



7330 Mono Laser Printer System Administrator Guide



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1 Overview

This chapter includes:

- [Resources](#) on page 1
- [Status Monitor Alerts](#) on page 1-2
- [Online Diagnostics Technical Support](#) on page 1-2
- [Embedded Web Server](#) on page 1-4

You can obtain information regarding your printer and its capabilities from the following resources.

Resources

Information	Source
Installation Guide*	Packaged with printer
Quick Use Guide*	Packaged with printer
User Guide (PDF)*	Packaged with printer (<i>Software and Documentation CD</i>)
Video Tutorials	www.support.dell.com
Online Diagnostics	Access Online Diagnostics through the EWS or your printer driver. See Online Diagnostics Technical Support on page 2.
Supplies for your printer	www.dell.com/supplies
Dell Technical Support	http://www.support.dell.com
Information about menu selection or error messages on control panel	Control panel Help (?) button
Information pages	Control panel menu

* Also available on the Dell Support web site.

Status Monitor Alerts

Status Monitor is an automated tool that is installed with the Windows printer driver and the Macintosh printer driver. It automatically checks the printer status when a print job is sent. If the printer is unable to print a job, Status Monitor automatically displays an alert on the user's computer screen to let them know that the printer needs attention. The user can click the alert to view instructions explaining how to fix the problem. Status Monitor provides real-time support to users, while eliminating many of the help calls requesting printer support. Status Monitor saves you time for more critical tasks.

Note: Status Monitor is available from the Windows printer driver and the Macintosh printer driver for printers connected to the network via TCP/IP.

Online Diagnostics Technical Support

Online Diagnostics Technical Support is an automated, Internet-based support system that uses the user's default web browser to send diagnostic information from their printer to the Dell web site for analysis. Online Diagnostics Technical Support examines the information, diagnoses the problem, and proposes a solution.

Online Diagnostics provides support to users while eliminating many of the help calls requesting printer support.

How to Access Online Diagnostics

Use one of the following options to access Online Diagnostics Technical Support:

- Status Monitor
- The Embedded Web Server (EWS)
- Printer driver

Using Status Monitor

If Status Monitor displays an alert on your screen, do the following:

1. Click the alert to view instructions explaining how to fix the problem.
2. Follow the instructions on the screen.

Using the Embedded Web Server

To access Online Diagnostics Technical Support from the Embedded Web Server (EWS):

1. Launch your web browser.
2. Type the printer's IP address in the browser **Address** field.
3. Click the **Support** tab.
4. Click the **Online Diagnostics Tool** link.
5. Follow the instructions on the screen.

Using a Printer Driver

Note: Although this example explains how to access Online Diagnostic Technical Support from a Windows printer driver, you can also access the online support tool using a Macintosh printer driver.

To access Online Diagnostics Technical Support from your Windows printer driver:

1. On the desktop, click **Start**, select **Settings** and then click **Printers**.
2. Right-click the printer icon and then select **Properties**.
3. Click the **Printing Preferences** button.
4. Select the **Advanced** tab.
5. Click the **Dell Web Links** button.
6. Click the **Online Diagnostics Technical Support** link.

If you have other questions or problems, click the appropriate Online Diagnostics Technical Support topic to continue.

Embedded Web Server

The Embedded Web Server (EWS) provides a simple interface to the embedded web server in any networked Dell printer that enables you to manage, configure, and monitor networked printers from your desktop. The EWS gives administrators easy access to printer status, configuration, and diagnostic functions. It also provides users with access to printer status and special printing functions such as printing saved jobs. With the EWS software, you can access and manage your printers over a TCP/IP network using a web browser.

The EWS enables you to:

- Check supplies status from your desktop, saving a trip to the printer. Access job accounting records to allocate printing costs and plan supplies purchases.
- Define a network printer search and view a list of printers using Printer Neighborhood. The list provides current status information and allows you to manage printers independent of network servers and operating systems.
- Configure printers from your desktop. The EWS makes it easy to copy settings from one printer to another.
- Define network, administration, and security features for a network printer.
- Set up and use a simple web browser-based printing system. Marketing collateral, sales materials, business forms, or other standardized, frequently used documents can be saved as a group with their original driver settings, then reprinted on demand at high speed from any user's browser. A printer with a hard drive is required to support these functions.
- Troubleshoot print quality problems using built-in diagnostics.
- Define a link to your local web server's support page.
- Access online manuals and technical support information located on the Dell web site.

Note: The EWS requires a web browser and a TCP/IP connection between the printer and the network (in Windows, Macintosh, or UNIX environments). TCP/IP and HTTP must be enabled in the printer. JavaScript is required to access the pages in Printer Neighborhood. If JavaScript is disabled, a warning message appears and the pages do not function properly.

For complete information about the EWS, click the **Help** button in the EWS to go to the *EWS Online Help*.

To access the EWS:

1. Launch your web browser.
2. Type your printer's IP address in the browser **Address** field.

2 Network Installation Features

This chapter includes:

- [Using a Startup Network Configuration File](#) on page 2-2
- [Printer Driver Installation Features](#) on page 2-3
- [Discovery Protocols](#) on page 2-4

Using a Startup Network Configuration File

This section includes:

- [About the Configuration File](#) on page 2-2
- [Configuration File Requirements](#) on page 2-2
- [Specifying the Location of the Configuration File](#) on page 2-2

About the Configuration File

To configure printer settings or to perform other tasks, such as loading fonts, color tables, and job patches, you can create a startup network configuration file. Every time the printer is turned on or reset, the TFTP service on the TFTP server downloads the configuration file once an IP address is acquired and confirmed in the printer. The TFTP service processes the data in the configuration file as if it were a standard print job.

Configuration File Requirements

The configuration file must be:

- A valid PostScript or PCL file that contains the appropriate PostScript, PCL, or PJJ commands. For a list of additional PCL and PJJ commands, see [Printer Commands on page B-1](#).
- Stored on a TFTP server that the printer can access over the TCP/IP network.

Specifying the Location of the Configuration File

To specify the location of the configuration file, do one of the following:

- If the printer is connected to a TCP/IP network in a DHCP/BOOTP environment:
 - Use DHCP option 66 to specify the TFTP server IP address or hostname.
 - Use DHCP option 67 to specify the pathname of the configuration file.

For information on how to set these parameters, refer to your DHCP or BOOTP server documentation.

- If the printer is connected to a TCP/IP network in a non-DHCP environment, use the Embedded Web Server (EWS).

Using the Embedded Web Server

1. Click the **Properties** tab and expand the **Protocols** menu.
2. Select **TFTP**.
3. On the **TFTP Settings** page, set the following:
 - In the **TFTP Server Name** field, type the TFTP server IP address or hostname.
 - In the **Boot File Name** field, type the pathname of the configuration file.
4. Click the **Save Changes** button.

For more information, click the **Help** button to view the *EWS Online Help*.

Printer Driver Installation Features

This section includes:

- [Walk-Up Installation](#) on page 2-3
- [Discovery Protocols](#) on page 2-4

Walk-Up Installation

The Dell Installer enables quick and easy installation of the printer driver. The installer is included on the *Software and Documentation CD*, supplied with the printer, and is available on the web. When you run the installer, the main screen lists the Dell printers of that model discovered on the network or connected via USB. You can choose one of the discovered printers, type in the IP address of the desired printer, or use Walk-Up Technology. This technology is especially helpful when there is more than one Dell printer on the discovered printers list and you don't know the printer's IP address.

To use Walk-Up installation:

1. On the main installer screen, select **Walk-Up Technology** and then click the **Next** button.
2. On the printer control panel, select **Walk-Up Features** and then **Select for Installation**.

The installer connects the computer to the printer, completes the driver installation, then the printer prints a confirmation page.

Auto-Configuring Driver

During installation, the bi-directional communication between the driver and a printer connected to a network identifies the printer's configuration (dn) and the features available with the configuration, such as duplexing capability, additional trays, or a hard drive. The controls for settings, such as two-sided printing, tray selection, and secure printing are displayed or hidden/grayed out, and the mimic displays the correct printer configuration. This driver feature prevents users from making incorrect selections during installation.

Discovery Protocols

This section includes:

- [DDNS/WINS](#) on page 2-4
- [DNS \(Domain Name Services\)](#) on page 2-5
- [Service Location Protocol](#) on page 2-5
- [UPnP \(Universal Plug and Play\)](#) on page 2-6

DDNS/WINS

DDNS/WINS settings can be obtained from the BOOTP or DHCP server, if enabled. These settings enable the printer to register its IP name and address so other devices on the network can refer to it by name.

To change the DDNS/WINS settings:

1. Launch your web browser.
2. Type your printer's IP address in the browser **Address** field.
3. Click the **Properties** tab.
4. On the left navigation panel, expand the **Protocols** folder.
5. Select **TCP/IP**.
6. If prompted, type your Admin or Key User name and password.
7. At the top of the **Properties** tab, click **DNS/WINS**.
8. On the **DDNS/WINS Settings** page, you can modify the DNS/WINS settings. Follow the instructions on the page.
9. Click the **Save Changes** button.

For more information, including a description of the fields, click the **Help** button at the top of the EWS page to view the *EWS Online Help*.

DNS (Domain Name Services)

DNS settings reference servers by name and allow you to enter and view host names rather than IP addresses.

Note: Turning Multicast DNS ON allows the printer to be automatically discovered on a TCP/IP network by Apple Macintosh OS X Bonjour technology.

To change the DNS settings:

1. Launch your web browser.
2. Type your printer's IP address in the browser **Address** field.
3. Click the **Properties** tab.
4. On the left navigation panel, select the **Protocols** folder.
5. Select **TCP/IP**.
6. If prompted, type in your Admin or Key User name and password.
7. Follow the instructions on the page.
8. Click the **Save Changes** button.

For more information, including a description of the fields, click the **Help** button at the top of the EWS page to view the *EWS Online Help*.

Service Location Protocol

To change the configuration of the Service Location Protocol (SLP) Service Agent in the printer:

1. Launch your web browser.
2. Type your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Protocols** folder.
5. Select **TCP/IP**.
6. If prompted, type in your Admin or Key User name and password.
7. On the left navigation panel, select **SLP**.
8. Under **Service Location Protocol (SLP) Settings**, in the **SLP Enable** field, select **On** or **Off**.
9. If you selected **On**, follow the instructions on the page.
10. Click the **Save Changes** button.

For more information, including a description of the fields, click the **Help** button at the top of the EWS page to view the *EWS Online Help*.

UPnP (Universal Plug and Play)

UPnP provides a simplified method to obtain an IP Address for a printer, locate devices on the network, and display those devices on desktop computers.

1. Launch your web browser.
2. Type your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Protocols** folder.
5. Select **TCP/IP**.
6. If prompted, type in your Admin or Key User name and password.
7. On the left navigation panel, select **UPnP**.
8. On the **UPnP Settings** page, in the **SSDP Enable** field, select **On** or **Off**:
 - **On**: Will enable the printer to send and receive Simple Device Discovery Protocol announcements and requests.
 - **Off**: The printer will not issue nor respond to SSDP requests.
9. In the **SSDP TTL** field, set the **SSDP TTL** value. This value specifies the multicast radius, often referred to as *hop count* or *time-to-live*, for SSDP. The valid range is between 0-255.
10. Click the **Save Changes** button.

3 Network Administration Features

This chapter includes:

- [Printer Neighborhood](#) on page 3-2
- [Job Accounting](#) on page 3-3
- [Usage Profile Reports](#) on page 3-5
- [Protocol Control](#) on page 3-6
- [Cloning](#) on page 3-14

Printer Neighborhood

Printer Neighborhood is a tool in the Embedded Web Server (EWS) that enables you to search for printers on your network, check their status, and manage them remotely. You can also install, manage, and view printer usage information. Access to the embedded server in each printer enables you to perform other management tasks.

The default printer search mode is **Quick Search**, which quickly finds the Dell printers on your local subnet. To search for all types of printers or to change other defaults, click the **Preferences** tab.

Note: Javascript is required to access and use pages in Printer Neighborhood. If Javascript is disabled, a warning message is displayed and the pages will not function properly.

To access Printer Neighborhood:

1. Launch your web browser.
2. Type your printer's IP address in the browser **Address** field.
3. At the top of the page, click the **Printer Neighborhood** button.

A list of network printers is displayed.

Job Accounting

This section includes:

- [Using the Embedded Web Server to Access Job Accounting](#) on page 3-3

Job accounting is available through the EWS. The printer stores information about print jobs. The log file is stored either in the printer's RAM memory or on the hard drive if one is installed in the printer. Each job record contains fields such as user name, job name, pages printed, job times, and toner or ink used. Not all fields are supported by all printers. For more information about the fields supported, go to the *EWS Online Help*.

The job accounting values reported vary depending on the protocol and print command used when each job was printed. For example, using NPRINT over NetWare provides the printer with the most information about the job being printed. When using Windows and NetWare, the job name is often LST: or LST:BANNER. Other jobs from other ports may provide even less information about the job.

Dell recommends that a hard drive be used for job accounting.

- With a hard drive, the printer can store information about 5000 print jobs. The data in the log file is saved when the printer is turned off or reset.
- Without a hard drive, the printer can store information about the most recent 500 print jobs. The data in the log file is not saved when the printer is turned off or reset.

Note: Data in job accounting records may be a security risk because the names of users, as well as the titles, date, time, and length of printed jobs can be exposed. The content of print job pages is not stored in the job accounting system.

Job accounting can be enabled or disabled through the EWS.

Using the Embedded Web Server to Access Job Accounting

To access job accounting information using the EWS:

1. Launch your web browser.
2. Type the printer's IP address in the browser **Address** field.
3. Click the **Jobs** tab.

The Jobs Accounting Links page is displayed.

The Job Accounting Links page provides links that enable you to browse, download, clear, or disable job accounting records. For complete information on EWS job accounting, including clearing job information, downloading job information to a file, and job accounting file formats, click the **Help** button in the EWS to view the *EWS Online Help*.

To Enable or Disable Job Accounting

1. Launch your web browser.
2. Type the printer's IP address in the browser **Address** field.
3. Click the **Properties** tab.
4. On the left navigation panel, select **Security**.
5. On the left navigation panel under Security, select **Printing Security Settings**.
6. In the **Job Accounting Record** field, **enabled** is checked by default. To disable all job accounting, uncheck the **enabled** check box.
7. Click the **Save Changes** button.

Usage Profile Reports

This section includes:

- [Setting Up Usage Profile Reporting](#) on page 3-5
- [Sending Usage Profile Reports](#) on page 3-5

Usage Profile reports provide information on many aspects of printer usage gathered during the life of the printer.

Usage Profile reports track multiple items, including:

- Printer information, such as printer name, date installed, total pages printed, options installed, and network ID.
- Supplies usage data, such as toner or ink. By tracking supplies usage, you can order supplies before they reach their end of life.
- Media and tray information, such as how often prints are made on paper compared to transparencies, and how often each tray is used.
- Job characteristics, such as size and timing of jobs.

The reports are accessible through the EWS. From the Usage Profile Properties page, you can view or print a report, and also send it to an email address or to users who are specified in the page.

Setting Up Usage Profile Reporting

To set up usage profile reporting:

1. Launch your web browser.
2. Type the printer's IP address in the browser **Address** field.
3. Click the **Jobs** tab.
4. On the left navigation panel, click the **Usage Profile Reports** link.
5. Follow the instructions on the page to set up reports.
6. Click the **Save Changes** button.

For more information, including a description of the report fields, click the **Help** button in the EWS to view the *EWS Online Help*.

Sending Usage Profile Reports

To send a usage profile report using the EWS:

1. Launch your web browser.
2. Type the printer's IP address in the browser **Address** field.
3. Click the **Jobs** tab.
4. On the left navigation panel, select **Usage Profile Reports**.
5. Select the **Send to Specific Address** option and then type the desired email address in the **Send to Specific Address** field.
6. Click the **Send Usage Profile Report** button.

Note: To send usage profile reports using email, MaiLinX must be properly set up. See [MaiLinX Remote Printing](#) on page 3-11.

Protocol Control

This section includes:

- [HTTP](#) on page 3-6
- [TCP/IP](#) on page 3-7
- [Port 9100](#) on page 3-7
- [LPR](#) on page 3-8
- [IPP \(Internet Printing Protocol\)](#) on page 3-8
- [SNMP \(Simple Network Management Protocol\)](#) on page 3-9
- [FTP \(File Transfer Protocol\)](#) on page 3-9
- [Email Server or SMTP \(Simple Mail Transfer Protocol\)](#) on page 3-10
- [MaiLinX Remote Printing](#) on page 3-11
- [MaiLinX Alerts](#) on page 3-12

See also:

[Discovery Protocols](#) on page 2-4

All network protocols, including network printing, printing services, printer discovery, and management protocols can be enabled or disabled on the printer. If a protocol is enabled, you can set configuration parameters.

Note: To secure protocols, disable any protocols you are not using. This prevents unauthorized access through applications that use these protocols. For example, if you want to use IPP for a secure printing channel, disable the other printing protocols, Port 9100 and LPR.

HTTP

By default, HTTP is enabled. For information on disabling HTTP, contact Dell Technical Support at www.support.dell.com.

See also:

[About HTTP, HTTPS, and SSL/TLS](#) on page 4-3

TCP/IP

To change TCP/IP settings:

1. Launch your web browser.
2. Type your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, expand the **Protocols** folder.
5. Select **TCP/IP**.
6. If prompted, type in your Admin or Key User name and password.
7. Ensure you are on the **TCP/IP (v4) Settings** page (if necessary, click the **TCP/IP (v4)** link at the top of the page).
8. In the **BOOTP/DHCP** field, select one of the following:
 - **On**: The printer issues BOOTP and DHCP requests on startup.
 - **Off**: The printer does not issue BOOTP or DHCP requests on startup.
9. For changing **TCP/IP (v6)** settings, refer to the help: click the **Help** button in the EWS to view the *EWS Online Help*.
10. Click the **Save Changes** button.

Port 9100

The Port 9100 protocol is also known as AppSocket, RAW, or Windows TCPmon.

To change Port 9100 settings:

1. Launch your web browser.
2. Type your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, expand the **Protocols** folder.
5. Select **Port 9100**.
6. If prompted, type in your Admin or Key User name and password.
7. In the **Port 9100** field, select **On** or **Off**.
8. If you selected **On**, follow the instructions on the page to select Port 9100 settings. For more information, including a description of the fields, click the **Help** button in the EWS to view the *EWS Online Help*.
9. Click the **Save Changes** button.

LPR

LPR is an application-level printing protocol that uses TCP/IP to establish connections between printers and workstations on a network.

To change LPR settings:

1. Launch your web browser.
2. Type your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Protocols** folder.
5. Select **LPR**.
6. If prompted, type in your Admin or Key User name and password.
7. In the **LPR** field, select **On** or **Off**.
8. If you selected **On**, follow the instructions on the page to select LPR settings. For more information, including a description of the fields, click the **Help** button in the EWS to view the *EWS Online Help*.
9. Click the **Save Changes** button.

IPP (Internet Printing Protocol)

IPP is an industry standard protocol for printing as well as managing print jobs and media sizes, and supports authentication and encryption, making it a capable and secure printing solution. IPP is an IP-based protocol and can be used locally or over the Internet.

Note: To configure IPP for secure/encrypted printing, specify a user name, password, and digest authentication (for Windows only). Every client that tries to print to the printer over IPP must enter this information. The user name and password are sent in plain text to the printer. If you specify digest authentication, the password is secured before it is sent to the printer.

To change IPP settings:

1. Launch your web browser.
2. Type your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Protocols** folder.
5. Select **IPP**.
6. If prompted, type in your Admin or Key User name and password.
7. Select **On** or **Off** in the **IPP (Internet Printing Protocol)** field.
8. If you selected **On**, follow the instructions on the page to select IPP settings. For more information, including a description of the fields, click the **Help** button in the EWS to view the *EWS Online Help*.
9. Click the **Save Changes** button.

SNMP (Simple Network Management Protocol)

SNMP is a set of protocols designed to help manage complex networks. SNMP-compliant devices store data about themselves in MIBs and return this data to the SNMP requesters. The SNMP Configuration pages provide control over SNMP security, including methods to configure:

- Administrative and Key User accounts with privacy and authentication protocols and keys associated with each account.
- SNMP user account read or read/write access.
- An access control list that limits SNMP access to the printer to specific hosts.

For information on configuring SNMP, see [Configuring SNMP](#) on page 4-16.

FTP (File Transfer Protocol)

FTP is a protocol for exchanging files over any network supporting the TCP/IP protocol, such as the Internet or an intranet. You can use FTP to send print-ready files to the printer or to retrieve job accounting records from the printer.

To change FTP settings:

1. Launch your web browser.
2. Type your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, expand the **Protocols** folder.
5. Select **FTP**.
6. If prompted, type in your Admin or Key User name and password.
7. Select **On** or **Off** in the **FTP** field.
8. If you selected **On**, follow the instructions on the page to select FTP settings. For more information, including a description of the fields, click the **Help** button in the EWS to view the *EWS Online Help*.
9. Click the **Save Changes** button.

Retrieving the Job Accounting file via HTTP or FTP

To access the job accounting file via FTP:

1. Connect to your printer via FTP using the following command *FTP Printer_IP_Address*.
2. Type *get jobacct.log* to retrieve the job accounting file.

Note: The files on the printer cannot be displayed using the `dir/ls` commands.

To access the job accounting file via HTTP:

Type *http://Printer_IP_Address/jobacct.dat* in your web browser.

Email Server or SMTP (Simple Mail Transfer Protocol)

The Email Server settings page enables you to configure email server settings and to specify a return email address for undeliverable email.

You can configure email server settings in the EWS by either:

- Automatically identifying the SMTP email server (recommended).
- Manually specifying the SMTP email server.

You can also specify a return email address for undeliverable email, such as MaiLinX alerts and usage profile reports, to your email address.

To configure email server settings:

1. Launch your web browser.
2. Type the printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select **the Protocols** folder.
5. Select **Email Server**.
6. If prompted, type in your Admin or Key User name and password.
7. Do one of the following:
 - To automatically identify the SMTP email server, click the **Use DNS to Identify SMTP Server (Automatic)** option and then type in the **Primary Name Server IP Address** and the **Secondary Name Server IP Address** using the 4-byte IP address of the email server.
 - To manually specify the SMTP email server, click the **Specify SMTP Server Manually** option and then type in the information for the email server into the field provided. Set the 4-byte IP address of the SMTP Email Server to send alert notifications. If there is no DNS server, then only the IP Address is allowed.
8. (Optional) To specify an email address for returning undeliverable email, type your email address in the **Return Email Address** field.
9. Click the **Save Changes** button.

See also:

[MaiLinX Alerts](#) on page 3-12

[Usage Profile Reports](#) on page 3-5

MaiLinX Remote Printing

MaiLinX Remote Printing provides the following key features:

- The ability to send print jobs to a group of printers.
- Print services across firewalls and proxies.
- Status reporting using email messages.

MaiLinX Remote Printing consists of two parts:

- Client software installed on each user's workstation or PC enables users to send print jobs from Windows applications to Dell printers over the Internet. The client software enables users to set up their Internet-connected printers and create groups and subgroups of printers for easy distribution of print jobs.
- An EWS Printing Service on a Dell printer processes the print jobs from the clients.

System Requirements

- The client software requires an SMTP-capable email server/forwarder through which the client software on the user's computer can send email.
- Each printer requires an account on a POP3-capable email server from which it can retrieve email.

Setting Up MaiLinX Remote Printing

To set up your printer for remote printing:

1. Launch your web browser.
2. Type the printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Protocols** folder.
5. Click **Remote Printing**.
6. If prompted, type in your Admin or Key User name and password.
7. In the **MaiLinX Remote Printing** field, select **On**.
8. Follow the instructions on the **MaiLinX Remote Printing** page to set up your printer for remote printing. For more information including a description of the fields, click the **Help** button in the EWS to view the *EWS Online Help*.

MaiLinX Alerts

MaiLinX alerts enable the printer to automatically send email to you or specified users under the following conditions:

- When the printer requires attention or when service is needed.
- When the printer displays an error, warning, or alert.
- When a reply to an EWS Remote Internet Printing message is desired. For more information about EWS Remote Internet printing, click the **Help** button in the EWS to go to the *EWS Online Help*.
- When a reply to a MaiLinX Remote Printing message is desired.

Setting Up MaiLinX Alerts

To enable MaiLinX alerts:

1. Launch your web browser.
2. Type the printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select **Mail Alerts**.
5. If prompted, type in your Admin or Key User name and password.
6. In the **MaiLinX (and Usage Profile Properties)** field, select **On**.
7. Follow the instructions on the page to specify up to three users to receive messages: Admin, Key User, and Service.
8. Under **Advanced Settings**, you can also select advanced settings for:
 - Specifying email server settings.
 - Reading or changing default messages.
 - Reading or changing conditions and trigger settings.
9. Click the **Save Changes** button.

EtherTalk

To change EtherTalk settings:

1. Launch your web browser.
2. Type the printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Protocols** folder.
5. Select **EtherTalk**.
6. If prompted, type in your Admin or Key User name and password.
7. In the **EtherTalk** field, select **On** or **Off**.
8. If you selected **On**, follow the instructions on the page to select EtherTalk options. For more information, including a description of the fields, click the **Help** button in the EWS to view the *EWS Online Help*.
9. Click the **Save Changes** button.

Cloning

Cloning enables you to configure one printer and then copy that configuration to another printer on the same network. You can access cloning using the EWS to select the settings you want to clone from one printer to another printer.

To clone settings from one printer to another printer using the EWS:

1. Launch your web browser.
2. Type your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select **Clone Printer**.
5. If prompted, type in your Admin or Key User name and password.
6. On the **Clone Printer** page, select the settings you want to clone from the source printer or click **Check All** to select all the settings. The settings are:

<ul style="list-style-type: none"> ■ 802.1X ■ Custom Paper Types ■ DNS/WINS ■ E-Supplies ■ FTP ■ HTTPS ■ Input Trays ■ IPP ■ LPR ■ PCL ■ PostScript ■ Printing Security Settings ■ Security ■ SNMP ■ UPnP ■ Web Links 	<ul style="list-style-type: none"> ■ Control Panel Lockout ■ Date and Time ■ Email Server ■ EtherTalk ■ Fuser ■ Information Forwarding ■ Interfaces ■ IPsec ■ Mail Alerts ■ Port 9100 ■ Printer Defaults ■ Remote Printing ■ SLP ■ TCP/IP Settings ■ Usage Profile Properties
---	--
7. Type the IP address or DNS Name of the destination printer in the **IP Address or DNS Name** field.
8. (Optional) To assign a printer name to the destination printer, type this name in the **Printer Name (SNMP System Name)** field.
9. If the destination printer is located in a different domain/zone, modify the information in the **EtherTalk Zone** and/or **IP Domain Name** fields.
10. Click the **Clone Selected Settings** button.
A list of the selected settings to clone is displayed.
11. Click the **Clone** button to clone the destination printer with the selected settings from the source printer.

4 Security Features

This chapter includes:

- [Basic Concepts](#) on page 4-2
- [Securing the Printer in a High-security Environment](#) on page 4-5
- [Managing Certificates](#) on page 4-6
- [Configuring SSL](#) on page 4-7
- [Configuring Administrator and Key User Settings](#) on page 4-8
- [Configuring the Print Host Access List](#) on page 4-9
- [Securing the Hard Drive](#) on page 4-10
- [Configuring 802.1X](#) on page 4-13
- [Locking the Control Panel Menus](#) on page 4-15
- [Configuring SNMP](#) on page 4-16

Basic Concepts

This section includes:

- [About Admin and Key User Accounts](#) on page 4-2
- [About HTTP, HTTPS, and SSL/TLS](#) on page 4-3
- [About Certificates](#) on page 4-3
- [About Access Control Lists](#) on page 4-4

About Admin and Key User Accounts

Admin and Key User accounts in the Embedded Web Server (EWS) enable you to limit access to specific printer functions by specifying passwords for user classes. The EWS requires a name and password before access to the controlled printer functions is allowed.

The user classes are:

- **Administrator:** The person with the ultimate management responsibility and authority for controlling some or all of the printer functions.
- **Key User:** A person who has some administrative responsibilities and who manages some or all of the printer functions.
- **Any User:** Includes the majority of people who will be sending print jobs to the printer.

Once the passwords are set, select the printer functions from the Feature Authorization list that each user class has the right to access. The three categories of printer functions are:

- Administrative
- Web Server Printing
- Printer Neighborhood

See also:

- [Configuring Administrator and Key User Settings](#) on page 4-8

About HTTP, HTTPS, and SSL/TLS

HTTP (Hyper Text Transfer Protocol) is the protocol used to communicate across the Internet between the printer web server and the web browser (clients). Because the data is transmitted in plain text and passwords are only slightly encrypted, it is not secure; the data can be read or intercepted by other people.

HTTPS (Secure Hyper Text Transfer Protocol) is a secure version of HTTP. HTTPS provides authentication and encrypted communication to preserve the confidentiality of your data. Instead of using plain text, HTTPS uses either the SSL (Secure Socket Layer) protocol or the TLS (Transport Layer Security) protocol to encrypt data, thus ensuring reasonable protection from eavesdroppers and man-in-the-middle attacks.

Before using HTTPS, you must set up a certificate and select when to use SSL to encrypt data. You can set the printer to use SSL either to secure web pages that use passwords or to secure all web pages.

See also:

[About Certificates](#) on page 4-3

[Managing Certificates](#) on page 4-6

[Configuring SSL](#) on page 4-7

About Certificates

A certificate is an electronic message containing information about the printer and a digital signature.

Before configuring passwords, set up a certificate and then configure SSL to encrypt data, including passwords, for maximum security. You can set up a self-signed certificate or download a root-signed certificate, depending on your requirements.

Device Certificates:

A device certificate is stored in the printer and is used to validate the identity of the printer to clients and network servers and to allow encrypted communication. If you do not install a device certificate signed by a Certificate Authority (CA), a default self-signed device certificate is automatically established on the printer when it is needed. A CA signed device certificate is needed to log into the network when using 802.1X EAP authentication with TLS.

Self-Signed Certificates

Setting up a self-signed certificate is a quick and easy way to establish a certificate on the printer. The printer automatically generates a default self-signed certificate when the printer is turned on for the first time. To modify the certificate so it is specific to your printer, use the EWS to enter information about the location of the printer.

While self-signed certificates are safe for most applications and allow data encryption, they do not ensure valid authentication. Self-signed certificates are not necessarily secure because the certificate owner is only confirming his own identify instead of verification by a trusted third party. Although self-signed certificates encrypt the data that is exchanged, they do not prevent man-in-the-middle attacks.

If you want to use HTTPS, each printer must have a unique certificate that is accepted by each browser used to access the printer. This allows the printer web server to use HTTPS and encrypt data between the web browser and the printer. In addition, because each printer's certificate is unique, you must load a different certificate into the browser for each printer the browser will access.

See also:

[Self-Signed Certificates](#) on page 4-3

Root-Signed Certificates

Root-signed certificates are from a trusted Certificate Authority (CA). Using a certificate signed by a CA enables you to load one certificate into each browser, allowing access to all printers. Certificates from a trusted third party are considered more secure than self-signed certificates. Unlike self-signed certificates, root-signed certificates are not susceptible to man-in-the-middle attacks.

See also:

[Root-Signed Certificates](#) on page 4-4

[Managing Certificates](#) on page 4-6

[Configuring SSL](#) on page 4-7

About Access Control Lists

Access control lists enable you to limit access to devices, as well as device configuration and management features. By default, access control lists are unrestricted, which means all computers and host systems are allowed access.

The printer has four access control lists that may be configured using the EWS:

- **Print Host Access List:** The computers from which users can print. For information on setting up the Print Host Access List, see [Configuring the Print Host Access List](#) on page 4-9.
- **Administrator Access List:** The computers from which you can change printer settings. For information on setting up the Administrator Access List, see [Configuring Administrator and Key User Settings](#) on page 4-8.
- **Key User Access List:** The computers from which key users can change printer settings. For information on setting up the Key User Access List, see [Configuring Administrator and Key User Settings](#) on page 4-8.
- **SNMP Access Control List:** The host machines that are authorized to access the printer using SNMP. For information on setting up the SNMP Access List, see [Configuring the SNMP Access Control List](#) on page 4-21.

Securing the Printer in a High-security Environment

If you are concerned about the security of your printer in a high-security environment, such as a college or printing kiosk, you can configure settings in the EWS to “lockdown” or fully secure the printer. If you are not concerned about the security of your printer, you may only need to set up a certificate and then configure SSL to encrypt data including passwords.

To fully secure a printer:

1. In EWS, set up a certificate. (See [Managing Certificates](#) on page 4-6.)
2. Select when to use SSL. (See [Configuring SSL](#) on page 4-7.)

Note: The following steps may be completed in any order.

3. Select the **Administrator and Key User Settings**. (See [Configuring Administrator and Key User Settings](#) on page 4-8.)

Note: To prevent users from changing settings, clear the **Modify Configuration Web Pages** check box. To prevent users from viewing settings, clear the **View Configuration Web Pages** check box.

4. Set up the Print Host Access List. (See [Configuring the Print Host Access List](#) on page 4-9.)
5. Set up the removal of Unprinted Personal, Secure, and Proof Print Jobs. (See [Selecting the Automatic Removal of Secure, Personal, and Proof Jobs Option](#) on page 4-11.)
6. Select the **Hard Drive Overwrite** option. (See [Securing the Hard Drive](#) on page 4-10.)
7. Select the **Jam Recovery** option. (See [Jam Recovery](#) on page 5-2.)
8. Lock the control panel menus. (See [Locking the Control Panel Menus](#) on page 4-15.)
9. Configure SNMP. (See [Configuring SNMP](#) on page 4-16.)
10. Disable unused protocols. (See [Protocol Control](#) on page 3-6.)
11. Disable **Job Accounting**. (See [To Enable or Disable Job Accounting](#) on page 3-4.)

Note: To secure protocols, disable any protocols you are not using. This prevents unauthorized access through applications that use these protocols. For example, if you want to use IPP for a secure printing channel, disable the other printing protocols, Port 9100 and LPR. Disabling some protocols also disables some printer functions, such as printer discovery and Status Monitor.

Managing Certificates

To modify a self-signed certificate so it is specific to your printer or to install a downloaded root-signed certificate on the printer:

1. Launch your web browser.
2. Enter your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, expand the **Security** folder and then select **Certificates**.
5. If prompted, enter your Admin or Key User name and password.
6. All of the certificates created will appear in the **Friendly Name** list. From here you can delete existing certificates or add or create a new certificate.

To create a new certificate or CSR:

1. Click the **Add/Create Certificate** button.
2. Select from one of the following:
 - **Install a new Root Certificate:** Installs a new root certificate that is needed to validate the authentication server's certificate when using 802.1X EAP authentication.
 - **Install a CA signed Device Certificate:** Installs a device certificate signed by a certificate authority (CA) that validates the identity of the printer to the network.
 - **Create Certificate Signing Request (CSR):** Once a CSR is created, you can send it to a trusted CA for signing, and when returned, install the CA signed device certificate on the printer.
 - **Create Self-Signed Device Certificate:** Modifies the default self-signed device certificate that is automatically established on the printer by adding the details of your organization and location, etc.
3. Click the **Next** button, and follow the on-screen prompts.

For information on configuring certificates, click the **Help** button in the EWS to go to the *EWS Online Help*.

See also:

[About Certificates](#) on page 4-3

Configuring SSL

Once a certificate is set up, you can select when to use SSL to secure the connection between the printer and the server.

Note: You can restrict user access to SSL pages in the EWS. For more information, see [Configuring Administrator and Key User Settings](#) on page 4-8.

To configure SSL:

1. Launch your web browser.
2. Enter your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Security** folder.
5. Select **HTTPS**.
6. If prompted, enter your Admin or Key User name and password.
7. In the **Use SSL** box, select one of the following options:
 - **Never** (the default): SSL authentication is not required.
 - **To Secure Passwords**: Secures web pages that use passwords. A certificate must exist on the printer before you can use this setting.
 - **To Secure Pages and Passwords**: Secures all web pages.
8. Click the **Save Changes** button.

For more information, click the Help button in the EWS to go to the *EWS Online Help*.

See also:

[Managing Certificates](#) on page 4-6

Configuring Administrator and Key User Settings

To prevent unauthorized changes to printer settings:

1. Launch your web browser.
2. Enter your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Security** folder.
5. Select **Administrative Security Settings**.
6. If prompted, enter your Admin or Key User name and password.
7. In the **Administrator Settings** box, do one or both of the following:
 - In the **Host Access List field**, enter the IP addresses or host names of the computers allowed to change printer settings. Separate entries with a blank or a comma, specify ranges with a hyphen (-), and use an asterisk (*) to represent a group of numbers (e.g., 13.62.156.*). The default setting is **Unrestricted**, which allows all users to change printer settings.
 - In the **User Name** and **Password fields**, enter your user name and password (up to 10 alphanumeric characters). In **Verify Password**, re-enter the password. The user name and password should be kept secure.
8. Repeat Step 7 in the **Key User Settings** box. When entering the user name and password, enter the user name and password for key users.

Note: If you want to use the Key User account, you must configure an Administrator account. If the Administrator account is empty, then Any User has the same permissions as the Administrator user.

9. In the **Feature Authorization** box, select the check boxes next to the settings you want to enable for each type of user. Clear the check boxes next to the settings you want to prevent users from changing. The administrator has full rights and access to all functions. The Any User class may not have greater access to a function than the Key User class.

Note: If you want to prevent users in the **Key User** or **Any User** classes from using the EWS to change printer settings, clear the **Modify Configuration Web Pages** check box. If you want to prevent users in the **Key User** or **Any User** classes from viewing the EWS pages that control printer settings, clear the **View Configuration Web Pages** check box.

10. Click the **Save Changes** button.

See also:

[About Admin and Key User Accounts](#) on page 4-2

Configuring the Print Host Access List

To prevent unauthorized printing to your printer:

1. Launch your web browser.
2. Enter your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Security** folder.
5. Select **Printing Security Settings**.
6. If prompted, enter your Admin or Key User name and password.
7. Enter the IP addresses or host names of the computers allowed printing access in the **Host Access List** field. Separate entries with a blank or a comma, specify ranges with a hyphen (-), and use an asterisk (*) to represent a group of numbers (e.g., 13.62.156.*). The default setting is **Unrestricted**, which allows all users to access the printer to print their jobs.
8. Click the **Save Changes** button.

See also:

[About Access Control Lists](#) on page 4-4

Securing the Hard Drive

This section includes:

- [Selecting the Hard Drive Overwrite Security Option](#) on page 4-10
- [Selecting the Automatic Removal of Secure, Personal, and Proof Jobs Option](#) on page 4-11

Selecting the Hard Drive Overwrite Security Option

When a file is deleted from the printer's hard drive, only the file name is deleted; the data in the file remains on the hard drive, regardless of the operating system. An unauthorized person could, possibly, retrieve the data in the file that was deleted.

Printers with a hard drive have a Hard Drive Overwrite Security option. This option overwrites the data stored on the hard drive of a file marked for deletion using DOD5200.28-M, a U.S. Department of Defense three-pass overwriting process: first with a pattern of 0s (zeros), next with a pattern of 1s, and finally with a random pattern of bits. This is done before the file's directory entry is removed and the storage space on the hard drive is marked as available for reuse. The random pattern of bits stays on the hard drive until it is overwritten by another file.

By default, the Hard Drive Overwrite Security option is disabled. To select the Hard Drive Overwrite Security option, you can use one of the following methods:

- The printer control panel.
- The EWS

Using the Control Panel

To select the automatic removal of secure, personal, and proof print files from the hard drive:

1. On the control panel, select **Printer Setup** and then press the **OK** button.
2. Select **File Security** and then press the **OK** button.

Note: If File Security is locked on the control panel, use the EWS to select the **Hard Drive Overwrite Security** option.

3. To remove all secure, personal, and proof print job files:
 - a. Select **Overwrite Removals** and then press the **OK** button to select **On** or **Off**.

Note: The option Remove Job Files does not remove saved or protected print job files.

Using the Embedded Web Server

To select the Hard Drive Overwrite Security option:

1. Launch your web browser.
2. Enter the printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Security** folder.
5. Select **Printing Security Settings**.
6. If prompted, enter your Admin or Key User name and password.
7. Under **Hard Drive Overwrite Security Options**, select one of the following options:
 - **Never overwrite files/jobs**: Disables the printer's overwrite feature.
 - **Always overwrite when deleting files/jobs**: Sets the printer to always overwrite the files on the hard drive when they are deleted.
8. Click the **Save Changes** button.

Selecting the Automatic Removal of Secure, Personal, and Proof Jobs Option

The printer enables you to store secure, personal, and proof jobs on the hard drive and then print them later. You can choose how long these jobs remain on the hard drive. This feature is useful when someone:

- Forgets about an unprinted secure, personal, or proof job that was stored on the hard drive.
- Sends a secure job to the printer, but does not walk to the printer to print the job.
- Stores a proof job, prints it once and then forgets to delete it.

To set the automatic removal of secure, personal, and proof print files from the hard drive, use one of the following methods:

- The printer's control panel
- The EWS

Using the Control Panel

To select the automatic removal of secure, personal, and proof print files from the hard drive:

1. On the control panel, select **Printer Setup** and then press the **OK** button.
2. Select **File Security** and then press the **OK** button.

Note: If File Security is locked on the control panel, use the EWS to select the Hard Drive Overwrite Security option.

3. To remove all secure, personal, and proof print job files:
 - a. Select **Overwrite Removals** and then press the **OK** button to select **On** or **Off**.

Note: The option Remove Job Files does not remove saved or protected print job files.

4. To remove all secure, personal, and proof print files every day at a set time:
 - a. Select **Daily Removal** and then press the **OK** button to select **On** or **Off**.
 - b. Select **Remove At HH:MM** and then press the **OK** button.
 - c. Enter the hour and then press the **OK** button.
 - d. Enter the minute and then press the **OK** button.
5. To remove all secure, personal, and proof print files after the files are a certain age or older:
 - a. Select **Age-based Removal** and then press the **OK** button to select **On** or **Off**.
 - b. If you selected **On**, select **Remove At Age** and then press the **OK** button.
 - c. Enter **1** to **999** hours and then press the **OK** button.

Note: To reset all items in the File Security menu to their default values, select **Reset File Security**.

Using the Embedded Web Server

To select the automatic removal of secure, personal, and proof print files from the hard drive:

1. Launch your web browser.
2. Enter the printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Security** folder.
5. Select **Printing Security Settings**.
6. If prompted, enter your Admin or Key User name and password.
7. Under **Remove Unprinted Personal, Secure and Proof Jobs**, select one or more of the following options:
 - **Upon Save Changes:** All personal, secure, and proof jobs are removed when you click the **Save Changes** button.
 - **At this time each day (24hr):** All unprinted personal, secure, and proof jobs are removed at this time each day.
 - **When jobs are:** All unprinted, personal, secure, and proof jobs are removed when they are this age or older.

Note: Files deleted using one of these options are overwritten if the Hard Drive Overwrite Security option has been enabled. For more information, see [Selecting the Hard Drive Overwrite Security Option](#) on page 4-10.

8. Click the **Save Changes** button.

Configuring 802.1X

This section includes:

- [Introduction to 802.1X and EAP](#) on page 4-13
- [802.1X Configuration in the Embedded Web Server](#) on page 4-13

Introduction to 802.1X and EAP

The 802.1X IEEE standard defines port-based, authenticated network access control for Ethernet local area networks (LANs). With 802.1X, the user or device must pass network access control by successfully authenticating with credentials, such as a name and password, or else network access is denied. 802.1X uses the Extensible Authentication Protocol (EAP) to relay port access requests between LAN stations/the clients being authenticated (supplicants), Ethernet switches or wireless access points (authenticators), and RADIUS servers (authentication servers).

EAP is the standard authentication mechanism carried over 802.1X. The EAP method is an inner authentication protocol that provides the secure mechanism for the authentication exchange. Multiple EAP methods can be used. EAP methods are defined in International Engineering Task Force (IETF) Requests for Comments (RFC) documents, RFC drafts, or they can be proprietary. EAP methods have a significant influence on how your network is designed and implemented, because not all supplicants, not all access points, and not all RADIUS servers support all EAP methods. A careful evaluation of standards can help with selecting appropriate LAN components that will avoid vendor lock-in or dead-end technology.

802.1X Configuration in the Embedded Web Server

Use the 802.1X configuration pages in the EWS to perform the following tasks. Required information varies depending on the EAP method(s) that you select.

Note: Access to the 802.1x configuration pages in the EWS can be restricted by the passwords and feature authorization settings under Administrative Security.

1. Launch your web browser.
2. Enter the printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, expand the **Security** folder and select **802.1X**.
5. If you are a more experienced user, click the **Advanced** button; otherwise, click the **Configuration Wizard** button which will guide you through the setup.

For more information, click the **Help** button in the EWS to view the *EWS Online Help*.

6. **Select EAP authentication method(s)** – Select one or more authentication methods:
 - MD5 Challenge
 - TLS
 - PEAP-MS-CHAPv2 (PEAP)

If you selected a method that uses X.509 security certificates (**TLS** or **PEAP**), you can use a root certificate to validate the authenticating server's certificate.

If you have selected **TLS** authentication, you must either install a signed device certificate that is trusted by the authenticating server, or add the device's self-signed certificate to the authenticating server's trusted certificate store.

7. **Install root certificate** – If you select **EAP** method(s) that require a root certificate, you can:
 - Install a new root certificate.
 - Use the already existing root certificate.
 - Choose not to validate the server.
8. **Install device certificate** – If you select EAP method(s) that require a device certificate, you can:
 - Install a new device certificate.
 - Use the default self-signed certificate.
 - Use a custom self-signed certificate.
 - Use the already existing signed device certificate if one exists.
9. **Enter credentials** – If you select EAP method(s) that require credentials, specify the user name and password that users must provide.

Locking the Control Panel Menus

To prevent others from changing settings in the printer setup menus, you can lock some of the control panel menus. This is useful when printers are located in public places, such as schools, libraries, and office/print centers.

Use the EWS to lock or unlock the control panel menus:

1. Launch your web browser.
2. Enter your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Security** folder.
5. Select **Control Panel Lockout**.
6. If prompted, enter your Admin or Key User name and password.
7. Select the check box of each control panel menu item you want to lock.

Note: If you lose the Admin password and **Reset NVRAM** is locked on the control panel, a Fee-For-Service call is required to reset the password and to enable changes to printer settings. When the password is reset, you must reconfigure the printer settings because all the stored data is deleted.

8. Click the **Save Changes** button.

Configuring SNMP

This section includes:

- [Configuring SNMP for Maximum Security](#) on page 4-16
- [Configuring SNMP v1/v2c](#) on page 4-17
- [Configuring SNMP v3](#) on page 4-19
- [Configuring the SNMP Access Control List](#) on page 4-21
- [Disabling SNMP](#) on page 4-21

If you are using SNMP, you must configure it using the EWS. If you are not using SNMP, disable it to prevent unauthorized access through applications that use SNMP. For information on disabling SNMP, see [Disabling SNMP](#) on page 4-21.

SNMP is a set of protocols designed to help manage complex networks. SNMP-compliant devices store data about themselves in MIBs and return this data to the SNMP requestors. The SNMP configuration pages provide control over SNMP security, including the methods to configure:

- Administrative and Key User Accounts with privacy and authentication protocols and keys associated with each account.
- SNMP user account read or read/write access.
- An access control list that limits SNMP access to the printer specific hosts.

Note: The **Current State** field on the **SNMP Configuration** page identifies the SNMP enable/disable status. Possible values include **SNMP v3 Enabled**, **SNMP v1/v2c Enabled**, and **All SNMP Protocols Disabled**.

Configuring SNMP for Maximum Security

Note: An SSL certificate must be established on the printer to enable SNMP v3. In most cases, a certificate is automatically established when the printer is first turned on and no other action is required.

Use the EWS to configure SNMP for maximum security:

1. Launch your web browser.
2. Enter the printer's IP address in the browser **Address** field.
3. Click the **Properties** tab.
4. For selecting SSL:
 - a. On the left navigation panel, expand the **Security** folder and then select **HTTPS**.
 - b. If prompted, enter your Admin or Key User name and password.
 - c. On the **HTTPS** page, in the **Use SSL** field of the **Configure HTTPS** box, select **To Secure Pages and Passwords**.
5. Restrict access to the EWS SNMP and SSL pages:
 - a. On the **Properties** tab, select **Security**.
 - b. On the left navigation panel, select **Administrative Security Settings**.
 - c. If prompted, enter your Admin or Key User name and password.

- d. On the **Administrative Security Settings** page under **Feature Authorization**, clear the **View Configuration Web Pages** and **Modify Configuration Web Pages** check boxes for users who should not have access to these pages.
6. Configure SNMP v3 by setting up the SNMP Administrative and Key User accounts:
 - a. Select the **Protocols** folder on the left navigation panel and then select **SNMP**.
 - b. If prompted, enter your Admin or Key User name and password.
 - c. On the **SNMP Configuration** page, click the **Configure SNMP v3** button and set up the SNMP Administrative account. For more information, see [Configuring SNMP v3](#) on page 4-19, or click the **Help** Button in the *EWS Online Help*.

Configuring SNMP v1/v2c

Configuring SNMP v1/v2c Community Names

To configure SNMP v1/v2c community names:

1. Launch your web browser.
2. Enter the printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Protocols** folder.
5. Select **SNMP**.
6. If prompted, enter your Admin or Key User name and password.
7. On the **SNMP Configuration** page, click the **Configure SNMP v1/v2c** button.
8. To set community names for GET/SET SNMP queries and traps, enter information (up to 32 alphanumeric characters) in one or more of the following fields:

Note: These names are not displayed on this page, but are shown as a row of asterisks (*).

- **GET Community Name:** Allows a host to perform SNMP GETS on the printer using this community name.
- **SET Community Name:** Allows a host to perform SNMP SETS on the printer using this community name.
- **Trap Community Name:** Allows a host to receive traps from the printer using this community name.

Note: Hosts must have these community names configured in their applications to access the printer using **SNMP v1/v2c**.

9. Click the **Apply** button to save the changes.

Adding or Editing Traps for SNMP v1/v2c

To add or edit traps for SNMP v1/v2c:

1. On the **SNMP Configuration** page: Click the **Configure SNMP v1/v2c** button and then click the **Configure Traps** button.

The **Configure Traps** page lists the current Trap Destination Addresses for the SNMP protocol.

- The **Address** column lists the Trap Destination IP address or DNS Name.
 - The **Version/Type** column lists the SNMP Trap version or Inform Request for sending to the specified trap address. SNMP Trap versions include SNMP v1 Traps, SNMP v2c Traps, and SNMP v2c Inform Requests.
 - The **Traps** column lists the types of traps to send to the Trap Destination Address. Traps to be received include Printer Traps, Job Monitoring Traps, Cold Start, and Authentication Traps.
2. Do one of the following:
 - To add traps for SNMP v1/v2c, click the **Add Destination** button and then go to Step 3.
 - To edit the settings for a Trap Destination Address, click the corresponding **Edit** button and then go to Step 3.
 - To delete a Trap Destination Address, click the corresponding **Delete** button.
 3. To add or edit a Trap Destination IP Address, click the **IP Address** radio button and then enter the IP Address in the fields.
 4. To add or edit a Trap Destination DNS Name, click the **DNS Name** radio button and then enter the DNS Name in the field.
 5. For a non-standard UDP port, enter the UDP Port Number in the field.
 6. Select the SNMP trap version to send to the specified address. SNMP versions include SNMP v1 Traps (default), SNMP v2c Traps, and SNMP v2c Inform Requests.
 7. Enter the community name of the destination device in the **Community Name** field.
 8. For **Traps to be received**, select the check boxes of the different types of traps to send to the specified address. Traps to be received include Printer Traps (default), Job Monitoring Traps, Cold Start Traps, and Authentication Traps.

Note: At least one trap type must be selected.

9. Click the **Apply** button to save the changes.

Configuring SNMP v3

When configuring SNMP v3, you can set up:

- Administrative, Key, Any User, and Driver accounts with Privacy and Authentication Keys associated with each account.
- SNMP user read and write access.
- An access control list that limits SNMP printer access to the specific hosts. See [Configuring the SNMP Access Control List](#) on page 4-21.

To configure and enable SNMP v3:

1. Launch your web browser.
2. Enter the printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Protocols** folder.
5. Select **SNMP**.
6. If prompted, enter your Admin or Key User name and password.
7. On the **SNMP Configuration** page, click the **Configure SNMP v3** button.
8. Click the **Configure Account(s)** button. A series of pages displays that enable you to configure SNMP v3 and the **Administrative User**, **Key User**, and **Any User/Driver** settings. The first page displays Administrative User account information after the account has been created.
9. Do one of the following:
 - To create the Administrative User account and to enable SNMP v3, enter a user name or accept the default name **admin** and then click the **Create** button.
 - To configure the Key User and other account settings, click the **Next** button.
 - To delete the Administrative User account and disable SNMP v3, click the **Delete** button.

Note: Deleting the Administrative User account and disabling SNMP v3 also deletes all other accounts, including the Key User and Any User settings.

The Administrative User Account Settings

- **User Name:** The Administrative User account name defined on the **Configure SNMP v3: Administrative User Account** page.
- **Authentication Protocols:** The protocol associated with the Authentication Key; selected on the **Configure SNMP v3: Administrative User Account** page.
- **Authentication Key:** The Authentication Key defined on the **Configure SNMP v3: Administrative User Account** page is displayed as a row of asterisks (*) here.
- **Privacy Protocol:** The protocol associated with the Privacy Key; selected on the **Configure SNMP v3 Administrative User Account** page.
- **Privacy Key:** The Privacy Key defined on the **Configure SNMP v3: Administrative User Account** page is displayed as a row of asterisks (*) here.
- **MIB Access:** The Administrative User account's MIB access permissions, which are set to **Read/Write** by default.

The Key User Account Settings

- **User Name:** The Key User account name defined on the **Configure SNMP v3: Key User Account** page.
- **Authentication Protocol:** The protocol associated with the Authentication Key; selected on the **Configure SNMP v3 Key User Account** page.
- **Authentication Key:** The **Authentication Key** defined on the **Configure SNMP v3: Key User Account** page is displayed as a row of asterisks (*) here.
- **Privacy Protocol:** The protocol associated with the Privacy Key; selected on the **Configure SNMP v3: Key User Account** page.
- **Privacy Key:** The privacy key defined on the **Configure SNMP v3: Administrative User Account** page is displayed as a row of asterisks (*) here.
- **MIB Access:** The Key User account's MIB access permissions selected on the **Configure SNMP v3: Key User Account** page. MIB access for the Key User account can be set to **Read** or **Read/Write**.

Note: SNMP Read and SNMP Write access for the Any User account must be equal to or less than the read and write access privileges set for the Key User account. Once the Key User account is created, if the Any User account is set to have read and/or write access, but the Key User account access is not set, the Key User account is set with the same access privileges as the Any User account by default. Similarly, if the Key User account does not have SNMP Write access, the Any User account cannot be set with write access.

The Any User/Driver Account Settings

- **User Name:** Displays **anyuser** by default and cannot be changed.
- **MIB Access:** Displays the Any User account's MIB access permissions selected on the **Configure SNMP v3: Other Account Settings** page. This can be set to **Read** or **Read/Write**.
- **SNMP Read:** Displays a check symbol if SNMP Read access is enabled. SNMP Read access can be enabled for the Any User account after the Key User account is created.
- **SNMP Write:** Displays a check symbol if SNMP Write access is enabled. SNMP Write access can be enabled for the Any User account after the Key User account is created.
- **Driver Account Enabled:** Displays a check symbol if the **Driver Account** is enabled (default).

Note: If the **Driver Account** is disabled, it breaks communication between the printer and any applications using SNMP v3, such as Dell printer drivers and Status Monitor. For a complete list of applications disabled, see [Disabling SNMP](#) on page 4-21.

Configuring the SNMP Access Control List

To set up a list of hosts that are authorized to access the printer using SNMP:

1. Launch your web browser.
2. Enter your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Protocol** folder.
5. Select **SNMP**.
6. If prompted, enter your Admin or Key User name and password.
7. Enter up to 10 host IP addresses in the **Host Access List** field of the **SNMP Access Control List** box. Separate entries with a blank or a comma, specify ranges with a hyphen (-), and use an asterisk (*) to represent a group of numbers (e.g., 13.62.156.*).
8. Click the **Save Changes** button.

See also:

[About Access Control Lists](#) on page 4-4

Disabling SNMP

If you are not using SNMP, disable it to prevent unauthorized access through applications that use these protocols. If you disable SNMP, the following driver features are also disabled:

- Status Monitor alerts
- Walk-Up Installer
- Smart Trays
- Online Diagnostics
- Auto supplies ordering
- Consumable levels
- Warning and error status
- Synchronization with installed options, such as hard drive, memory, and extra trays

To disable SNMP:

1. Launch your web browser.
2. Enter your printer's IP address in the browser **Address** field.
3. Click **Properties**.
4. On the left navigation panel, select the **Protocols** folder.
5. Select **SNMP**.
6. If prompted, enter your Admin or Key User name and password.
7. Click the **Disable SNMP Now** button.
8. Click the **Save Changes** button.

5 Printing Features

This chapter includes:

- [Secure, Personal, Personal Saved, Proof, Print With, and Saved Print Jobs](#) on page 5-2
- [Smart Trays](#) on page 5-2
- [Jam Recovery](#) on page 5-2

Secure, Personal, Personal Saved, Proof, Print With, and Saved Print Jobs

These features are available if your printer has an internal hard drive. These jobs are stored on the hard drive and remain in the printer even when it is turned off.

Select one of the following special job types:

- **Normal:** Prints the job without requiring a password.
- **Personal Print:** Prints the job when you select your user name on the control panel or in Embedded Web Server from the Personal Jobs page on the Print tab. The job is deleted after printing.
- **Personal Saved Print:** Stores the job on the hard drive with your four-digit numeric password so you can print it on demand from the control panel or in the Embedded Web Server (EWS) from the Personal Jobs page on the Print tab. The job is not deleted after printing.
- **Secure Print:** Prints the job only after you enter the four-digit numeric password on the control panel.
- **Proof Print:** Prints only one copy of the job so that you can proof the copy. If you want to print the remaining copies, select the job name on the control panel.
- **Saved Print:** Stores the job on the hard drive so you can print it on demand from the control panel. The job is not deleted after printing. This is useful for any document you frequently print, such as tax forms, personnel forms, or requisition forms.
- **Print With:** Prints the current job with existing jobs that are stored on the printer's hard drive that you specify in the **Print With Settings** dialog box when you click the **Print With** button.

Smart Trays

The Smart Trays feature in the Windows drivers enables you to view the size and type of media in each tray of the printer before sending the job. In Windows environments, when you access the printer properties, the driver queries the printer for the current paper and tray configuration and displays that information on the **Paper/Output** tab.

Jam Recovery

Note: Jam recovery is not available on all printers. Check the documentation that came with your printer for more information.

The jam recovery settings enable you to select how the printer handles jobs that are in the process of printing when a media jam occurs. Jam recovery settings are especially important to consider when printing checks. Normally when a media jam occurs, you can pull out the jammed media and the printer reprints that page and then the rest of the job. While printing checks, someone could cause a media jam as the media is exiting the printer so that a check is

reprinted. To prevent the printer from printing two copies of the same check, you can set the printer to begin printing the job from the point where the media jammed through the end of the job, or cancel the job completely.

To configure the jam recovery setting, use one of the following methods:

- The printer's control panel
- Embedded Web Server

Jam Recovery Using Embedded Web Server

To configure jam recovery settings:

1. Launch your web browser.
2. Enter the printer's IP address in the browser **Address** field.
3. Click the **Properties** tab.
4. On the left navigation panel, expand the **Security** folder.
5. Select **Printing Security Settings**.
6. If prompted, enter your Admin or Key User name and password.
7. Under **Jam Recovery Options**, select one of the following options:
 - **Reprint the jammed page and continue printing the rest of the job:** After the jam is cleared, the printer begins printing the job from the point where the media jammed, including the jammed page, through the end of the job.
 - **Do not reprint jammed page, but do continue printing the rest of the job:** After the jam is cleared, the printer cancels the rest of the print job.
8. Click the **Save Changes** button.

6 Glossary

Terms and Abbreviations

Terms and Abbreviations	Definitions
access control list	An Embedded Web Server feature that enables you to limit access to devices, as well as device configuration and management features.
Admin account	An Embedded Web Server feature that enables you to limit access to specific printer functions by specifying a name and password. The Admin account has the most permissions. The administrator must know the Admin name and password to access the printer functions in the Embedded Web Server.
authentication	An Embedded Web Server feature that requires users to log in with a network user ID and password for security and tracking purposes.
bi-directional	A type of connection in which communications are sent and received simultaneously.
BOOTP	BOOTP (Boot Parameter Protocol) is a protocol that allows a network user to be automatically configured (receive an IP address) and have an operating system boot or initiated without user involvement.
certificate	An electronic message containing information about the printer and a digital signature, which is stored in the printer. A certificate is used to validate the identity of the printer to clients and network servers and to allow encrypted communication.
DHCP	DHCP (Dynamic Host Configuration Protocol) is a protocol in which UNIX, Windows NT, and Windows 2000 servers can dynamically allocate TCP/IP addresses.
DNS	DNS (Domain Name System) is used on the Internet for translating the names of network nodes into addresses.
driver	Software that is loaded on the client workstation that prepares data to be sent to the printer.
EAP	EAP (Extensible Authentication Protocol) is the standard authentication mechanism carried over 802.1X. The EAP method is an inner authentication protocol that provides the secure mechanism for the authentication exchange.

Terms and Abbreviations	Definitions
Embedded Web Server	Embedded Web Server (EWS) is a printer administration and support tool. With EWS software, you can access printer status and manage your printer over a TCP/IP network using a web browser.
EtherTalk	A type of network connection (provided by EtherTalk software installed on a Macintosh computer) that enables use of AppleTalk network services on an Ethernet network.
FTP	FTP (File Transfer Protocol) is a basic TCP/IP connectivity utility used to transfer data between computers.
host	A computer or other device on a TCP/IP network.
HTTP	HTTP (Hyper Text Transfer Protocol) is a non-secure protocol used to communicate across the Internet between the printer web server and the web browser (clients).
HTTPS	HTTPS (Secure Hyper Text Transfer Protocol) is a secure protocol used to provide authentication and encrypted communication to preserve the confidentiality of your data.
Internet	The global collection of networks that are connected together and share a common range of IP addresses.
IP	IP (Internet Protocol) is a network protocol used for sending network packets over a TCP/IP network.
IP address	A unique 32-bit address for a host on a TCP/IP network or Internet.
IPP	IPP (Internet Printing Protocol) is an application-level protocol that is used for distributed printing on the Internet and intranets. It is designed to validate the IPP specification and is used as an aid in developing IPP servers.
job accounting	The purpose of job accounting is to collect and report information about all jobs that print. The information collected identifies the submitter of the job and the resources used to print the job.
Key User account	An Embedded Web Server feature that enables you to limit access to specific printer functions by specifying a name and password. You can set up a Key User account that is password protected. The Key User has the ability to change some printer settings. Embedded Web Server requires the name and password before access to the printer function is allowed.
LPR	LPR (Line Printer Remote) is an application-level printing protocol that uses TCP/IP to establish connections between printers and workstations on a network.
MaiLinX alerts	A feature in the Embedded Web Server that allows the printer to automatically send email to you and others under certain conditions.
MaiLinX remote printing	An Embedded Web Server feature that enables you to print to Dell printers over the Internet directly from Windows applications. The print jobs are sent as email.
mDNS	mDNS (multicast DNS) is a multicast-based discovery protocol that enables you to find your printer on an Apple network or another device that uses multicast-based discovery.
MIB	MIB (Management Information Base) provides specific information about the state of hardware components and software processes. MIB is used as part of network management tools and functions.

Terms and Abbreviations	Definitions
network	A collection of connected devices such as computers and printers. A network is a tool for communication that allows users to store and retrieve information, share printers, and exchange information.
network address	The network portion of an IP address. For a class A network, the network address is the first byte of the IP address. For a class B network, the network address is the first two bytes of the IP address.
network connection	The software and protocol that connect network devices, such as PCs and printers.
Online Diagnostics Technical Support	Online Diagnostics Technical Support is an automated, Internet-based support system that uses the user's default web browser to send diagnostic information from their printer to the Dell web site for analysis.
PCL	PCL (Printer Control Language) is the PDL language created by Hewlett-Packard. It became an industry standard and is now available in almost all printer platforms for the office (e.g., PCL 5).
PJL	PJL (Printer Job Language) and PCL commands are used in application programs to control job settings and printer defaults.
Port 9100	A printing protocol known as AppSocket, RAW, or Windows TCPmon.
PostScript	A page description language created by Adobe and used in most Dell printers.
printer driver	Enables your computer and printer to communicate; provides access to the features of your printer.
printer discovery	Software mechanism for finding printers typically on a network.
Printer Neighborhood	A tool in the Embedded Web Server that enables you to search for printers on your network, check their status, and manage them remotely.
printing kiosk	A digital imaging/print platform that is used to connect a laptop computer to a network for printing to a printer and then paying for the output. A printing kiosk is sometimes located in an airport or library.
protocol	The rules that control the transmitting and receiving of data.
RADIUS	Radius (Remote Authentication Dial In User Service) is a server used for remote user authentication and accounting. It can be used on any network that needs a centralized authentication and/or accounting service for its workstations.
SLP	SLP (Service Location Protocol) is a protocol that provides a flexible and scalable framework for providing hosts with access to information about the existence, location, and configuration of networked services. SLP is useful in enterprise networks.
Smart Trays	A driver feature that displays the current paper type and size available in each printer tray.
SMTP	SMTP (Simple Mail Transfer Protocol) is a protocol for sending email messages between servers.
SNMP	SNMP (Simple Network Management Protocol) is a protocol used to help manage complex networks. SNMP-compliant devices store data about themselves in MIBs (Management Information Bases) and return this data to the SNMP requestors.

Terms and Abbreviations	Definitions
SSL	SSL (Secure Socket Layer) is a protocol that has become the universal standard on the Web for authenticating sites and for encrypting communications between users and Web servers. Because SSL is built into all major browsers and Web servers, simply installing a digital certificate or Server ID enables SSL capabilities.
Status Monitor alerts	Status Monitor is a tool installed with the Windows printer driver and the Macintosh printer driver. It automatically checks the printer status when a print job is sent. If the printer is unable to print a job, Status Monitor automatically displays an alert on the user's computer screen to let them know that the printer needs attention. The user can click the alert to view instructions explaining how to fix the problem.
TCP/IP	TCP/IP (Transmission Control Protocol/Internet Protocol) is a set of communication protocols that is supported by a variety of computer platforms. TCP controls data transfer, and IP controls data routing.
TFTP	TFTP (Trivial File Transfer Protocol) is a version of the TC/IP FTP protocol that uses UDP and has no directory or pass capability.
TLS	TLS (Transport Layer Security) is a protocol for establishing a secure connection between the client and the server. TLS is capable of authenticating both the client and the server, and creating an encrypted connection between the two. HTTP uses TLS to establish secure connections.
UDP	UDP (User Datagram Protocol) is a minimal message-oriented transport layer protocol found on domain name servers (DNS).
Walk-Up Technology	The Dell Print Driver Installer (Windows) is a software utility that provides for quick and easy installation of the printer driver. One choice for installation is Walk-Up Technology. For more information, see Walk-Up Installation on page 2-3.

A Configuration Card Parameters

The printer has a configuration card that stores network parameters and configuration (dn) data. The configuration card is hot swappable, enabling you to share or replace it, providing an alternative to on-site service.

Network settings are saved on the configuration card. If the configuration card is removed from an old printer and inserted into a new printer, the saved settings on the configuration card are copied to the new printer when it is powered on. The new printer assumes the identity of the old printer, eliminating the need to reconfigure network settings.

This appendix includes:

- [General Information Parameters](#) on page A-2
- [PostScript Parameters](#) on page A-2
- [PCL Parameters](#) on page A-3
- [USB 2.0 Parameters](#) on page A-3
- [Hard Drive Parameters](#) on page A-3
- [Network Information Parameters](#) on page A-3
- [Ethernet Network Parameters](#) on page A-3
- [EtherTalk Parameters](#) on page A-4
- [TCP/IP Parameters](#) on page A-4
- [DNS Parameters](#) on page A-5
- [SLP Parameters](#) on page A-5
- [SSDP Parameters](#) on page A-5
- [NBNS \(WINS\) Parameters](#) on page A-5
- [Access Control Parameter](#) on page A-5
- [LPR Parameters](#) on page A-5
- [AppSocket \(Port 9100\) Parameters](#) on page A-6
- [IPP \(Internet Printing Protocol\) Parameters](#) on page A-6
- [SNMP Parameters](#) on page A-6
- [Embedded Web Server \(HTTP\) Parameters](#) on page A-6
- [FTP Parameters](#) on page A-6
- [Status Notification Parameter](#) on page A-7
- [MaiLinX Remote Printing Parameters](#) on page A-7

General Information Parameters

- Printer Name
- Startup Page Enabled
- Printer ID
- Sys/Start Job
- Job Timeout
- Load Paper Timeout
- Menu Timeout
- Power Saver Timeout
- Intelligent Ready
- Paper Source
- Tray 1 or Tray 1 (MPT)
- Tray 2
- Tray 3
- Tray 4
- Tray 5

Note: The Tray 3, Tray 4, and Tray 5 parameters are only stored on the printer configuration card if the optional trays are available for your printer and installed.

- Tray 1 or Tray 1 (MPT) Mode
- Tray 1 or Tray 1 (MPT) Prompt
- Tray 2 - N Prompt
- Tray 2 - N Mode
- Letter/A4 Substitution
- Two-sided Printing
- Metric Defaults

PostScript Parameters

- Printer Quality
- Color Correction
- Error Info

PCL Parameters

- Font Number
- Pitch
- Point Size
- Symbol Set
- Orientation
- Form Length
- Line Termination
- Color Mode (on color printers)
- PCL Edge to Edge
- Wide A4

USB 2.0 Parameters

- Language
- Wait Timeout

Hard Drive Parameters

The hard drive parameters are only stored on the configuration card if the printer has an internal hard drive.

- Overwrite Deleted Files
- Daily Removal
- Age-based Removal

Network Information Parameters

- Wait Timeout
- Sys Admin Contact
- Printer Location

Ethernet Network Parameters

- Network Speed/Type
- Network Address

Certificates

- Device Certificate
- Friendly Name
- Root Certificate

802.1x

- Enabled
- Disabled

EtherTalk Parameters

- Enabled
- Disabled
- Language
- Filtering
- Name
- Printer Type
- Zone
- Network Node

TCP/IP Parameters

- Enabled
- Disabled
- Host Name
- Host Name Requested
- IP Address
- Network Mask
- Router/Gateway
- DHCP/BOOTP
- IP Address Source
- DDNS
- SMTP Server
- SMTP Reverse Path

DNS Parameters

- Primary Server
- Secondary Server
- Multicast DNS (Bonjour) Enable

SLP Parameters

- Enabled
- Disabled
- Directory Agent Discovery Enable
- Directory Agent
- Scope 1
- Scope 2
- Scope 3
- SLP Multicast Enable
- SLP Multicast TTL
- SLP MTU

SSDP Parameters

- Enabled
- Disabled
- SSDP TTL

NBNS (WINS) Parameters

- Node Type
- WINS Servers

Access Control Parameter

- Host Access List

LPR Parameters

- Enabled
- Disabled
- Filtering
- Enable Banners

AppSocket (Port 9100) Parameters

- Enabled
- Disabled
- Language
- Filtering

IPP (Internet Printing Protocol) Parameters

- Enabled
- Disabled
- Language
- Filtering
- Network Path

SNMP Parameters

- SNMP v1/v2c
- SNMP v3
- Host Access List

Embedded Web Server (HTTP) Parameters

- Enabled
- Disabled
- Custom Link
- Refresh Delay
- Administrator Password
- Key User Password
- Use SSL

FTP Parameters

- Enabled
- Disabled
- Language
- Filtering
- Login Password

Status Notification Parameter

- Disabled
- Enabled
- Sys Admin Email Address
- Service Email Address
- Key User email Address

MaiLinX Remote Printing Parameters

- Language
- Filtering
- POP3 Server
- POP3 User Name
- POP3 Password
- POP3 Polling Interval
- Printing Password
- Authorized Users

B Printer Commands

Printer Control Language (PCL) and Printer Job Language (PJM) commands can be used to control print job settings and printer defaults. In addition to the standard PCL and PJL commands, the Dell printers support additional PCL and PJL commands. This appendix lists the most commonly used standard and additional PCL and PJL commands.

This appendix includes:

- [Additional PCL Commands](#) on page B-2
- [Additional PJL Commands](#) on page B-5

See also:

HP PCL 5 Printer Language Reference Manual for standard PCL commands.

Additional PCL Commands

This section includes:

- [Media Size](#) on page B-2
- [Media Type](#) on page B-3
- [Input Trays](#) on page B-4
- [Output Trays](#) on page B-4

Media Size

The following table lists the most common PCL commands for supported media sizes. For information on which media sizes are supported in your printer, and the trays that support them, print the Paper Tips page from your printer control panel.

Media Size	PCL 5 Command*
A3 (297 x 420 mm)	<Esc>&l27A
A4 (210 x 297 mm)	<Esc>&l26A
A5 (148 x 210 mm)	<Esc>&l25A
A6 (105 x 148 mm)	<Esc>&l24A
B4-JIS (176 x 257 mm)	<Esc>&l46A
B5 Envelope (176 x 250 mm)	<Esc>&l100A
B5-ISO (176 x 257 mm)	<Esc>&l65A
B5-JIS (182 x 257mm)	<Esc>&l45A
SRA3 (320 x 450 mm)	<Esc>&l202A
Statement (5.5 x 8.5 in.)	<Esc>&l15A
Tabloid (11 x 17 in.)	<Esc>&l6A
Tabloid Extra (12 x 18 in.)	<Esc>&l201A
Executive (7.25 x 10.5 in.)	<Esc>&l1A
Letter (8.5 x 11 in.)	<Esc>&l2A
US Folio (8.5 x 13 in.)	<Esc>&l10A
Legal (8.5 x 14 in.)	<Esc>&l3A
A7 Envelope (5.25 x 7.25 in.)	<Esc>&l84A
#10 Commercial Envelope (4.1 x 9.5 in.)	<Esc>&l81A
Monarch Envelope (3.8 x 7.5 in.)	<Esc>&l80A
C4 Envelope (162 x 229 mm)	<Esc>&l93A
C5 Envelope (162 x 229 mm)	<Esc>&l91A

Media Size	PCL 5 Command*
DL Envelope (110 x 220 mm)	<Esc>&l90A
C6 Envelope (114 x 162 mm)	<Esc>&l92A
Choukei 3 Gou	<Esc>&l87A
Choukei 4 Gou	<Esc>&l86A
Custom	<Esc>&l101A

* The character that follows the "&" in the command is the lowercase letter "L."

Media Type

The following table lists the most common PCL commands for supported media types. For information on which media sizes are supported in your printer, and the trays that support them, print the Paper Tips page from your printers control panel.

Media Type	PCL 5 Command
Plain Paper	<Esc>&n6WdPaper
Card Stock	<Esc>&n10WdCardStock
Heavy Plain Paper	<Esc>&n11WdHeavyPaper
Transparency	<Esc>&n13WdTransparency
Thin Card Stock	<Esc>&n14WdThinCardStock
Thick Card Stock	<Esc>&n15WdThickCardStock
Extra Thick Card Stock	<Esc>&20WdExtraThickCardStock
Envelope	<Esc>&n9WdEnvelope
Labels	<Esc>&n6WdLabel
Letterhead	<Esc>&n11WdLetterhead
Glossy Paper	<Esc>&n12WdPaper
Colored Paper	<Esc>&n13WdColoredPaper
Preprinted	<Esc>&n11WdPreprinted
Prepunched	<Esc>&n11WdPrepunched
Custom	<Esc>&n12WdCustomType1 through <Esc>&n12WdCustomType5

Input Trays

The following table lists the most common PCL commands for the input trays supported by your printer. The table also lists the alternate tray used if the optional input tray is not installed.

Note: When more than one command is listed, you can use either command.

Dell 7330		
Input Trays	PCL 5 Command	Alternate Tray
Tray 1	n/a	n/a
Tray 1 (MPT) in multi-sheet mode	<Esc>&l4H <Esc>&l6H	n/a
Tray 1 (MPT) in manual feed mode	<Esc>&l2H <Esc>&l3H	n/a
Tray 2	<Esc>&l11H	n/a
Tray 3	<Esc>&l15H <Esc>&l23H	Tray 2
Tray 4	<Esc>&l18H <Esc>&l20H <Esc>&l24H	Tray 1
Tray 5	<Esc>&l21H	Tray 1
Autoselect	<Esc>&l7H	n/a
Tray 6	<Esc>&l22H	
Current tray/page eject	<Esc>&l0H	n/a

* The character that follows the "&" in the command is the lowercase letter "L."

Output Trays

The following table lists the PCL commands and PJI values for the output trays supported by your printer, if applicable.

Output Tray	PCL 5 Command*	PJI Value
Top output tray	<Esc>&l1G	FACEDOWN, UPPER, STANDARD, or OFFSET

* The character that follows the "&" in the command is the lowercase letter "L."

** The PJI Value is used with the PJI "OUTBIN" variable.

Additional PJJ Commands

The following table lists the most commonly used HP PJJ and additional PJJ commands.

See also:

HP Printer Job Language Technical Reference for the standard set of PJJ commands.

PJJ Command	Values	Description
@PJJ FSDELETE NAME= <i>pathname</i>	*	Deletes a file from the internal hard drive.
@PJJ FSDIRLIST NAME= <i>pathname</i>	*	Lists PJJ system files and directories.
@PJJ FSDOWNLOAD FORMAT: BINARY SIZE= <i>size</i> NAME= <i>pathname</i>	*	Downloads a file to the internal hard drive.
@PJJ FSINIT VOLUME= <i>value</i>	*	Initializes the internal hard drive.
@PJJ FSMKDIR NAME= <i>pathname</i>	*	Creates the specified directory on the internal hard drive.
@PJJ FSUPLOAD NAME= <i>pathname</i>	*	Uploads file from the printer to the host.
@PJJ USTATUS	*	Allows the printer to send unsolicited status messages for device status changes, end-of-job status, and pages printed. Status can be sent at specified time intervals.
@PJJ USTATUSOFF	n/a	Turns off all status responses.
@PJJ FSAPPEND	n/a	Appends data to an existing file, or if the file doesn't exist, creates the file and loads it with the given data.
@PJJ XCLIENTJOBID= <i>value</i>	Exactly 48 bytes (first byte is 8 and the 8 last bytes represent a time in the format <i>hhmmsshs</i>)	Sets the client job ID used with Status Monitor.
@PJJ XJAFILENAME= <i>filename</i>	Roman-8 characters 1-255	Sets the file name for Job Accounting.
@PJJ XJAHOSTNAME= <i>hostname</i>	Roman-8 characters 1-255	Sets the host name for Job Accounting.
@PJJ XJAJOBNAME= <i>jobname</i>	Roman-8 characters 1-255	Sets the job name for Job Accounting.
@PJJ XJAUSERNAME= <i>username</i>	Roman-8 characters 1-255	Sets the user name for Job Accounting.
@PJJ XJOBPASSWORD= <i>value</i>	4-digit string (1-9)	Assigns the job password used by Secure Print.

PJJ Command	Values	Description
@PJJ XPERSONALJOB	n/a	Starts a Personal Print job.
@PJJ XPROOFJOB	n/a	Starts a Proof Print job.
@PJJ XSAVEDJOB	n/a	Starts a Saved Print job.
@PJJ XSECUREJOB	n/a	Starts a Secure Print job.
@PJJ XIGNOREFF	ON, OFF	Ignores FormFeed commands when printing PCL blank pages.
@PJJ XLINETERMINATION= <i>value</i>	ON, OFF	Terminates a line.
@PJJ XMBFSIZE= <i>value</i>	ANY or any supported media size, such as LETTER, STATEMENT, and EXECUTIVE	Sets the media size for Tray 1.
@PJJ XMEDIASOURCE= <i>value</i>	ANY, TRAY <i>n</i>	Sets the media source.
@PJJ XMEDIATYPE= <i>value</i>	ANY or any supported media type, such as PAPER and LABEL	Sets the media type.
@PJJ XPCLTRAYSWITCH= <i>value</i>	ON, OFF	Switches trays when a tray becomes empty. If AutoSelect is chosen as the paper source (tray) in PCL, then tray switching is always active, regardless of the value. When the current tray becomes empty, the printer attempts to switch to another tray containing the same size and type of paper. This command only takes effect when a specific tray, such as Tray 2, is selected in the job. When this command is ON, tray switching still occurs when the tray becomes empty. When this command is OFF, no switching occurs and the user is prompted to load paper.
@PJJ XPCLPAPERSRC <i>x = y</i>	<i>x</i> is 0, 1, 2, 3, 4, 5, 6, 7, 8, 20, 21, 22, 23, which is the number in the <Esc>&l#H tray selection commands <i>y</i> is -1 for AutoSelect, 0 for the current tray (eject page), 1 for Tray 1, 2 for Tray 2, etc., and 99 for the factory defaults	Overrides the tray selected in the <Esc>&l#H PCL tray selection commands.

PJL Command	Values	Description
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* See the *HP Printer Job Language Technical Reference* for the values.

C Acknowledgements

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Version 1.3a

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