings for this device.



NOTE Use this interface to enable the digital sending features for the individual devices. Even if a feature is enabled on the HP DSS configuration tabs, it is not available on the device until it has been enabled in the Configure MFPs interface.

3. On the **Authentication** tab, select the **Enable Authentication** check box to enable authentication for the selected device. Select the check boxes next to the features that are being enabled. This requires the user to log in before using that feature. Select the network domain from the **Default Domain** drop-down box.
4. On the **Send to Email** tab, select the **Enable Send to Email** check box, and select **via the Digital Sender service** in the **Send Emails** drop-down list.
5. If users need to be able to add their own e-mail message when sending e-mail, click **Advanced** and select the **Editable by user** check box.
6. On the **Addressing** tab, select the **Allow MFP to directly access an LDAP Address Book** check box if HP DSS should retrieve e-mail addresses directly from an LDAP server. Then select the previously-configured LDAP server in the LDAP Server drop-down list.
7. On the **Send to Email (2)** tab, select the **Enable Send to Secondary Email** check box to enable the secondary e-mail feature. Select the display name for the secondary e-mail service from the **Home Screen Display Name** drop-down list.
8. On the **Send to Fax** tab, select the **Enable Send to Fax** check box to enable the fax feature. Make sure that **via the Digital Sending service** is selected in the **Send Faxes** drop-down list.
9. On the **Send to Folder** tab, select the **Enable Send to Folder** check box to enable this feature.
10. On the **Send to Workflows** tab, select the **Enable Send to Workflows** check box to enable workflows. In the **Workflow Group** drop-down box, select the group that contains the workflow menu and form that should be used for this device.
11. Click **OK** to save all of the changes.
12. Click **Apply** to update the MFP Configuration settings.



NOTE The settings are not propagated to the device until **Apply** is selected.



Hint Configuration settings can be copied from one device to another device. In the **MFP List**: dialog box click the name of the device that is using the settings that are to be copied. Click **Copy Settings**. Click the name of the device where the settings are to be copied. Click **Paste Settings**.

The configuration settings can also be copied by using the **When adding new MFPs, copy setting from:** option in the **Add MFPs** dialog box.

See the following sections for more detailed descriptions of some of the MFP configuration tabs.

Send to Email tab

The **Send to Email** tab is shown in the following illustration. Use it to configure e-mail settings for individual digital sending devices.

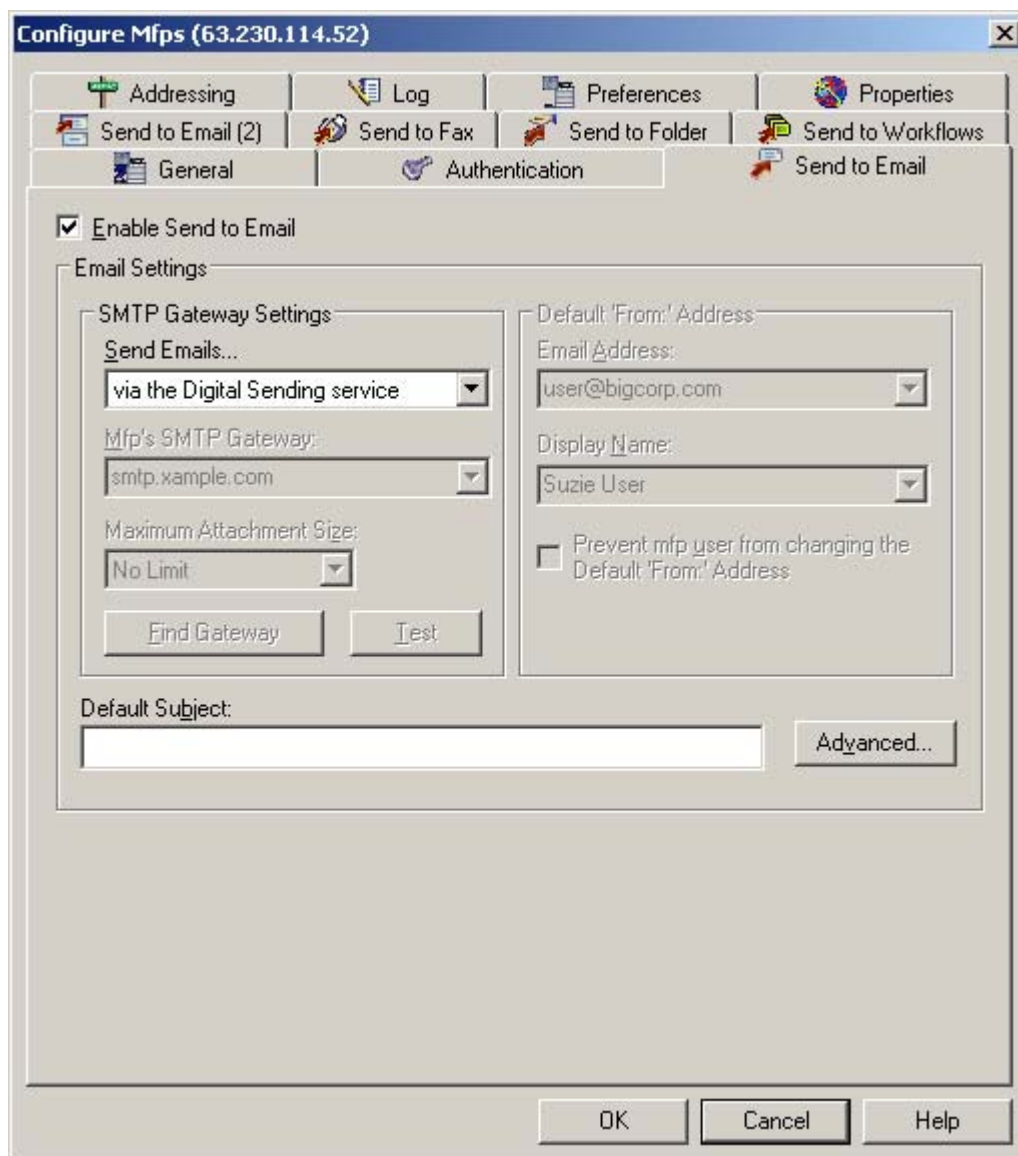


Figure 3-27 Send to Email tab in the Configure MFPs window

To enable send to e-mail by using HP DSS

1. On the HP DSS server, open the HP MFP DSS Configuration Utility and select a device from the list on the **MFP Configuration** tab.
2. Click **Configure MFP...**, and then select the **Send to Email** tab.
3. Select the **Enable Send to Email** check box to enable digital sending by using e-mail.
4. Select **via the Digital Sending service** from the **Send Emails** drop-down menu.
5. If authentication has *not* been enabled, complete the **Email Address** in the **Default 'From' Address** group box. If the device user does not provide a **From** e-mail address, this is the return address that will be used. To prohibit users from changing the return e-mail address, select the **Prevent mfp user from changing the Default 'From:' Address** check box. This prevents a user from impersonating someone else.



NOTE If authentication is enabled, the **Default 'From' Address** group box is disabled. The e-mail address of the authenticated user is used for the **From** e-mail address.

6. Type the **Display Name** (optional). This name appears in the **From:** text box when the device user first initiates a send-to-e-mail operation. This text box can be used to provide instructions to the device user (with messages such as "Please type your e-mail address here").



NOTE If the display name is not provided, the default sender is the e-mail address that appears in the **From:** text box.

7. Type a default e-mail subject into the **Default Subject** text box, if one is needed. This is used if the device user does not type in their own e-mail subject.
8. Click **Advanced** to set up some additional e-mail settings. See [Advanced e-mail settings](#).

To enable send to e-mail directly from the MFP

1. On the **Send to Email** tab, select the **Enable Send to Email** check box.
2. Select **directly from the mfp** from the **Send Emails** drop-down menu.
3. In the **MFP's SMTP Gateway** text box, type the SMTP server TCP/IP address or hostname. If you do not know the SMTP address, click **Find Gateway** to find it, and then click **Test** to verify that it is a valid SMTP server.



NOTE Some MFP models only recognize TCP/IP addresses. In these cases, the hostname is converted to the equivalent TCP/IP address.

4. Use the **Maximum Attachment Size** drop-down list to control the size of the attachments that the e-mail server can accept. If an attachment exceeds the maximum size, it will be split between two or more e-mails.
5. If authentication has *not* been enabled, complete the **Email Address** in the **Default 'From' Address** group box. If the MFP user does not provide a **From** e-mail address, this is the return address that will be used. To prohibit users from changing the return e-mail address, select the **Prevent mfp user from changing the Default 'From:' Address** check box. This prevents a user from impersonating someone else.



NOTE If authentication is enabled, the **Default 'From' Address** group box is disabled. The e-mail address of the authenticated user is used for the **From** e-mail address.

6. Type the **Display Name** (optional). This name appears in the **From:** text box when the MFP user first initiates a send-to-e-mail operation. This text box can be used to provide instructions to the MFP user (with messages such as "Please type your e-mail address here").



NOTE If the display name is not provided, the default sender is the e-mail address that appears in the **From:** text box.

7. Type a default e-mail subject into the **Default Subject** text box. The default subject is used if the MFP user does not provide an e-mail subject.
8. Click **Advanced** to set up some additional e-mail settings. See [Advanced e-mail settings](#).

Advanced e-mail settings

To use the advanced e-mail settings, click **Advanced...** on the **Send to e-mail** tab. The advanced settings specify default e-mail message contents and default e-mail attachment settings.



Figure 3-28 Advanced E-mail Settings dialog box

The **Message Text** appears in the body of all e-mail messages that are sent from the device. Select one of the following options:

- **Use the Built-in Message:** The built-in default message is shown in the **Message** box in the screen shot above. This message appears in one of the supported languages.
- **Use a Custom Message:** In the **Message** text box, type the message text for the e-mail message. The limit is 1,024 characters.



NOTE Select the **Editable by user** check box to allow the user to edit the e-mail message.

The device uses the **Attachment Settings** as the initial settings for each e-mail message:

- In the **Default File Format** drop-down list, select the file format to be used for e-mail attachments.
- In the **Default Color Preference** drop-down list, select whether attachments are to be sent in black and white or in color (color attachments are much larger in size).
- In the **Default Resolution** drop-down list, select the resolution quality for the e-mail attachments. The higher the resolution quality, the larger the size of the attachment file.
- In the **Default File Size** drop-down list, select the amount of compression that is to be applied to the file. The options are **Small**, **Standard**, and **Large**.



NOTE The user can change the color and file-format settings at the device control panel.

Send to Fax tab

The **Send to Fax** tab shows the device fax settings.

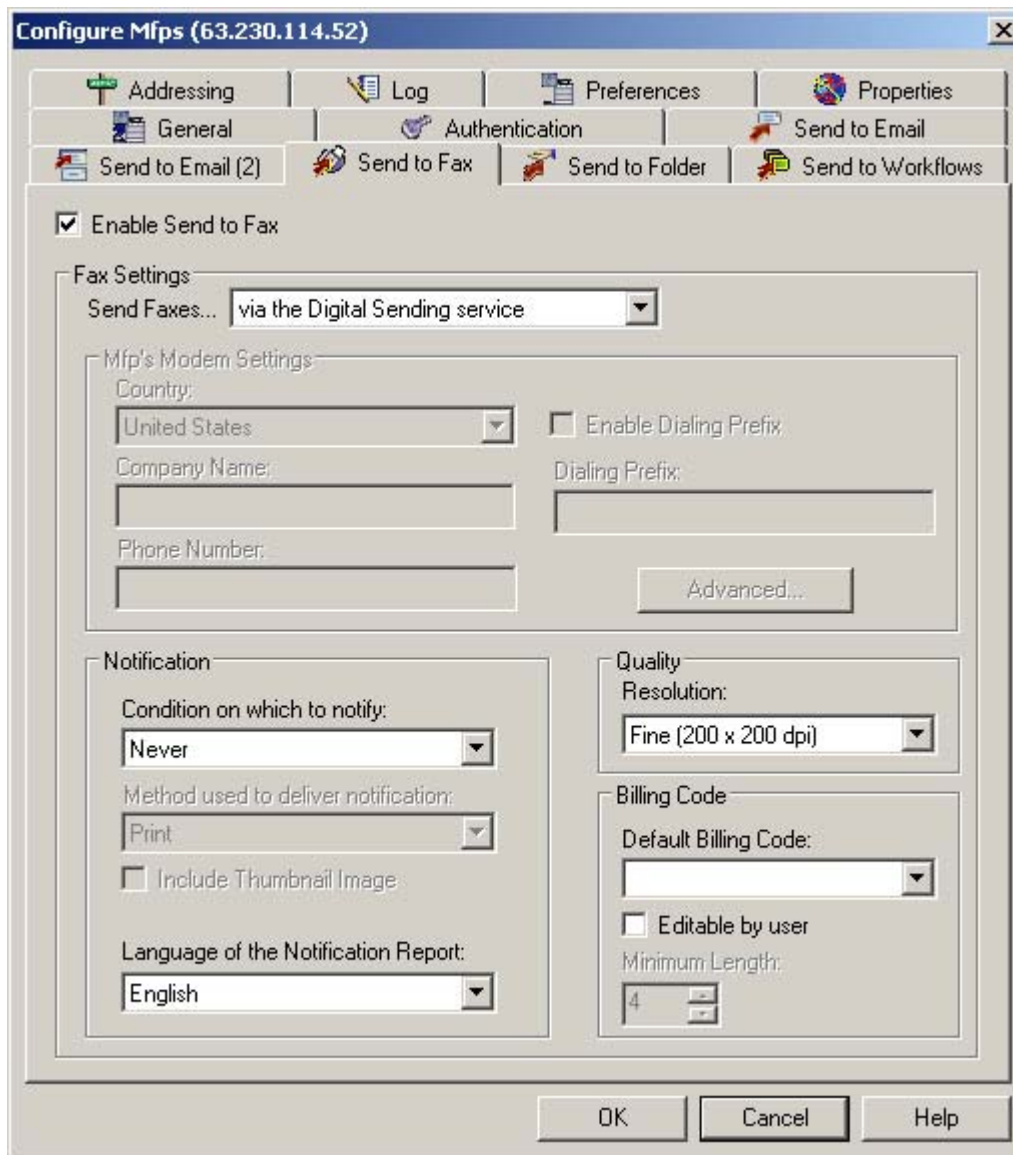


Figure 3-29 Send to Fax tab in the Configure MFPs window

Use the **Send to Fax** tab to configure the send-to-fax features for the selected device. Depending on the faxing method and settings, some of these options might not be available.

Configuring the HP DSS send-to-fax feature

1. On the HP DSS server, open the HP MFP DSS Configuration Utility and select a device from the list on the **MFP Configuration** tab.
2. Click **Configure MFP...**, and then select the **Send to Fax** tab.
3. Select the **Enable Send to Fax** check box to enable the send-to-fax feature.

4. Select the fax notification options in the **Notification** group box.
 - Make a selection from the **Condition on which to notify** drop-down menu. The options are **Never**, **Always**, or **for errors on any faxes**.
 - When notification is enabled, the **Method used to deliver notification** drop-down menu becomes available. If authentication is enabled, the two options are **Print** and **Email**. If authentication is not enabled, only the **Print** option is available, because HP DSS does not have access to the user's e-mail address.
 - Select the language for the notification from the **Language of the Notification Report** drop-down list.



NOTE Notification is not available for all fax delivery methods. See [LAN Fax notification](#).

5. Select the quality of the fax by selecting a resolution from the **Resolution** drop-down list.



NOTE The user cannot change the resolution setting from the device control panel.

6. Optionally, provide a **Billing Code** that can be used for accounting.

If the user needs to type or change the billing code, select the **Editable by user** check box. In addition, select the minimum number of characters to use for a billing code value from the **Minimum Length** spin control.

Configuring the MFP analog send-to-fax feature

If the MFP has an analog-fax modem, faxes can be sent by using this functionality rather than using HP DSS.

1. On the **Send to Fax** tab, select the **Enable Send to Fax** check box to enable the send-to-fax feature.
2. Select **via embedded fax** from the **Send Faxes** drop-down menu.
3. Type the required information in the **Mfp's Modem Settings** group box.

Table 3-8 MFP modem settings

Option	Action
Country	Type the country/region in which the device is located.
Company Name	Type the company name.
Phone Number	Type the phone number to which the MFP internal modem is connected.
Enable Dialing Prefix	If the phone system that is used for digital setting requires a prefix, select the Enable Dialing Prefix check box and then type the dialing prefix.
Advanced	Click Advanced to configure the advanced features of the MFP internal modem.

Addressing tab

The **Addressing** tab is used to set the address book settings for the selected device.

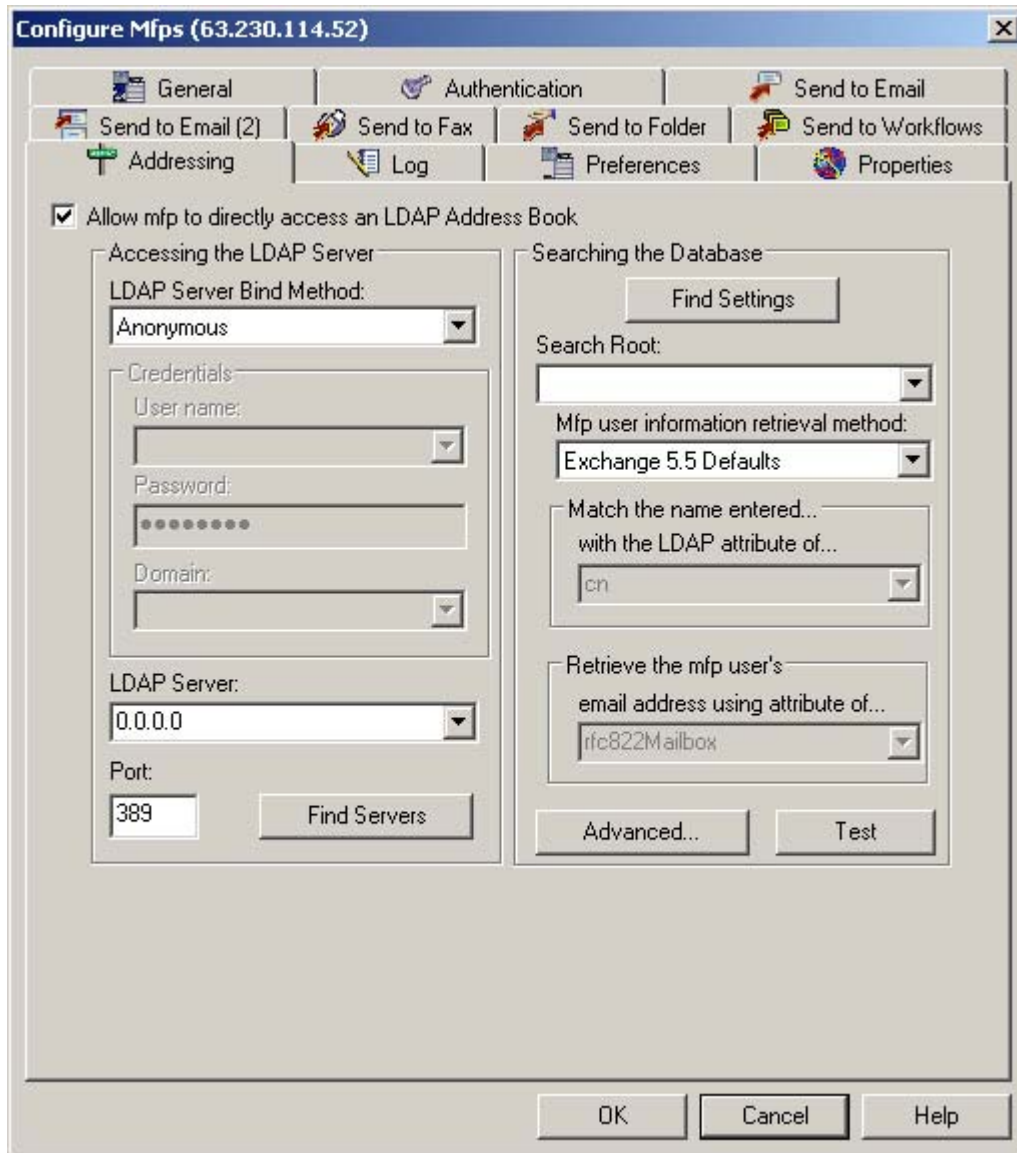


Figure 3-30 Addressing tab in the Configure MFPs window

1. On the HP DSS server, open the HP MFP DSS Configuration Utility and select a device from the list on the **MFP Configuration** tab.
2. Click **Configure MFP...**, and then select the **Addressing** tab.
3. Select the **Allow mfp to directly access an LDAP Address Book** check box to use an LDAP database for address queries.

4. The **Accessing the LDAP Server** group box includes controls for configuring network settings for the address book.
 - Click **Find Servers** to find any LDAP servers on the network by broadcasting a predetermined query to all servers on the local subnet.

If you know the network address of the LDAP server, you can type it into the **LDAP Server**: text box rather than using **Find Servers**. DNS names are not supported.
 - In the **LDAP Server Bind Method**: text box, the following settings are available:
 - **Anonymous**: No username or password is submitted to the LDAP server with the query.
 - **Simple**: The values from the **Username** and **Password** boxes are used to authenticate to the LDAP server. This is not NT LAN Manager (NTLM) authentication. An administrator sets up the username and password for this instance of an LDAP database.
5. Click **Find Settings** to determine LDAP database search root by using the following methods:
 - Connecting to the LDAP database at the configured port and querying for the "base dn" record.
 - Querying for address records by using various values for the search root, including the null search value and values that are discovered from the base dn record.
 - Querying for e-mail and fax records by using the standard LDAP attribute values.
6. If the automatic find settings process does not work, use the **Search Root** box to manually indicate where in the LDAP database hierarchy to begin searching for the requested address record.
7. If needed, use the **Mfp user information retrieval method** group box to find addresses according to certain attributes:
 - Select **Exchange 5.5 Defaults** to use a predefined set of LDAP attribute associations to locate address records.
 - Select **Active Directory Defaults**.
 - Select **Custom** to locate address records that have the following custom attributes:
 - **Match the name entered with the LDAP attribute of...:** Select **uid**, **cn**, **sn**, **givenName**, or type the name of the LDAP attribute containing the user's common display name.
 - **Retrieve the mfp user's email address using the attribute of...:** Select **rfc822Mailbox**, **mail**, **userPrincipalName**, or type the name of the LDAP attribute containing the user's e-mail address.

The username that the user types at the control panel is used to find matches for records in the LDAP database that are filed under the **uid**, **cn**, **sn**, or **givenName** attributes. When a match is found, the e-mail and fax addresses are completed by using the addresses that are stored in the attributes in the **Retrieve the mfp user's email address using the attribute of...** text box.



NOTE The HP LaserJet 4100mfp and HP LaserJet 9000mfp do not support fax numbers.

8. Click **Advanced** to set up some more advanced LDAP search options. See [Advanced addressing settings](#).
9. Click **Test** to query the LDAP database with the configured look-up options and obtain any records.



NOTE Version 4.3 of the HP DSS program adds a **Clear mfp Address Book** button on the **Addressing** tab. Use this button to delete all addresses from the address book on the MFP being configured.

Advanced addressing settings

The **Advanced** dialog box is used to set up some advanced settings for the address book options.

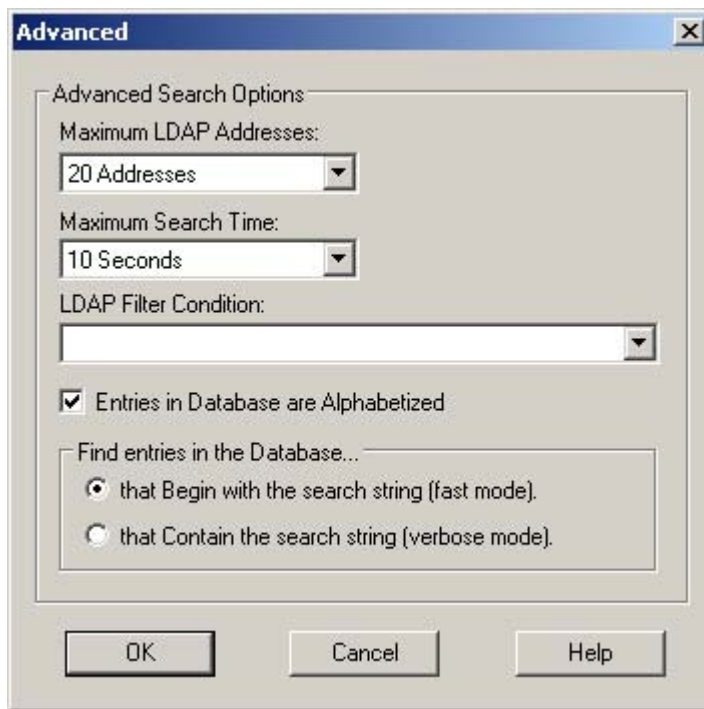


Figure 3-31 Advanced dialog box for addressing

1. Click **Advanced** on the **Addressing** tab to open the **Advanced** dialog box.
2. Set the following controls in the **Advanced Search Options** group box:
 - **Maximum LDAP Addresses:** This value determines how many records are returned in a single database query.
 - **Maximum Search Time:** This value determines the timeout interval for a database query.
 - **LDAP Filter Condition:** Additional search conditions must be in the form of a valid LDAP filter. For example, using `(!(ou=marketing))` excludes the marketing department during a search.



NOTE See RFC 2245 for more information about LDAP filters.

3. Select or clear the **Entries in the Database are Alphabetized** check box based on the local configuration. Because Active Directory does not return data in alphabetical order, clear this box if Active Directory is being used.
4. Select a search option in the **Find entries in the Database** group box.



NOTE This option is only offered in HP DSS software versions earlier than 4.3.

Log tab

The **Configure Mfps Log** tab displays the digital sending activities carried out by the specific selected device.

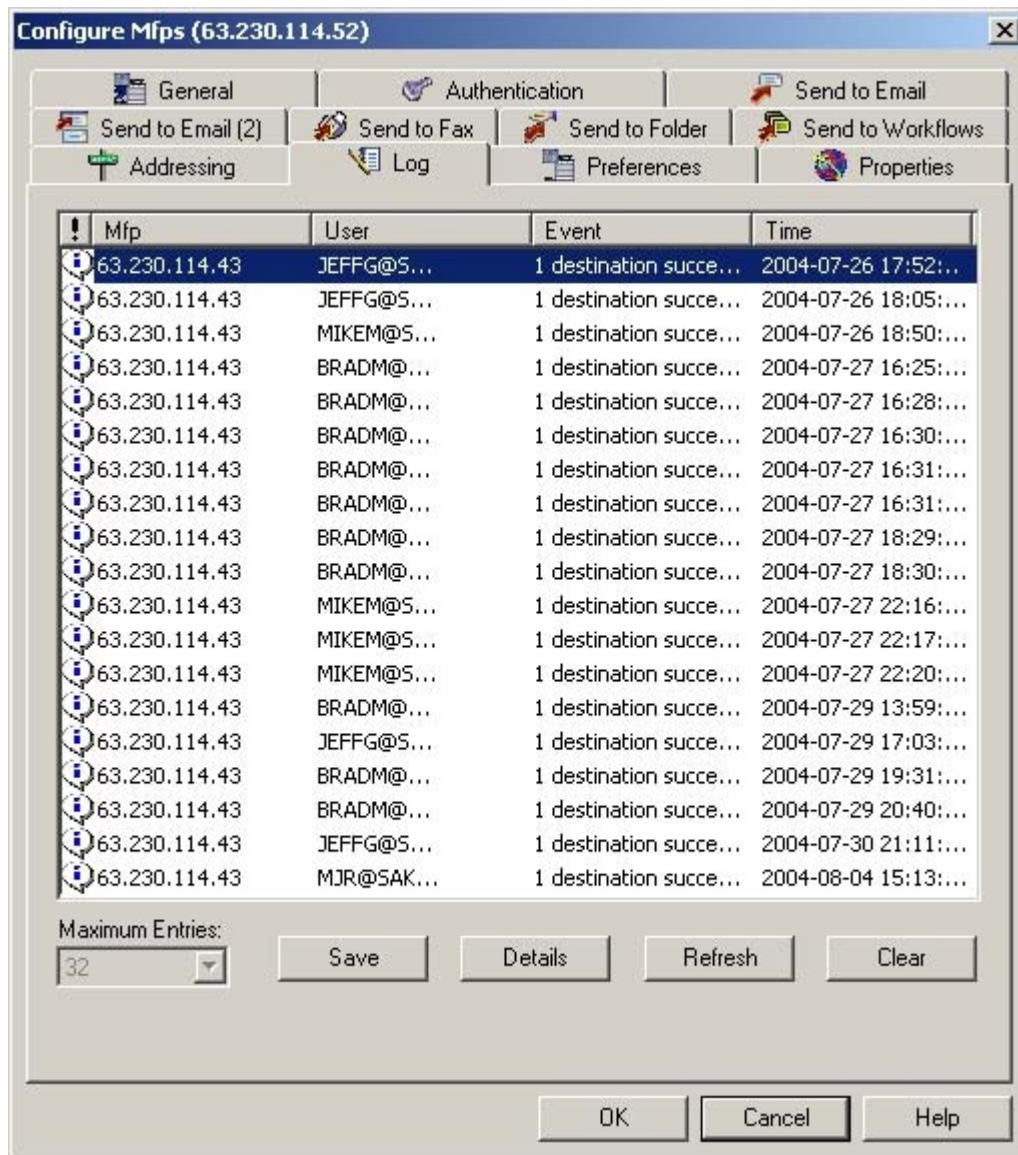


Figure 3-32 Log tab in the Configure MFPs window

The **Log** tab contains the following controls.

- **Maximum Entries:** Use this drop-down list to select the number of entries that appear in this window. The options are **0, 32, 256, 512, and 1024**.



NOTE Selecting a maximum entries option greater than 32 can cause a delay when starting the Configuration Utility.

- **Save:** Click this button to save the log file as a text file.
- **Details:** Click this button to view additional details about the selected log event.

- **Refresh:** Click this button to refresh log events.
- **Clear:** Click this button to clear all of the log entries.

Preferences tab

The **Preferences** tab is shown in the following illustration.

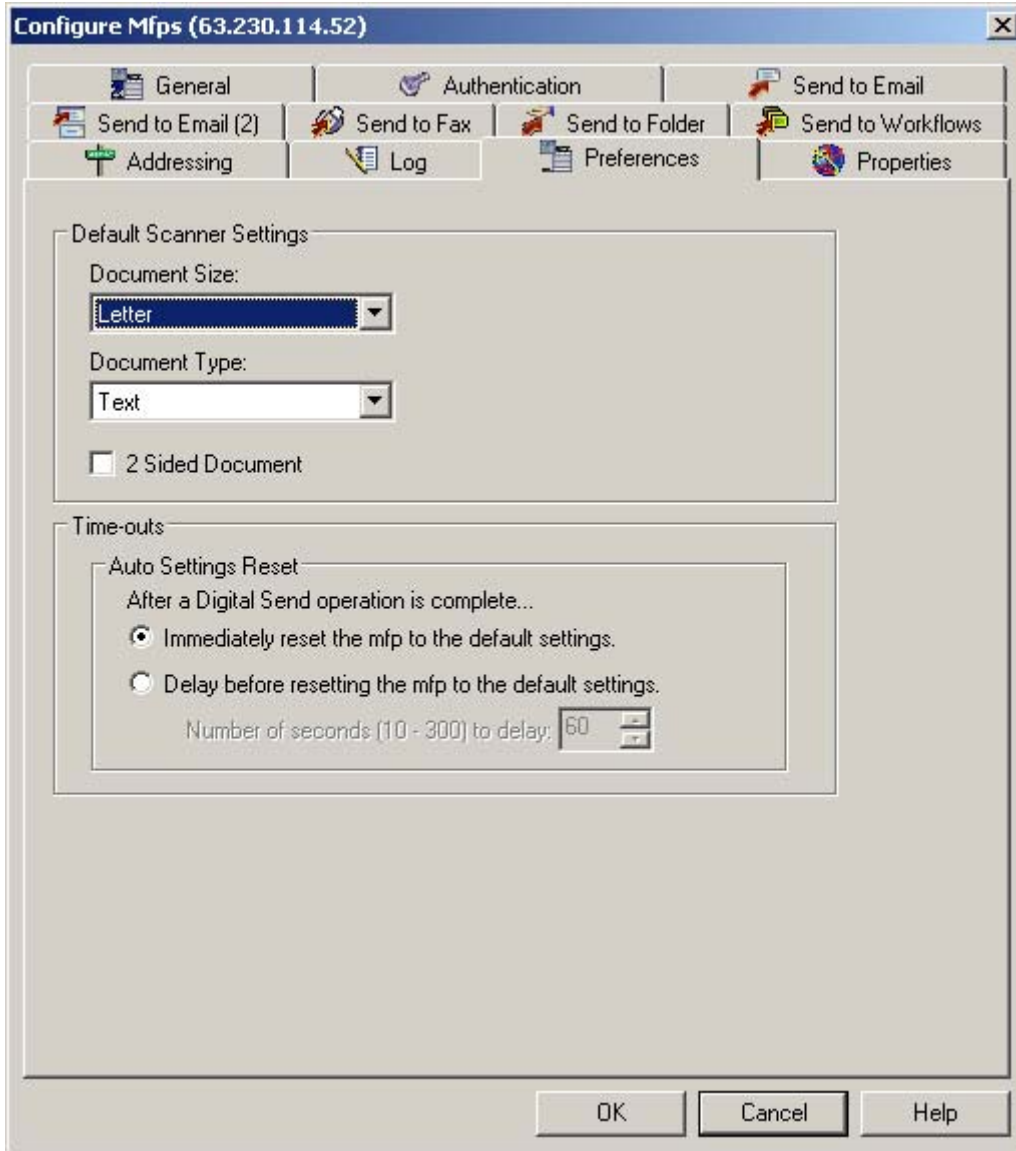


Figure 3-33 Preferences tab in the Configure MFPs window

On the **Preferences** tab, use **Default Scanner Settings** to set the default settings for document size, expected page content, and duplexing:

- **Document Size**
- **Document Type**
- **2 Sided Document** check box (select this check box for default duplex scanning)

Use the controls in the **Time-outs** group box to control the delay before the device returns to its default digital-send settings.



NOTE The **Time-outs** options are only available in HP DSS software versions previous to 4.3.

Properties tab

The **Properties** tab contains information about the device that was selected in the **MFP Configuration** tab of the HP MFP DSS Configuration Utility.

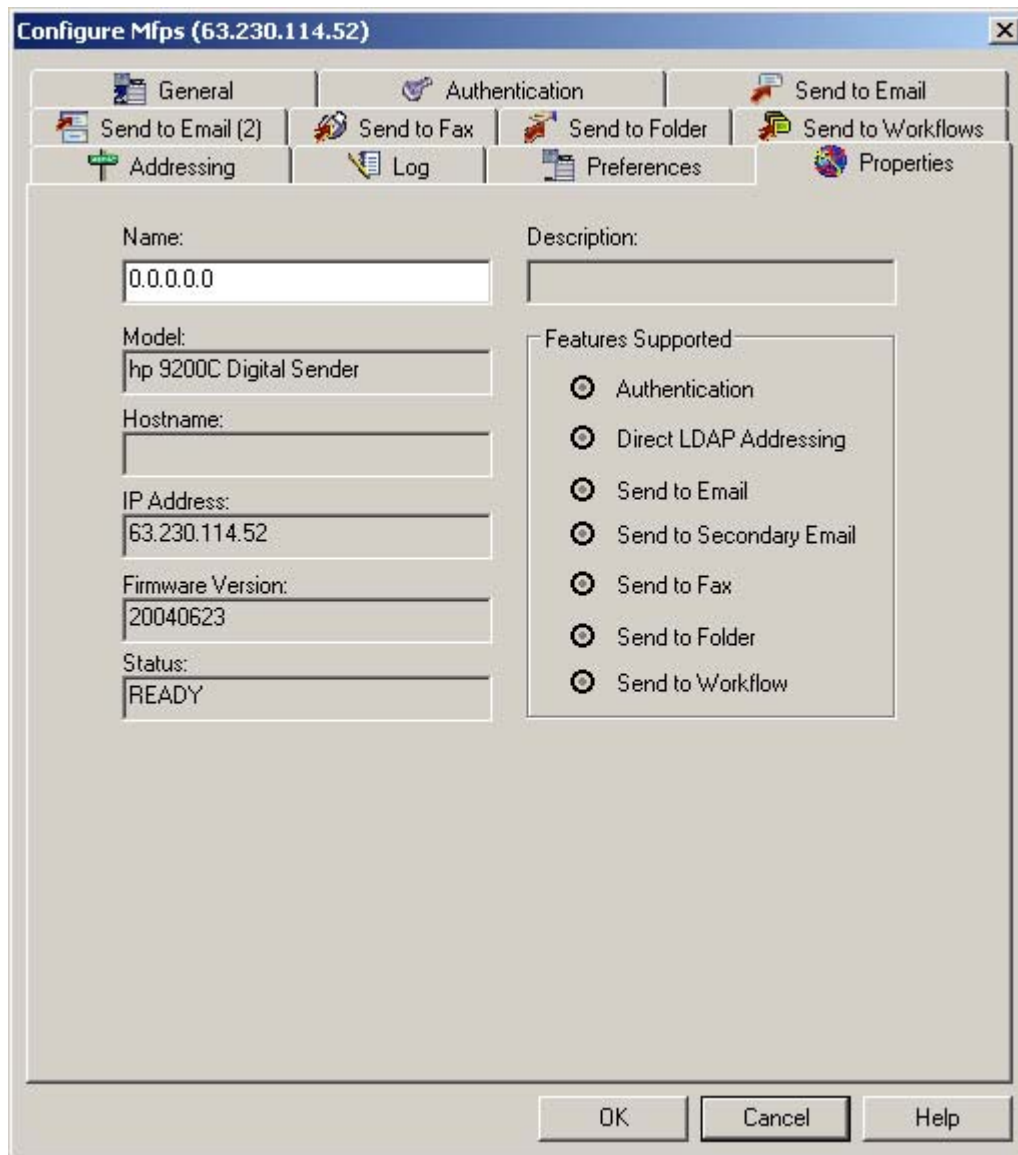


Figure 3-34 Properties tab in the **Configure Mfps** window

4 Troubleshooting tools

This chapter discusses some of the software tools that can be used to troubleshoot problems with the HP DSS program. The following topics are covered:

- [Using the Activity Log in the Configuration Utility](#)
- [Using the log for an individual device](#)
- [Understanding critical error notifications](#)

Using the Activity Log in the Configuration Utility

The Activity Log monitors digital-sending activities. Up to 1,024 entries are stored in each activity log. New events overwrite the oldest events. The log entries are saved in an .XML file on the HP DSS server. The HP MFP DSS Configuration Utility Help file lists an explanation of the messages.

Clearing the log is useful when troubleshooting problems. After the log is cleared, entries reflect only the current conditions. Clearing the log is also useful when major configuration changes are made.

The following events are recorded in the activity log:

- Each digital-sending job (all types of destinations)
- Shutdown and restart events
- Success or failure of an activity
- Deletion of any address-book contents
- Firmware downloads
- System errors

The following information is recorded in the activity log.

- Severity of event (information, warning, error)
- User
- Description of event
- Date and time
- Supplementary details (such as list of destinations, size and number of pages and file format)

To view the activity log

1. On the HP DSS server, start the HP MFP DSS Configuration Utility.
2. Click the **Log** tab.
3. Click **Refresh**.
4. Select a log item and click **Details** to view details of the log entry.
5. Optionally, click **Save** to save the current log file to a text file.

Using the log for an individual device

To view the event log for an individual MFP or digital sender, open the HP MFP DSS Configuration program and click the **MFP Configuration** tab. Select a device in the device list, and then click **Configure MFP**. Click the **Log** tab to see the activity log for the selected device.

The following messages might appear in the device event log. The log entries are saved in an .XML file on the device hard disk.

Table 4-1 Device log events

Event	Description	Action to take
Address Book Check	The address book database was checked for corruption.	None
Address Book Clear Event	An address book has been cleared by using the Address Book Manager (ABM).	None
Address Book Export	An address book was exported by using the ABM.	None
Address Book Import	An address book was imported by using the ABM.	None
Authentication Failure	A user was unable to authenticate at the device.	<ul style="list-style-type: none"> • The user should attempt to log in again. • If the login still fails, verify the settings on the Authentication tab of the HP MFP DSS Configuration Utility. Click Test to test the settings. • Turn the device off and then on again. • Restart the HP DSS service.
Communication Protocol Error Protocol Version Error	An error occurred while communicating with the device.	<ul style="list-style-type: none"> • Turn the device off and then on again. • Verify that the latest version of the HP DSS service is installed. (See www.hp.com/support/dss) <p>If the problem persists, contact an HP-authorized service representative.</p>
Database Access Error	A database corruption error has occurred.	<ul style="list-style-type: none"> • Check the Windows system log for disk errors. • Restart the HP DSS service. • Delete the database directory (the \DB directory within the HP DSS program directory) and restart the HP DSS service.

Table 4-1 Device log events (continued)

Event	Description	Action to take
E-mail Protocol Error	An e-mail message could not be sent because of network or server problems.	<ul style="list-style-type: none"> Verify that the e-mail server is running.
E-mail Communication Error		<ul style="list-style-type: none"> Test the e-mail settings on the Email tab of the HP MFP DSS Configuration Utility.
E-mail Server Unavailable Error		<ul style="list-style-type: none"> Verify that the correct From address is being used in the e-mail. Restart the HP DSS service. Check the SMTP server logs for errors. <p>If the problem persists, contact an HP-authorized service representative.</p>
Job Tracking Failure	An error occurred while retrying a previously uncompleted job because of a Job Recovery Failure.	<ul style="list-style-type: none"> Check to see if any disk errors have occurred. Verify that the disk that contains the HP DSS service is not full. Restart the HP DSS service. <p>If the problem persists, contact an HP-authorized service representative.</p>
Startup Failure	A digital-sending subsystem did not start successfully.	<ul style="list-style-type: none"> Restart the HP DSS service. Verify that the HP DSS server has enough memory and disk space. Check the Windows event log for disk errors. Check the security settings of the temporary files folder. (The temporary files folder is shown on the HP MFP DSS Configuration Utility Preferences tab.) Reinstall the HP DSS program. Verify that the latest version of the HP DSS service is installed. (See http://www.hp.com/support/dss) If the latest version is not installed, upgrade to the latest version. <p>If the problem persists, contact an HP-authorized service representative.</p>

Understanding critical error notifications

Select the **Notify administrator of critical error** check box on the **General** tab of the HP MFP DSS Configuration Utility to receive e-mail messages when critical errors occur. The subject line of these e-mail messages reads: **HP MFP Digital Sending Software – Critical Error Notification**. The e-mail message body reads as follows: “The HP MFP Digital Sending Software server [server TCP/IP] incurred a critical error [error message]. This error might require administrative action.”

[Table 4-2 Critical error messages](#) lists some of the critical-error messages that might be sent.

Table 4-2 Critical error messages

Error Message	Suggested Actions
Insufficient disk space to allow job	Check available disk space on the HP DSS server. In some high-usage environments where numerous devices are configured in HP DSS, several gigabytes of free disk space might be required during peak usage periods. An HP DSS server cannot support more than 250 MFPs or digital senders.
Firmware has not been upgraded on device	This message should be seen only when older MFPs are managed by HP DSS. Remove the device from the configuration and add it back again. Select Apply to re-initiate the firmware download.
A notification message was not printed on the [device TCP/IP] printer	Verify that HP DSS can communicate with the device that is indicated in the message.
Address Book checking terminated with a severe corruption indication	Call HP Support or an authorized service provider. The Address Book might need to be rebuilt.
The SMTP server didn't accept the e-mail message because it was too big	Reduce the e-mail size limit in HP DSS to a number less than the limit that is configured at the SMTP server.
A disk file was not downloaded to the [device IP] printer	Remove the device (indicated by the TCP/IP address) and add the device back again to HP DSS.

5 Installation and removal

This chapter provides system requirements and procedures for installing and removing the HP DSS on computers or servers that are running Windows operating systems.

The following topics are covered:

- [System requirements](#)
- [Uninstalling HP DSS](#)

System requirements

This section provides system requirements for the MFP products and the HP DSS server to run HP DSS and the HP MFP DSS Configuration Utility.

Requirements for installing HP DSS

The following are the requirements for installing and running HP DSS:

- A network server running Windows 2000 Professional, Server, or Advanced Server; Windows XP Professional; or Windows 2003 Standard or Enterprise Server, with Internet Explorer 4.0 or later. Administrator privileges are required to install the software on this computer.
- One or more digital sending devices that are available on a network through TCP/IP connections. All computers that are running the HP DSS and all digital-sending-enabled MFPs and digital senders should be configured to use static TCP/IP addresses. If dynamic host configuration protocol (DHCP) is used, the lease assignment must be permanent.
- A license key for HP DSS, which is a 20-digit code that is printed in a License-to-use document. See [Licensing](#) for more information about using the license.
- Access to at least one SMTP gateway server.

To enable send-to-fax capabilities, one of the following fax methods must be available:

- A third-party local area network (LAN) fax software and hardware product. Make sure that the LAN fax product is already installed and functional. Record where the LAN fax working folder (directory) is located and verify read/write access to the folder.
- A third-party Internet fax service provider (IFSP). Record the domain of the IFSP and the e-mail address of one registered user.
- A Windows 2000/XP fax service, with a fax modem installed on the HP DSS server.

Enabling user authentication requires access to a Microsoft Windows NT Domain, a Novell NetWare Directory Server (NDS) or Bindery Server, and an LDAP server database that contains end-user e-mail addresses. Microsoft Exchange 5.5, Microsoft Windows 2000 Active Directory, and Lotus Domino are support services that can function as LDAP servers.

Supported platforms

The HP DSS supports multiple network operating systems and client operating systems.

Network operating systems

HP DSS is directly connected to a TCP/IP network through a Windows 2000, Windows XP, or Windows 2003 server. It operates independently within the following network operating environments:

- Windows Server 2003, Windows XP Professional, and Windows 2000
- Fast Ethernet 100Base-TX, Ethernet 10Base-T, or 10Base-2 (BNC)



NOTE The HP Jetdirect printer server that comes installed in the MFP provides Ethernet connections.

Client operating systems (for the Address Book Manager only)

The following client operating systems are supported for the Address Book Manager (ABM):

- Windows Server 2003
- Windows XP Professional
- Windows NT 4 .0 or later (TCP/IP only)
- Windows 2000 (TCP/IP only)
- Windows 9x (TCP/IP only)

The ABM works correctly with the Microsoft TCP/IP protocol that is provided as part of these operating systems.



NOTE The ABM might not run correctly on some early versions of Windows 95. An updated Common Control Library is needed and can be added by installing Microsoft Internet Explorer 4.0 or later.

Novell NetWare support

To support Novell NetWare authentication and Novell digital-sending destinations, HP DSS requires both of the following components:

- Novell NetWare version 3.12, 3.2, 4.11, 4.2, 5, or 6 running on the Novell NetWare server
- Novell NetWare Client version 4.6 (or later) installed on the Windows computer that runs HP DSS

MFP firmware requirements

To support HP DSS features, the HP LaserJet 4100mfp and the HP LaserJet 9000mfp must be running firmware version 03.525.0 or later.

The firmware is on the HP DSS product CD-ROM in the \FIRMWARE directory. It is also available on the HP Web site. Follow these instructions to download a new firmware version.

1. Browse to the support section for the specific MFP at www.hp.com
2. Click **Download drivers & software**.
3. On the **Quick jump** list, click **Not applicable**.
4. Click **Download** for the operating system that is performing the MFP upgrade.

To upgrade the firmware, use the instructions that are included in the firmware Readme file.



NOTE The firmware in newer device models already supports HP DSS features.

Ports

The following ports are used by the HP DSS service and the MFP:

- HP DSS Service: 1687, 500-5002
- LDAP: 389
- DSMP: 1783
- SMTP: 25
- JetSend: 1782
- ABM: 406
- MFP broadcast: 161

HP DSS CD contents

Assuming that D: is the designation for the CD-ROM drive, the following folders and files are included on the HP DSS CD:

D:\ABM\...

D:\DOCUMENTATION\\...

D:\DOCUMENTATION\\i18n\...

D:\REMOTE CONFIGURATION UTILITY\

D:\SETUP.EXE

Upgrading from previous versions of HP DSS

Licenses that have been purchased for HP DSS 2.x or 3.x can be upgraded to HP DSS 4.x. The Secure Access and Communications license types found in earlier versions of HP DSS have been replaced with a single Workflow Process and Document Management license in HP DSS V4.x. Secure Access and Communications licenses are automatically converted to a Workflow Process and Document Management license when the 4.x software is installed.

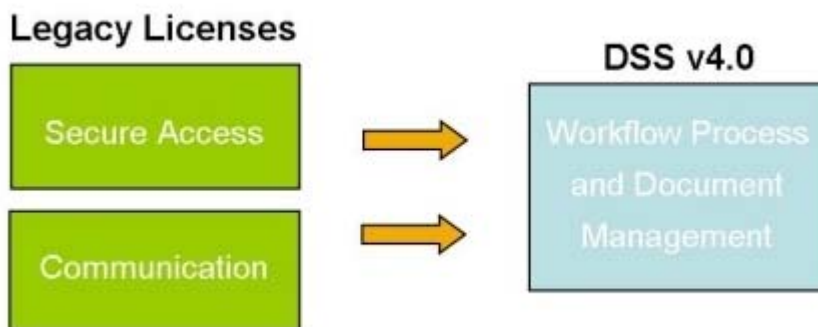


Figure 5-1 HP DSS license conversion



NOTE HP LaserJet 8000 series printers and mopier MFPs are not supported in HP DSS V4.x. However, because they are not removed from the HP DSS device list automatically during the upgrade, they must be removed manually.

NOTE The HP DSS features that are available depend on the model of the printers and MFPs installed. See [Functions available through HP DSS](#) for a list of features that are available for each model.

Uninstalling HP DSS

The Uninstall program removes HP DSS from the computer.

1. Click **Start**, click **Programs**, click **Hewlett Packard**, click **HP Digital Sending Software**, and then click **Uninstall**.
2. Follow the prompts to complete the uninstall process.

OR

1. Open the Windows **Control Panel**.
2. Select **Add or Remove Programs**.
3. Remove or uninstall HP DSS.



NOTE To run the Uninstall program, the user must have local administrator privileges.

6 Appendix

This appendix contains information about the following topics:

- [Image processing](#)
- [Supported third-party fax programs](#)

Image processing

Image-processing features for HP DSS include the following options:

- Different file formats depending on the intended use of the scanned image.
 - E-mail and send-to-folder: portable document format (PDF) or .PDF, joint photographic experts group (JPEG) or .JPEG, tagged image file format (TIFF) or .TIFF, and multipage tagged image file format (MTIFF) or .MTIFF
 - Fax: TIFF, MTIFF, printer control language 5 (PCL 5) (uncompressed), and PCL 5 (packbits)
- Optimization and gamma correction for optimized image processing
- Images and text in the smallest file size possible with user-controlled compression settings

Workflow image file settings

When sending a document to workflow, the user can choose the sending quality at the control panel. The most suitable quality can be selected for each type of job.

The following table outlines all of the image file setting combinations.

Table 6-1 Effects of the file settings

Custom Key settings		Job settings			Description		
File format	Sending quality	File type	Document type	Resolution: pixels per inch	File size ¹	Color	Bits/pixel compression
PDF	Black and white document	PDF	Text	300		Black and white	1 bpp (bit per pixel), G4 compressed
PDF ²	Color document	PDF	Mixed	150	Med	Color	24 bpp, JPEG compressed
PDF	Fine text	PDF	Text	600		Black and white	1 bpp, G4 compressed
PDF	Color, black and white document	PDF	Photo	150	Med	Color	24 bpp, JPEG compressed
PDF	Hi-res photo	PDF	Photo	600	Med	Color	24 bpp, JPEG compressed
MTIFF	Black and white document	MTIFF	Text	300		Black and white	1 bpp, G4 compressed
MTIFF	Color document	MTIFF	Mixed	150		Color	24 bpp, None
MTIFF	Fine text	MTIFF	Text	600		Black and white	1 bpp, G4 compressed
MTIFF	Color, black and white document	MTIFF	Photo	150		Color	24 bpp, None

Table 6-1 Effects of the file settings (continued)

Custom Key settings		Job settings			Description		
File format	Sending quality	File type	Document type	Resolution: pixels per inch	File size ¹	Color	Bits/pixel compression
MTIFF	Hi-res photo	MTIFF	Photo	150		Black and white	8 bpp, None
PCL5	Black and white document	PCL	Text	300		Black and white	1 bpp, RLE
PCL5	Color document	PCL	Mixed	300		Black and white	1 bpp, RLE
PCL5	Fine text	PCL	Text	600		Black and white	1 bpp, RLE
PCL5	Color, black and white document	PCL	Photo	300		Black and white	1 bpp, RLE
PCL5	Hi-res photo	PCL	Photo	600		Black and white	1 bpp, RLE
JPEG ³	Black and white document	JPEG	Mixed	300	Med	Black and white	8 bpp, JPEG
JPEG	Color document	JPEG	Mixed	300	Med	Color	24 bpp, JPEG
JPEG	Fine text	JPEG	Text	600	Med	Black and white	8 bpp, JPEG
JPEG	Color, black and white photo	JPEG	Photo	150	Med	Color	24 bpp, JPEG
JPEG	Hi-res photo	JPEG	Photo	600	Med	Color	24 bpp, JPEG

¹ File size is only applicable to formats that are JPEG compressed.

² On the 9100C Digital Sender, this format produced a bi-level PDF: 300 ppi, 1 bpp G4 text plane overlaid onto a 150 ppi, 24 bpp and JPEG image plane.

³ The JPEG file format was not supported on the 9100C Digital Sender.

E-mail file settings

The devices that are connected to HP DSS offer a choice of sending quality at the control panel. The user can select the most suitable quality for each type of job. The following table outlines the effect of the **Document Type** settings.

Table 6-2 Document type settings

Document type	Description
Text	<ul style="list-style-type: none"> • Best for black text on a white background • Can saturate color in photos • Loss of highlights and lowlights in photos • Best for optical character recognition (OCR)

Table 6-2 Document type settings (continued)

Document type	Description
Mixed	<ul style="list-style-type: none"> • Good for text • Good for photographs • Good for OCR
Photo	<ul style="list-style-type: none"> • Best for photographs • Accurate surge representation • Text might appear light

The following exceptions and notes relate to the send quality settings.

- When the .JPEG file format is selected, all image data is JPEG baseline.
- Color, mixed, and PDF selections are the most intensive in terms of the necessary computer computation.
- Photo and .PDF files generate JPEG data that is wrapped in the PDF.
- Some viewers do not support the .TIFF file format that HP DSS uses. The Windows Imaging software that is included in Microsoft Windows 9x, Windows NT, and Windows 2000 supports this format. Windows XP File and Fax Viewer and Adobe Photoshop® *do not* support this format.

Supported third-party fax programs

HP DSS is compatible with the following third-party fax-software programs:

- ACCPCC
- Anny Way Office Edition
- Biscom FAXCOM
- Capteris RightFAX
- Castelle FaxPress
- Cycos-mrs Unified Communication
- Esker Pulse/Fax
- Esker LanFax
- FACSys Fax Messaging Gateway
- Fenestrae Faxination
- GFI FAXmaker
- Gold-Fax
- Imecom Integral Fax
- INTERSCOPE FaxPlus/Open

- Interstar LightningFAX
- Object Fax
- Omtool
- RedRock FaxNow!
- RTEFax
- Tobit DvISE
- TOPCALL
- Zetafax

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