Xerox® ColorQube™
8570 / 8870
System Administrator Guide
Guide de l'administrateur système

xerox

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Overview 1

This chapter includes:

Resources

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

Information	Source
*Installation Guide**	Packaged with printer
*Quick Use Guide**	Packaged with printer
User Guide (PDF)*	Packaged with printer (*Software and Documentation disc*)
Video Tutorials	ColorQube 8570 printer www.xerox.com/office/CQ8570docs ColorQube 8570 printer www.xerox.com/office/CQ8870docs
Recommended Media List	ColorQube 8570 printer www.xerox.com/paper (North America) www.xerox.com/europaper (Europe) ColorQube 8870 printer www.xerox.com/paper (North America) www.xerox.com/europaper (Europe)
Online Support Assistant	ColorQube 8570 printer www.xerox.com/office/CQ8570support ColorQube 8870 printer www.xerox.com/office/CQ8570support
PhaserSMART Technical Support	www.phasersmart.com
Technical Support	ColorQube 8570 printer www.xerox.com/office/CQ8570support ColorQube 8870 printer www.xerox.com/office/CQ8870support
Information about menu selection or error messages on the control panel	Control panel **Help** (**?**) button
Information pages	Print from the control panel menu.
*Also available on the Support website.	

PrintingScout Alerts

PrintingScout software is installed with the Xerox print driver. It automatically checks the printer status when a print job is sent. If the printer cannot print a job, PrintingScout displays an alert on your computer screen. Click the alert to view instructions explaining how to fix the problem. PrintingScout provides real-time support to users, eliminating many of the help calls requesting printer support. PrintingScout saves you time for more critical tasks.

PhaserSMART Technical Support

PhaserSMART Technical Support is an automated, Internet-based support system. It uses your default web browser to send diagnostic information from your printer to the Xerox website for analysis. PhaserSMART Technical Support examines the information, diagnoses the problem, and proposes a solution. If the problem is not resolved with the solution, PhaserSMART Technical Support assists you in opening a Service Request with Xerox Customer Support.

PhaserSMART provides support to users, while eliminating many of the help calls requesting printer support. PhaserSMART Technical Support saves you time for more critical tasks.

Accessing PhaserSMART

Use one of the following options to access PhaserSMART Technical Support:
- PrintingScout
- Xerox website
- CentreWare Internet Services (CentreWare IS)
- The print driver
- Xerox Support Centre

Using PrintingScout Software

If PrintingScout 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 a Web Browser

To access PhaserSMART Technical Support from the Web:
1. Open your browser and go to www.phaserSMART.com.
2. Enter your printer IP address in the browser window. For details, see Finding the Printer IP Address on page 17.
3. Follow the instructions on the screen.

Using CentreWare IS

To access PhaserSMART Technical Support from CentreWare IS:
1. Launch your Web browser.
2. Enter your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click the **Support** tab.
4. Select the **PhaserSMART Diagnostic Tool** link.
5. Follow the instructions on the screen.

Using a Windows XP or Windows Server 2003 Print Driver

To access PhaserSMART Technical Support from your print driver:
1. Select **Start > Settings > Printer and Faxes**.
2. Right-click the printer name, and then select **Properties**.
3. Select **Printing Preferences**.
4. Select the **Advanced** tab.
5. Select the **Xerox Web Links** button.
6. Select the **PhaserSMART Technical Support** link.
7. Follow the instructions on the screen.

Using a Windows Vista or Windows Server 2008 Print Driver

To access PhaserSMART Technical Support from your print driver:
1. Select **Start > Control Panel > Printer**.
2. Right-click the printer name, and then select **Properties**.
3. Select **Printing Preferences**.
4. Select the **Advanced** tab.
5. Select the **Xerox Web Links** button.
6. Select the **PhaserSMART Technical Support** link.
7. Follow the instructions on the screen.

Using a Windows 7 Print Driver

To access PhaserSMART Technical Support from your print driver:
1. Select **Start > Control Panel > Devices and Printers**.
2. Right-click the printer name, and then select **Printer Properties**.
3. Select **Preferences**.
4. Select the **Advanced** tab.
5. Select the **Xerox Web Links** button.
6. Select the **PhaserSMART Technical Support** link.
7. Follow the instructions on the screen.

Using a Macintosh OS X 10.4 Print Driver

To access PhaserSMART Technical Support from your print driver:
1. In an application such as TextEdit, select **File > Print**.
2. Click the arrow next to the Printer menu to expand the print dialog if necessary.
3. Select **Troubleshooting** from the **Copies and Pages** menu.
4. Open **System Preferences**, and select **Print & Fax**.
5. Select the **PhaserSMART Technical Support** link.
6. Follow the instructions on the screen.

Using a Macintosh OS X 10.5 or 10.6 Print Driver

To access PhaserSMART Technical Support from your print driver:

1.   In an application such as TextEdit, select **File** > **Print**.
2.   Click the arrow next to the Printer menu to expand the print dialog if necessary.
3.   Select **Troubleshooting** from the **Copies and Pages** menu.
4.   Select the **PhaserSMART Technical Support** link.
5.   Follow the instructions on the screen.

Using the Xerox Support Centre

To access PhaserSMART Technical Support from the Xerox Support Centre:

1.   Select one of the following options:
     - **Windows**: Double-click the **Xerox Support Centre** icon on your desktop.
     - **Macintosh**: Click the **Xerox Support Centre** icon in the dock.
2.   Select your printer from the **Select Printer** drop-down list.
3.   Select the **Solutions** tab.
4.   Select the **Advanced Solutions** link.
5.   Select the **Technical Support** link.
6.   Click the **PhaserSMART** icon.

Xerox Support Centre

See also:

Xerox Support Centre

The Xerox Support Centre provides access to the following information:

- User guides and video tutorials
- Solutions to troubleshooting problems
- Printer and supplies status
- Supplies ordering and recycling
- Answers to frequently asked questions
- Default print driver settings

Xerox Support Centre is available for systems with Windows XP SP1 and later or Mac OS X, version 10.4 and higher. You can install the Xerox Support Centre utility from the Xerox Drivers and Downloads website at www.xerox.com/drivers.

1. Select one of the following options:
   - **Windows**: Double-click the **Xerox Support Centre** icon on your desktop.
   - **Macintosh**: Click the **Xerox Support Centre** icon in the dock.
2. Select your printer from the **Select Printer** drop-down list.

Xerox Support Centre

CentreWare Internet Services

CentreWare Internet Services (CentreWare IS) provides access to the printer embedded Web server. It enables you to easily manage, configure, and monitor network printers using a Web browser on a network computer. CentreWare IS gives administrators access to printer status, configuration, security settings, and diagnostic functions. It also provides access to special printing functions such as printing saved jobs.

CentreWare IS enables you to:

- Check supplies status from your computer, 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 status information and allows you to manage printers independent of network servers and operating systems.
- Configure printers from your computer. CentreWare IS makes it easy to copy settings from one printer to another.
- Set up and use a simple Web-browser-based printing system. Standardized, frequently used documents can be saved as a group with their original driver settings. The documents can then be reprinted from a Web browser. A printer with a hard drive is required to support these functions. In some printer models, a DX configuration is required to support these functions.
- Troubleshoot print-quality problems using built-in diagnostics.
- Define a link to your local Web server support page.
- Access online manuals and technical support information located on the Xerox website.

   Note: CentreWare IS 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 might not function properly.

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

Accessing CentreWare IS

1. Make sure that your printer is turned on.
2. Launch your computer Web browser and then type your printer IP address in the Address field. Do not include "www" before the address. Type the address, separating the groups of numbers by periods.

For details on using CentreWare IS, click the **Help** button in CentreWare IS to go to the CentreWare IS online help.

Finding the Printer IP Address

The printer IP address is required to use CentreWare IS. If you do not know the IP address, print the Configuration page or locate the address on the printer control panel menu.

To print the Configuration page:

1. On the printer control panel, select **Information** and then press the **OK** button.
2. Select **Information Pages > OK**.
3. Select **Configuration Page > OK**.

To view the IP address from the printer control panel:

1. On the printer control panel, select **Information** and then press the **OK** button.
2. Select **Printer Identification > OK**.
3. To view the IP address, select whichever applies:
    - **TCP/IPv4 Address**
    - **TCP/IPv6 Addresses**

Network Installation Features

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This chapter includes:

Using a Startup Network Configuration File

This section includes:
* About the Configuration File on page 20
* Configuration File Requirements on page 20
* Specifying the Location of the Configuration File on page 20

About the Configuration File

You can create a startup network configuration file to configure settings or load fonts, color tables, and job patches. When the printer is turned on or reset, the printer retreives the configuration file from a TFTP server, and processes the file.

Configuration File Requirements

The configuration file must be:
* A valid PostScript or PCL file that contains the appropriate PostScript, PCL, or PJL commands. For a list of additional PCL and PJL commands, see Printer Commands on page 95.
* 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 host name.
  * Use DHCP option 67 to specify the path name 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 CentreWare IS.

Using CentreWare IS

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 host name.
   * In the **Boot File Name** field, type the path name of the configuration file.
4. Click the **Save Changes** button.

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

Print Driver Installation Features

This section includes:
- Installation from the Printer Hard Drive or the Web on page 21
- Global Print Driver on page 21
- Mobile Express Driver on page 22
- Walk-Up Printing Driver on page 22

Installation from the Printer Hard Drive or the Web

If you do not have the *Software and Documentation disc.*, you can install the print driver from the printer hard drive.

> Note: If the printer is connected to the Internet, you can automatically install the driver from the Web.

To install the print driver either from the hard drive or the Web:
1. Launch a Web browser from your computer.
2. Enter your printer IP address in the browser's **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Support**.
4. Select **Software Installation** on the left navigation pane.
5. Select the **Printer Drivers** link.
6. Do one of the following:
- If you are a Windows user, click **Windows Driver Installer** to install the driver, and then click the **Install** button to install the printer.
- If you are a Macintosh user, click **Macintosh Driver Installer** to download the driver.

Auto-Configuring Driver

During installation, the driver identifies the printer configuration and available features , such as automatic 2-sided printing, additional trays, or a hard drive. The controls for settings, such as 2-sided printing, tray selection, and secure printing are displayed or hidden/unavailable, and the mimic displays the correct printer configuration. This driver feature prevents users from making incorrect selections during installation.

Global Print Driver

This driver enables printing from a Windows computer to any Xerox PostScript-enabled printer. It configures itself for your individual printer upon installation. For more information go to www.xerox.com/drivers.

Mobile Express Driver

This driver allows you to print from a Window computer to any Xerox PostScript-enabled printer. It is designed for people who travel to multiple locations and must print to different printers. For more information go to www.xerox.com/drivers.

Walk-Up Printing Driver

The Xerox Walk-Up Printing Driver enables printing from a Window computer to any Xerox PostScript-enabled printer. This is helpful for mobile professionals who travel to multiple locations and need to print to different printers. Instead of installing the print drivers for each printer, you can download this driver from the Web. Although it does not enable access to all printer-specific features, it does enable access to common printing features, such as 2-sided printing.

The driver contains basic features that are common to most of the PostScript-enabled printers, including:

- Portrait, landscape, and rotated landscape orientations
- 1-sided or 2-sided printing
- Single or multiple pages per sheet (including booklet printing)
- Paper or transparency printing
- Page size selection

Walk-Up Installation

The Xerox Installer enables quick and easy installation of the print driver. The installer is included on the *Software and Documentation disc*, supplied with the printer, and is available on the Web. When you run the installer, the main screen lists the Xerox printers of that model discovered on the network or connected using USB. You can choose one of the discovered printers, type in the IP address of the desired printer, or use Walk-Up Technology. If you do not know the IP address of your printer, Walk-Up Technology helps you distinguish it from other printers in the discovered printers list.

To use Walk-Up installation:

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

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

Discovery Protocols

This section includes:

- DNS/WINS on page 23
- Service Location Protocol on page 23
- UPnP on page 24
- WSD (Web Services for Devices) on page 25

DNS/WINS

DNS/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.

> Note: Enabling Dynamic DNS allows the printer to update the DNS server. Only enable Dynamic DNS if your DNS server supports dynamic address updates.

To change the DNS/WINS settings:

1. Launch a Web browser from your computer.
2. Type your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click the **Properties** tab.
4. On the left navigation pane, 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. Modify DNS/WINS settings on the **DNS/WINS Settings** page. Follow the instructions on the page.

> Note: If you are unsure what DNS/WINS addresses are used on your network, see your DNS/WINS server administrator.

9. Click the **Save Changes** button.

For more information, click the **Help** button in CentreWare IS to see the *CentreWare IS Online Help*.

Service Location Protocol

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

1. Launch a Web browser from your computer.
2. Type your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, select the **Protocols** folder.
5. On the left navigation pane, select **SLP**.
6. If prompted, type your Admin or Key User name and password.
7. Under Service Location Protocol (SLP) Settings, in the **SLP Enable** field, select **On** or **Off**.

- **On**: The printer acts as an SLP Service Agent based on the following settings.
- **Off**: The printer does not issue SLP service registrations or respond to SLP requests. The default setting is Off.

8. Next to **Directory Agent Discovery Enable**, select **On** or **Off**.

- **On**:The printer attempts to perform SLP Directory Agent Discovery as specified in the RFC. The default setting is On.
- **Off**: The printer does not attempt to perform SLP Directory Agent Discovery.

9. In the **Directory Agent** field, type the name of the Directory Agent up to 255 characters. Leave the field blank to allow the printer to discover one or more directory agents.

10. In the **Scope 1**, **2**, **3** fields, type the scopes, up to 63 characters each.

    Note: If the Scope 1, 2, 3 fields are empty, and DHCP Option 79 is configured on the DHCP server, the scopes specified in Option 79 are used by the printer.

11. Next to **SLP Multicast Enable**, select **On** or **Off**.

- **On**:The printer uses Multicast to communicate as needed. The default setting is On.
- **Off**: The printer uses Broadcast instead of Multicast to communicate as needed.

12. In the **SLP Multicast TTL** field, type a value from 0 through 255 to specify the multicast radius, often referred to as hop count or time-to-live, for SLP. The default setting is 255.

13. In the **SLP MTU** field, type a value from 484 through 1400 to specify the maximum packet size that can be transmitted for UDP. If packets exceed this size, then TCP/IP is used. The default setting is 1400.

14. Click the **Save Changes** button.

To disable SLP at the printer control panel:

1. Select **Printer Setup > Connection Setup > Network Setup > Network Services**.
2. Use the Down Arrow button to scroll down to **SLP**.
3. Press the **OK** button.

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 a Web browser from your computer.
2. Type your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, select the **Protocols** folder.
5. If prompted, type your Admin or Key User name and password.
6. On the left navigation pane, select **UPnP**.
7. On the **UPnP Settings** page, in the **SSDP Enable** field, select **On** or **Off**:

- **On**: Allows the printer to send and receive SSDP (Simple Device Discovery Protocol) announcements and requests.
- **Off**: The printer does not issue nor respond to SSDP requests.

8. 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 0–255.

9. Click the **Save Changes** button.

To disable UPnP at the printer control panel:

10. Select **Printer Setup** > **Connection Setup** > **Network Setup** > **Network Services**.

11. Use the Down Arrow button to scroll down to **UNPnp**.

12. Press the **OK** button.

WSD (Web Services for Devices)

Web Services for Devices (WSD) is technology from Microsoft that provides a standard method for discovering and using network connected devices. It is supported in Windows Vista and Windows Server 2008 operating systems. WSD is one of several supported communication protocols.

1. Launch a Web browser from your computer.

2. Type your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.

3. Click **Properties**.

4. On the left navigation pane, select the **Protocols** folder.

5. On the left navigation pane, select **WSD**.

6. If prompted, type your Admin or Key User name and password.

7. Select **All WSD Services** to enable All WSD Services on the printer. Clear this check box to make All WSD Services unavailable on the printer.

8. Select **WSD Device Discovery** to enable both WSD Device Discovery and Multicast Discovery. Discovery services advertise the existence of a device on the network. Clear the check box to make WSD Device Discovery and Multicast Discovery unavailable on the printer.

9. Select **Multicast Discovery** to enable Multicast Discovery on the printer. This setting enables the device to be discovered by means of the Multicast protocol. WSD Device Discovery must be enabled to make this check box available for selection. Clear the check box to make Multicast Discovery unavailable on the printer.

10. Select **Xerox Resource Service** to enable Xerox Resource Service on the printer. The print driver uses Xerox Resource Service to acquire information about the printer. Examples include user based color printing permissions, and job type printing permissions. Clear the check box to disable Xerox Resource Service.

11. Select **WSD Print Service** to enable WSD Print Service on the printer. This check box is selected by default. Clear the check box to make WSD Print Service unavailable on the printer.

12. Click the **Save Changes** button.

To disable WSD at the printer control panel:

13. Select **Printer Setup** > **Connection Setup** > **Network Setup** > **Network Services**.

14. Use the Down Arrow button to scroll down to **WSD**.

15. Press the **OK** button.

Network Administration Features

3

This chapter includes:

Printer Neighborhood

Printer Neighborhood is a function in CentreWare IS that enables you to search for printers on your network, check their status, and manage them remotely. You can also install and manage printers, 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 Xerox® 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 might not function properly.

To access Printer Neighborhood:
1. Launch a Web browser from your computer.
2. Type your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. At the top of the page, click the **Printer Neighborhood** button.
   A list of network printers is displayed.

Job Accounting

The printer stores information about print jobs. The log file is stored either in the printer 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. Job accounting is available through CentreWare IS. For more information about the fields supported, click the Help button in CentreWare IS.

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 might provide even less information about the job.

Xerox® recommends that you install a hard drive 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 might be a security risk. 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 CentreWare IS.

Using CentreWare IS to Access Job Accounting

To access job accounting information using CentreWare IS:

1. Launch a Web browser from your computer.
2. Type the printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
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 more information on job accounting, click the **Help** button in CentreWare IS to see the *CentreWare IS Online Help*.

To Enable or Disable Job Accounting

1. Launch a Web browser from your computer.
2. Type the printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click the **Properties** tab.
4. On the left navigation pane, select **Security**.
5. On the left navigation pane 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

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 CentreWare IS. From the Usage Profile Properties page, you can view or print a report. You can also send it to an email address or to users who are specified in the page.

Printing or Viewing a Usage Profile Report

To set up usage profile reporting:

1. Launch a Web browser from your computer.
2. Type the printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click the **Jobs** tab.
4. On the left navigation pane, click the **Usage Profile Reports** link.
5. Click **View Usage Profile** to view the Usage Profile Report.
6. Click **Print Usage Profile** to print the Usage Profile Report.
7. To email the Usage Profile Report:
   a. Select **Send to Specific Address** and type the desired email address in the **Send to Specific Address** field.
   b. Select **Send Regular Interval Reports to Recipients** to send reports to the address specified in the **Send to Specific Address** field at regular intervals. Specify how often reports are sent in the Regular Intervals field on the Usage Profile Properties page.
   c. Click **Send Usage Profile Report**.

   Note: To send usage profile reports, MaiLinX must be configured. See MaiLinX Remote Printing on page 44.

Reading the Usage Profile Report

The Usage Profile Report lists the following information about the printer:

Printer Information: Lists the printer Name, IP Address, Network Address, Serial Number, printer firmware version information, Installed RAM, Power On Count, Power On Impressions, and Activation Date. Activation Date is the date that the printer was first activated or installed.

> Note: A page or impression is a 1-sided printed page, or one side of a sheet.

Billing Meters: Lists the number of Black and Color pages printed, and includes the Total number of pages printed. The number of pages printed for Levels 1–3 are also provided.

Percent Usage by Print-Quality Mode: Lists the percentage of pages printed in each print-quality mode. In addition to the PostScript print-quality modes supported by the printer, information is provided for PCL.

Estimated Coverage: Lists the Imaging Unit Clean Count. Provides percentage estimates of the Average Coverage for each color ink over the life of the printer, and for the Last 30 Days.

Estimated Total Number of Ink Sticks Used: Lists an estimate of the total number of solid inks used for each color.

Maintenance Kit: Lists the Date the current Maintenance Kit was installed, and the Percentage Remaining. Lists the Print Count for the Maintenance Kit, and the Total Number of Maintenance Kits installed over the life of the printer.

Sheet Count by Paper Type: Lists the number of sheets for each type of media used in the printer. The number of 2-sided sheets printed is also provided.

Report Information: Lists the date and time the report was generated, and provides a link to the Usage Profile Reports page. You can access the full Usage Profile Report on this page.

Equivalent Page Counting Details: Lists the number pages used for each media type, and the equivalent number of letter-sized pages.

Xerox Usage Analysis Tool

The Xerox® Usage Analysis Tool enables you to collect and analyze enterprise-wide Xerox® network printer usage data with customizable features:

- **Cost Analysis**: Track printing costs by groups of users or by groups of printers.
- **Print Job Analysis**: Analyze print jobs to review media type, color coverage, paper source, and other job specifics. Plan your next consumable order based on prior usage.
- **Printer Usage Analysis**: Track printer usage patterns to identify printers that are underworked or overused.
- **Reports**: Collect and present printer data in a number of formats with complete transaction and summary reports designed for Excel or other custom billing systems.

    Notes:

    - Job accounting is enabled by default in the printer for the Usage Analysis Tool to be used. If job accounting is disabled, there are no records created in order for the Usage Analysis tool to function.

    - Set the printer date and time to match the date and time of the computer that you install the Usage Analysis Tool on. If the date and time do not match, the Usage Analysis Tool does not automatically pull reports from the printer.

To set the time and date on the printer:

1. Launch a Web browser from your computer.
2. Enter the printer IP address in your browser's **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click the **Index** button.
4. Select **Date and Time**.
5. Set the date and time.
6. Click **Save Changes**.

To enable job accounting:

1. Launch a Web browser from your computer.
2. Enter the printer IP address in your browser's **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. Select the **Security** folder on the left navigation pane.
5. Select **Printer Security Settings**.
6. Under **Job Accounting Record** select **Enabled**.

For information about using the Xerox® Usage Analysis Tool see the help provided with the application.

System Requirements

- IP network
- Xerox® printer with Ethernet interface (optional hard drive recommended)
- Xerox® Usage Analysis Tool client:
  - A Window computer with an Intel Pentium III processor or higher, at least 128 MB of RAM, and at least 500 MB of hard drive space.
  - Operating systems supported: Windows XP SP1 or later.
- Xerox® Usage Analysis Tool server:
  - A Window computer with an Intel Pentium III processor or higher, at least 256 MB of RAM, and at least 1 GB of hard drive space.
  - Operating systems supported: Windows XP SP1 or later.
- Framework: .NET Framework 1.1 (included with the Xerox® Usage Analysis Tool)

Protocol Control

This section includes:
- HTTP on page 35
- TCP/IP on page 36
- Port 9100 on page 38
- LPR on page 39
- IPP on page 40
- Simple Network Management Protocol (SNMP) on page 41
- File Transfer Protocol (FTP) on page 41
- Email Server or SMTP (Simple Mail Transfer Protocol) on page 43
- MaiLinX Remote Printing on page 44
- MaiLinX Alerts on page 45

See also:

Discovery Protocols on page 23

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: Disable protocols that you are not using to prevent 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. To disable HTTP at the printer control panel:
1. Select **Printer Setup** > **Connection Setup** > **Network Setup** > **Network Services**.
2. Use the Down Arrow button to scroll down to **CentreWare IS**.
3. Press the **OK** button.

Note: If you disable HTTP, you cannot access the printer using CentreWare IS.

See also:

HTTP, HTTPS, and SSL/TLS on page 52

TCP/IP

Both IPv4 and IPv6 can be enabled or disabled independently of each other. IPv4 is enabled by default. Changes to this setting become active after you save the changes, and then restart the printer.

Note: If you disable TCP/IP IPv4 and IPv6, you cannot access the printer using CentreWare IS. To reset TCP/IP settings at the control panel, select **Printer Setup** > **Connection Setup** > **Reset Connection Setup**.

To disable TCP/IP at the printer control panel:
1. Select **Printer Setup**.
2. Select **Connection Setup**.
3. Select **Network Setup**.
4. Select **TCP/IPv4 Setup** or **TCP/IPv6 Setup**.
5. Use the Down Arrow button to select **IPv4** or **IPv6**.
6. Press the **OK** button.

To change TCP/IP settings:
1. Launch a Web browser from your computer.
2. Type your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, expand the **Protocols** folder.
5. Select **TCP/IP**.
6. If prompted, type your Admin or Key User name and password.
7. To edit IPv4 Settings, click **TCP/IP (v4)** at the top of the page).
8. To edit IPv6 Settings, click **TCP/IP (v6)** at the top of the page).
9. Change settings as necessary, then click the **Save Changes** button.

IPv4

1. On the TCP/IP (v4) Settings page, select **TCP/IP v4 Enabled** to enable IPv4.
2. Next to **Auto IP Enable** select one of the following:
   - **On**: The printer attempts to assign an IP Address using the Auto IP Protocol. This protocol enables a network device to assign an IP Address to the device when DHCP/BOOTP requests for IP address assignment fail, and the device has no static IP address. The IP address assigned is in the range of 169.254.1.0 to 169.254.254.255. The default setting is On.
   - **Off**: The printer does not use the Auto IP protocol to assign an IP address. This setting is recommended for use on enterprise networks.
3. Next to **BOOTP/DHCP**, select one of the following:
   - **On**: The printer issues BOOTP and DHCP requests on startup. The BOOTP/DHCP server assigns the printer an address.
   - **Off**: The printer does not issue BOOTP or DHCP requests on startup. Select this setting to configure the printer TCP/IP settings manually.

Note: To use the printer with BOOTP, set up a reservation for the printer on the BOOTP server.

4. To configure TCP/IP settings manually, select **Off** next to BOOTP/DHCP, and click **Save Changes**.

   Note: Before assigning a static address, ensure that the address is not used by another device on the network. If another device is assigned the same IP address, the printer will go offline until the conflict is resolved.

5. Next to **IP Address**, type the printer IP address. The format is x.x.x.x, where x represents a number from 0–255. The value entered must be a valid IP address and not 0.0.0.0, 255.255.255.255, or any address starting with 127 or 224–255. The value in this field is overwritten if BOOTP/DHCP is enabled and a BOOTP or DHCP server assigns a value.

6. Next to **Network Mask**, type a number for the Network Mask. The format is x.x.x.x, where x represents a number from 0–255. The value in this field is overwritten if BOOTP/DHCP is enabled and a BOOTP or DHCP server assigns a value.

7. Next to **Router / Gateway Address**, type the gateway host IP address. The gateway is used to retransmit the packets from the current network segment to another network segment. The format for each address is x.x.x.x, where x represents a number from 0–255. The value in this field is overwritten if BOOTP/DHCP is enabled and a BOOTP or DHCP server assigns a value.

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

IPv6

1. On the TCP/IP (v6) Settings page, under General, select **TCP/IP v6 Enabled**.
2. Under **Interface ID**, select an interface ID method. When IPv6 is enabled, the printer has one interface with multiple addresses. The Interface ID is the part of the address after the prefix. The printer uses the Interface ID when assigning both the Link-Local address and automatic addresses that use router supplied prefix. It is not used in addresses supplied by DHCPv6. Nodes use Link-Local addresses to communicate with other nodes on the same local network.

   Select one of the following:

   - **Use interface ID derived from MAC address**: Select this radio button to compute the ID from the MAC address associated with the interface. **Use interface ID derived from MAC address** is the default setting. The ID is different for each device. This setting is recommended.

   - **Use this interface ID**: Select this radio button to enter the Interface ID manually in the provided field. Interface ID must be 64 bits (8 bytes) in length, and must not contain special characters other than colons or valid hexadecimal digits (0–9, a–f, or A–F).

   Note: If you change the Interface ID, you are prompted to reset the printer before the changes take effect.

3. Under **Automatic Address Assignment**, select **Use router supplied prefixes** to enable automatic router address assignment. This check box is selected by default. If this check box is cleared, the printer does not automatically assign itself addresses based on any advertised prefix.

   Addresses can be assigned automatically when a router is found and it offers one or more prefixes. Automatically assigned addresses are routable. Each router supplied prefix is combined with the Interface ID to create an address. The router also provides the preferred and valid lifetime values.

4. Under **DHCPv6**, select one of the following methods:

   - **As directed by the router**: DHCPv6 is performed according to flag values in a router advertisement. **As directed by the router** is the default setting.

- **Always, for all configuration options (stateful)**: Stateful DHCPv6 is always attempted, and router flags related to how to perform DHCP are ignored. If DHCPv6 is successful, configuration options and an IPv6 address are accepted.
- **Always, for all configuration options except address (stateless)**: Stateless DHCPv6 is always attempted, and router flags related to how to perform DHCP are ignored. If DHCPv6 is successful, configuration options are accepted, but an IPv6 address is not assigned.
- **Never**: DHCPv6 is not used even if directed to do so by a router.

5. Under **Manual Address Assignment**, select **Use this address**, and type the IPv6 address and prefix length in the fields provided. The default prefix length is 64.

    A manually entered IPv6 address is used in addition to any other IPv6 addresses. If a manual IPv6 address is provided, it is preferred over DHCPv6, auto-assigned, and self-assigned addresses.

6. Under **Address Precedence**, select **Prefer IPv6 addresses** or **Prefer IPv4 addresses** to set the priority when both IPv6 and IPv4 addresses are available. The default setting is Prefer IPv6 addresses.

7. Click the **Save Changes** button.

TFTP

Trivial File Transfer Protocol (TFTP) helps to configure specific parameters in the printer. TFTP can be used to retrieve a configuration file at startup.

To disable TFTP at the printer control panel:

1. Select **Printer Setup** > **Connection Setup** > **Network Setup** > **Network Services**.
2. Use the Down Arrow button to scroll down to **TFTP**.
3. Push the **OK** button when TFTP is highlighted.

To configure TFTP settings:

1. Launch a Web browser from your computer.
2. Type your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, click the **Protocols** folder.
5. Click **TFTP**.
6. If prompted, type your Admin or Key User name and password.
7. Next to TFTP select **On** to enable TFTP, or **Off** to make TFTP unavailable. The default setting is On.

    Note: If TFTP is used by other devices on your network that you did not configure, Xerox® recommends that you disable TFTP.

8. Next to TFTP Server Name, type a server name up to 63 characters in length.
9. Next to Boot File Name, type a name up to 127 characters in length.
10. Click **Save Changes**.

Port 9100

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

To disable Port 9100 at the printer control panel:

Note: Before turning off Port 9100, ensure that network users do not have print drivers configured to print to Port 9100.

1. Select **Printer Setup** > **Connection Setup** > **Network Setup** > **Network Services**.
2. Use the Down Arrow button to scroll down to **Port 9100**.
3. Push the **OK** button when Port 9100 is highlighted.

To change Port 9100 settings:

1. Launch a Web browser from your computer.
2. Type your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, expand the **Protocols** folder.
5. Select **Port 9100**.
6. If prompted, type your Admin or Key User name and password.
7. In the **Port 9100** field, select **On** or **Off**.
8. Next to **Page Description Language**, select the language you want the printer to receive on the Port 9100 port. If you select **AutoSelect**, the printer automatically senses the language of the print job and processes it accordingly. AutoSelect is the default setting.
9. Next to **Filtering**, select **InterpreterBased** to allow the printer to respond to control characters included in files. **None** is the default setting.
10. 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 disable LPR at the printer control panel:

Note: Before turning off LPR, ensure that network users do not have print drivers configured to print to LPR.

1. Select **Printer Setup** > **Connection Setup** > **Network Setup** > **Network Services**.
2. Use the Down Arrow button to scroll down to **LPR**.
3. Push the **OK** button when LPR is highlighted.

To change LPR settings:

1. Launch a Web browser from your computer.
2. Type your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, select the **Protocols** folder.
5. Select **LPR**.
6. If prompted, type your Admin or Key User name and password.

7.   In the **LPR** field, select **On** or **Off**.

8.   Next to **Banners**, select **On** to print a banner page with each job.

   Note: If you select Off, and banner page printing is set to On at the file server, banners print.

9.   Next to **Filtering**, select **InterpreterBased** to allow the printer to respond to control characters included in files. **None** is the default setting.

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

IPP

Internet Printing Protocol (IPP) is an industry standard protocol for printing and managing print jobs and media sizes. It supports authentication and encryption, making IPP 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 (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 disable IPP at the printer control panel:

   Note: Before turning off IPP, ensure that network users do not have print drivers configured to print to IPP.

1.   Select **Printer Setup** > **Connection Setup** > **Network Setup** > **Network Services**.
2.   Use the Down Arrow button to scroll down to **IPP**.
3.   Push the **OK** button when IPP is highlighted.

To change IPP settings:
1.   Launch a Web browser from your computer.
2.   Type your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3.   Click **Properties**.
4.   On the left navigation pane, select the **Protocols** folder.
5.   Select **IPP**.
6.   If prompted, type your Admin or Key User name and password.
7.   Select **On** or **Off** in the **IPP (Internet Printing Protocol)** field.
8.   Next to **Page Description Language**, select the language you want the printer to receive on the Port 9100 port. If you select **AutoSelect**, the printer automatically senses the language of the print job and processes it accordingly. Autoselect is the default setting.
9.   Next to **Filtering**, select **InterpreterBased** to allow the printer to respond to control characters included in files. **None** is the default setting.
10.   Next to **Authentication Scheme**, select one of the following:
   - **basic**: This scheme requires the printer to authenticate the person sending the print job. The printer only services the request if the name and password provided by the user match the values stored in the printer.

- **digest**: This scheme requires the printer to authenticate the person sending the print job using a single checksum password scheme. The printer only services the request if the name and password provided by the user match the values stored in the printer.

Note: These options comply with IETF standard RFCs for basic and digest authentication, but not all IPP clients support these authentication methods.

11. Next to **User Name**, type the user name for the printer. This field can contain a maximum of 10 characters.
12. Next to **Password**, type the printer password. Type the password again to verify. This field can contain a maximum of 10 characters.
13. Click the **Save Changes** button.

Simple Network Management Protocol (SNMP)

Simple Network Management Protocol (SNMP) is used in network management systems to monitor network-attached devices for conditions that require administrative attention. It consists of a set of standards for network management including an application layer, a database schema, and a set of data objects. Agents, or software modules, reside in the printer SNMPv3 engine. A manager is an SNMPv3 management application such as OpenView, that is used to monitor and configure devices on the network. The agent responds to read (GET) and write (SET) requests from the manager and can also generate alert messages, or Traps, based on certain events.

SNMP settings can be configured in CentreWare IS. You can also enable or disable Authentication Failure Generic Traps on the printer. SNMPv3 can be enabled to create an encrypted channel for secure printer management.

For information on configuring SNMP, see Configuring SNMP on page 77.

File Transfer Protocol (FTP)

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 disable FTP at the printer control panel:
1. Select **Printer Setup > Connection Setup > Network Setup > Network Services**.
2. Use the Down Arrow button to scroll down to **FTP**.
3. Push the **OK** button when FTP is highlighted.

To change FTP settings:
1. Launch a Web browser from your computer.
2. Type your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, expand the **Protocols** folder.
5. Select **FTP**.
6. If prompted, type your Admin or Key User name and password.

7. Select **On** or **Off** in the **FTP** field.

8. Next to **Login Password**, type a password up to 32 characters long.

9. Next to **Page Description Language**, select the language you want the printer to receive on the Port 9100 port. If you select **AutoSelect**, the printer automatically senses the language of the print job and processes it accordingly. Autoselect is the default setting.

10. Next to **Filtering**, select **InterpreterBased** to allow the printer to respond to control characters included in files. **None** is the default setting.

11. Click the **Save Changes** button.

Retrieving the Job Accounting file via HTTP or FTP

To access the job accounting file using 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/Iscommands.

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 CentreWare IS by one of the following methods:
- 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 a Web browser from your computer.
2. Type the printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, select the **Protocols** folder.
5. Select **Email Server**.
6. If prompted, type your Admin or Key User name and password.
7. To identify the SMTP email server automatically, click **Use DNS to Identify SMTP Server (Automatic)**, and type in the **Primary Name Server IP Address** .Type the **Secondary Name Server IP Address** using the 4-byte IP address of the email server.
8. To specify the SMTP email server manually, click **Specify SMTP Server Manually** and type in the information for the email server. 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.
9. (Optional) To specify an email address for returning undeliverable email, type your email address in the **Return Email Address** field.
10. If authentication is required, select the check box next to **Use Authentication**.
11. Type the **User Name** and **Password**. Type the password again to verify.
12. If authentication is required, type the **SMTP Service Name**.

    Note: See your email server administrator if you are unsure about authentication requirements or your SMTP service name.

13. Click the **Save Changes** button.

See also:

> MaiLinX Alerts on page 45
> Usage Profile Reports on page 31

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 Window computer enables users to send print jobs from Windows applications to Xerox® 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.
- A CentreWare IS Printing Service on a Xerox® 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 a Web browser from your computer.
2. Type the printer IP address in the browser **Address** field. For details, see .
3. Click **Properties**.
4. On the left navigation pane, select the **Protocols** folder.
5. Click **Remote Printing**.
6. If prompted, type your Admin or Key User name and password.
7. In the **MaiLinX Remote Printing** field, select **On**.
8. Type the following information about your POP3 server:
   - POP3 Server
   - POP3 Polling Interval
   - POP3 User Name
   - POP3 Password
9. Type the following printer identification information (optional):
   - Printer Name (SNMP System Name)
   - Printer Location (SNMP System Location)
   - Printer Contact (SNMP System Contact)
   - Return Email Address
10. Type the following security information (optional):
    - MaiLinX Remote Printing Password

- Allow MaiLinX Remote Printing Jobs From Users

11. Click the **Save Changes** button.

MaiLinX Alerts

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

- The printer requires attention or when service is needed.
- The printer displays an error, warning, or alert.
- A reply to MaiLinX Remote Printing message is desired.

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

Setting Up MaiLinX Alerts

To enable MaiLinX alerts:

1. Launch a Web browser from your computer.
2. Type the printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, select **Mail Alerts**.
5. If prompted, type 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.

Changing MaiLinX Message Settings

1. On the Mail Alerts page, under Advanced Settings, click the **MaiLinX Message Setttings** link.
2. Type the following information about your printer:
   - Printer Name (SNMP System Name)
   - Printer Location (SNMP System Location)
   - Printer Contact (SNMP System Contact)
3. Type the Subject Text and Message Text for the following email message recipient types:
   - Admin
   - Key User
   - Service

4. Click the **Save Changes** button.

Changing MaiLinX Trigger Settings

1. On the Mail Alerts page, under Advanced Settings, click the **MaiLinX Trigger Settings** link.
2. Select check boxes under each user class for conditions that generate a notification email. The email is sent to users assigned to that user class.
3. Click the **Save Changes** button.

EtherTalk

To change EtherTalk settings:
1. Launch a Web browser from your computer.
2. Type the printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, select the **Protocols** folder.
5. Select **EtherTalk**.
6. If prompted, type your Admin or Key User name and password.
7. In the **EtherTalk** field, select **On** or **Off**.
8. Type the **Printer Name**, up to 32 characters.
9. Type the **Printer Type**, up to 32 characters.
10. Type the **Zone** that the printer is on, up to 32 characters. Null characters cannot be used.
11. Next to **Page Description Language**, select the language you want the printer to receive on the Port 9100 port. If you select **Auto Select**, the printer automatically senses the language of the print job and processes it accordingly. Autos elect is the default setting.
12. Next to **Filtering**, select **Interpreter Based** to allow the printer to respond to control characters included in files. **None** is the default setting.
13. 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. Use CentreWare IS to select the settings you want to clone from one printer to another.

> Note: To use the clone feature, both the Source Printer and Destination Printer must have an IP address, endmost, and default gateway. Both printers must be the same model, and HTTP must be enabled on the Destination Printer.

To clone settings from one printer to another printer using CentreWare IS:

1. Launch a Web browser from your computer.
2. Type your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, select **Clone Printer**.
5. If prompted, type 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:

802.1X	Access Control
Control Panel Lockout	Custom Paper Types
Date and Time	DNS/WINS
Email Server	E-Supplies
EtherTalk	FTP
HTTPS	Information Forwarding
Input Trays	Interfaces
IPP	IPsec
LPR	Mail Alerts
PCL	Port 9100
PostScript	Printer Defaults
Printing Security Settings	Remote Printing
Security	SLP
SNMP	TCP/IP Settings
TCP/IP (v6) Settings	TFTP
UPnP	Usage Profile Properties
Warmup	Web Links

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.

Updating Firmware

Before you begin:

1. Print the Configuration Report to see the current software version.
   a. Use the arrow buttons on the printer control panel to select **Information** and press **Ok**.
   b. Press the Down Arrow button to scroll to the **Information Pages** item and press **Ok**.
   c. Press the Down Arrow button to scroll to the **Configuration Page** item and press **Ok**.
   d. The firmware version appears on the left column on the first page of the Configuration Report under the General Information heading.
   e. Find the current firmware version on the page and compare it to the latest version on the Xerox® support web site. Download the latest firmware from the Xerox® support web site.
2. Restart the printer.
   a. Use the arrow buttons on the printer control panel to select **Shut Down** and then press **Ok**.
   b. Press the Down Arrow button to scroll to **Restart Printer** and press **Ok**.

   Notes:
   - Do not interrupt the firmware installation process. Interruptions or loss of power might corrupt the firmware and render the system temporary unusable. Service repair might be required to return the system to a working condition.
   - After the firmware is updated, some printer settings might be changed to the factory default values. Xerox® recommends that you save the configuration page and use it as a reference to restore printer settings after the firmware update is complete.
   - If the PostScript and PJL Configuration Password is set, you must supply it to update the printer firmware.. For details, see Admin and Key User Accounts on page 52.

Updating the Firmware Over a Network Connection

Note: The printer must be connected to a TCP/IP network.

1. Open the Command Prompt (Windows) or Terminal window (Mac).
2. Type in **ftp xxx.xxx.xxx.xxx**, where the x characters represent the IP Address of the device, and press **Enter**.
3. Press **Enter** when prompted for a user name.
4. At the ftp> prompt, type the full file name and path of the new firmware file. For example, **/location/of/file.ps**.
5. Press **Enter**.The file is transferred to the printer.

Updating the Firmware using CentreWare Internet Services:

1. From a computer, open an Internet web browser.
2. Type the IP Address of the printer in the **Address** field, and then press **Enter**.
3. Click **Print**.
4. Click the **File Download** link in the list of options on the left side of the window.
5. Click **Browse** or **Choose File**, and select the new firmware file.
6. Click on the blue, square button to send the file to the printer.

Updating the Firmware over a USB Connection

To update the firmware on a Window computer:

1. Install the Xerox® File Downloader on your computer.
2. Open the Xerox® File Downloader Utility. By default, the utility is installed at: C:\File Downloader.
3. Select your printer from the the list.
4. Click **Browse** or **Choose File**, and select the new firmware file.
5. Click **Send**.

To update the firmware on a Mac:

1. Open **System Preferences** and double-click **Print & Fax**.
2. Select your printer and click **Open Print Queue**.
3. Drag the firmware file into the print queue window.

Security Features

4

This chapter includes:

Basic Concepts

This section includes:
- Admin and Key User Accounts on page 52
- HTTP, HTTPS, and SSL/TLS on page 52
- Certificates on page 53
- Access Control Lists on page 54

Admin and Key User Accounts

Admin and Key User accounts in CentreWare IS enable you to limit access to specific printer functions by specifying passwords for user classes. CentreWare IS 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 most people who are 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 58

HTTP, HTTPS, and SSL/TLS

Hyper Text Transfer Protocol (HTTP) is used to communicate across the Internet between the printer Web server and the Web browser on client computers. Because the data is transmitted in plain text and passwords are only slightly encrypted, it is not secure.

Secure Hyper Text Transfer Protocol (HTTPS) is a secure version of HTTP. HTTPS provides authentication and encrypted communication to preserve the confidentiality of your data. HTTPS does not use plain text. Instead, HTTPS uses either the Secure Socket Layer (SSL) protocol or the Transport Layer Security (TLS) protocol to encrypt data. Using HTTPS ensures reasonable protection from eavesdroppers and man-in-the-middle attacks.

Before using HTTPS, install 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:

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. It 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 installed. A CA signed device certificate is required to log in to 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 CentreWare IS 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 the owner 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 each browser used to access the printer accepts. The printer Web server is allowed to use HTTPS and encrypt data between the Web browser and the printer. In addition, because each printer certificate is unique, you must load a different certificate into the browser for each printer the browser accesses.

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:

> Managing Certificates on page 56
>
> Configuring SSL on page 57

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 can be configured using CentreWare IS:

- **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 59.
- **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 58.
- **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 58.
- **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 81.

Securing the Printer in a High-Security Environment

If your printer is located in a high-security environment, such as a college or printing kiosk, you can secure the printer fully. If your printer is not located in a high-security environment, you might only need to set up a certificate and then configure SSL to encrypt data including passwords.

To secure a printer fully:

1. In CentreWare IS, set up a certificate. For details, see Managing Certificates on page 56.
2. Select when to use SSL, see Configuring SSL on page 57.

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

3. Select the **Administrator and Key User Settings**. For details, see Configuring Administrator and Key User Settings on page 58.

    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. For details, see Configuring the Print Host Access List on page 59.
5. Enabling the **Hard Drive Overwrite** option. For details, see Securing the Hard Drive on page 62.
6. Set up the removal of Unprinted Personal, Secure, and Proof Print Jobs. For details, see Selecting the Automatic Removal of Secure, Personal, and Proof Jobs Option on page 63.
7. Select the **Jam Recovery** option. For details, see Jam Recovery on page 88.
8. Lock the control panel menus. For details, see Locking the Control Panel Menus on page 76.
9. Configure SNMP. For details, see Configuring SNMP on page 77.
10. Disable unused protocols. For details, see Protocol Control on page 35.
11. Disable **Job Accounting**. For details, see To Enable or Disable Job Accounting on page 29.

    Note: Disable any protocols you are not using to prevent 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 PrintingScout.

Managing Certificates

To modify a self-signed certificate or install a root-signed certificate on the printer:

1. Launch a Web browser from your computer.
2. Enter your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, 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 appear in the **Friendly Name** list. Now you can delete existing certificates or add or create a certificate.

To create a 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 required 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 to be signed. When the certificate is returned, you can 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 CentreWare IS to go to the *CentreWare IS Online Help*.

See also:

   Certificates on page 53

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 CentreWare IS. For more information, see Configuring Administrator and Key User Settings on page 58.

To configure SSL:

1. Launch a Web browser from your computer.
2. Enter your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, 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 CentreWare IS to go to the *CentreWare IS Online Help*.

See also:

Managing Certificates on page 56

Configuring Administrator and Key User Settings

To prevent unauthorized changes to printer settings:

1. Launch a Web browser from your computer.
2. Enter your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, 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. Keep the user name and password 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, 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 cannot 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 CentreWare IS 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 CentreWare IS pages that control printer settings, clear the **View Configuration Web Pages** check box.

10. Type a password to prevent PostScript and PJL commands from making persistent changes to printer settings. A password also prevents PostScript and PJL commands from installing resources such as malicious code on the printer.

    Note: If a PostScript and PJL password is set,you must provide it when updating firmware on the printer.

11. Click the **Save Changes** button.

See also:

Admin and Key User Accounts on page 52

Configuring the Print Host Access List

To prevent unauthorized printing to your printer:

1. Launch a Web browser from your computer.
2. Enter your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, 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, and specify ranges with a hyphen (-). Use an asterisk (*) to represent a group of numbers (for example, 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:

> Access Control Lists on page 54

Access Control

The Access Control function in CentreWare IS enables you to control usage of valuable resources and associated costs as needed. For example, you can restrict color printing via the Availability Permissions settings. You can control paper use via the Tray Permissions settings, and the 2-Sided Printing options for applications.

> Note: Consider the productivity impact of limiting permissions before configuring Access Control settings. For example, some users occasionally need to work late or on weekends.

To change access control settings:

1. Launch a Web browser from your computer.
2. Enter your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, select the **Security** folder.
5. Select **Access Control**.
6. If prompted, type your Admin or Key User name and password.

Access Control Settings

You can set access permissions for users assigned to Group 1 or Group 2. All other users are assigned to the All Other Users group.

> Note: After Access Control settings are configured, if a user attempts to send a restricted job to the printer, the printer deletes the job.

To configure access control settings for a group:

1. At the top of the page, click **Group 1**, **Group 2** or **All Other Users**.
2. To add a user to a group, click **New**, and type the User ID, up to 32 characters in length. The User ID is case-sensitive, and it must be spelled correctly to match the system login name of the user. User ID cannot be blank.

   > Notes:
   >   - The following special characters are not allowed in User Names:" ' & ? + = < > , :
   >   - A maximum of 50 User Names can be added in total for Groups 1 and 2. The New button is unavailable for selection after 50 users are added in any combination to Groups 1 and 2. Printer users are included in the All Other Users group by default, until they are added to Groups 1 or 2.

3. To delete a user from a group, select the check box next to the User ID and click **Delete**.
4. Under **Availability Permissions**, select the **Begin** and **End** times when printing or color printing is allowed for each day of the week.
5. Under **Job Type Permissions**, select **Always Allow** or **Don't Allow** from the drop-down list for each job type. The default setting is Always Allow for all job types. You cannot restrict all job types at the same time. The Job Type Permissions settings are only available in printer configurations with hard drives.

- **Personal Print**: Personal jobs saved to the printer hard drive using the print driver.
- **Secure Print**: Secure jobs saved to the printer hard drive using the print driver.
- **Personal Saved Print**: Jobs that have been saved to the printer hard drive using the print driver.
- **Saved Print**: Shared jobs saved to the printer hard drive using the print driver.
- **All Others**: Other job types including Normal, Proof Print, and Print With.

6. Under **Tray Permissions**, select the paper trays that users are allowed to print from.

   Note: Tray permissions do not apply to previously stored jobs. Access Control settings only apply to stored jobs sent after the creation of tray permissions.

7. Under **Application Permissions**, restrict color printing or all printing by software application, or restrict printing to 2-sided only by software application.

   a. Click **New** to add an application type, and type the application name, up to 32 characters in length. The drop-down list contains the names of software applications that have sent jobs to the printer.

   Notes:
   - A maximum of 10 applications can be added for each group.
   - The application name must be spelled correctly to match the application executable file name.
   - Do not include the suffix .exe on application names, or the following special characters in application names: " ' & ? + = < > , :

   b. Select **Color Allowed**, or **Black Only**, or **No Printing Allowed**.

   c. Select **1-Sided Allowed**, or **2-Sided Only**.

   d. Set application permissions for **All Other Applications**. These settings control jobs that do not originate from the print driver or recognized software applications. Examples are: direct PDF printing, FTP, and file download.

   Note: You cannot restrict all applications to No Printing Allowed at the same time.

   e. To delete an application, select the check box next to the application name and click **Delete**.

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

Securing the Hard Drive

This section includes:

Enabling the Hard Drive Overwrite Security Option

When a file is deleted from the printer 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. DOD5200.28-M is a U.S. Department of Defense three-pass overwriting process. 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, use one of the following methods:

- The printer control panel
- CentreWare IS

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**, then press the **OK** button.
2. Select **File Security**, then press the **OK** button.

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

3. To remove all secure, personal, and proof print job files, select **Overwrite Removals**, 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 CentreWare IS

To select the Hard Drive Overwrite Security option:

1. Launch a Web browser from your computer.
2. Enter the printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, 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 overwrite feature.
   - **Always overwrite when deleting files/jobs**: Sets the printer to 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 if 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 control panel
- CentreWare IS

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**, then press the **OK** button.

2. Select **File Security**, then press the **OK** button.

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

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

   b. Select **Remove At HH:MM**, then press the **OK** button.

   c. Enter the hour 0–23, then press the **OK** button.

   d. Enter the minute, 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**, then press the **OK** button to select **On** or **Off**.
    b. If you selected **On**, select **Remove At Age**, then press the **OK** button.
    c. Enter 1–999 hours, then press the **OK** button. The default setting is 24 hours.

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

Using CentreWare IS

To select the automatic removal of secure, personal, and proof print files from the hard drive:
1. Launch a Web browser from your computer.
2. Enter the printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, 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 Enabling the Hard Drive Overwrite Security Option on page 62.
8. Click the **Save Changes** button.

IPsec

Internet Protocol Security (IPsec) is a group of protocols used to secure Internet Protocol (IP) communications by authenticating and encrypting each IP data packet. It allows you to control IP communication by creating protocol groups, policies, and actions. Secure HTTP (SSL) must be enabled with an installed digital certificate before you can enable IPsec.

To enable IPsec:

1. Launch a Web browser from your computer.
2. Enter your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. On the left navigation pane, select the **Security** folder.
4. On the left navigation pane, select the **IPsec** folder.
5. If prompted, enter your Admin or Key User name and password.
6. On the left navigation pane, select **Security Policies**.
7. Next to IPsec, select **On**.

See also:

> Managing Certificates on page 56
>
> Configuring SSL on page 57

IPsec Policies

IPsec Policies are sets of rules that determine which IP packets are given IPsec protection, and how network traffic is protected. This page enables you to build IPsec Policies based on a combination of the available Host Groups, Protocol Groups, and Actions.

The order in which the IPsec Policies are added is not important. The printer creates the low-level policies from the most specific to the most general. IPsec uses the first applicable rule when deciding the course of action. For example, if three policies are added in the following order:

1. ESP transport for the local subnet
2. Deny all
3. Bypass for a specific IP within the local subnet

The printer organizes the policies in the following order:

1. Bypass for a specific IP in local subnet
2. ESP transport for local subnet
3. Deny all

   Note: Changing IPsec Policies might cause the printer to lose connection with the network. For information on how to re-establish connectivity, see Disabling IPsec at the Control Panel on page 66.

Creating Policies

To configure a new IPsec Policy and add it to the list:

1. On the IPsec Policy page, select a **Host Group**, a **Protocol Group**, and an **Action** from the drop-down lists, then click **Add Policy**.

   If you select default Hosts, Protocols or Actions that are not already configured, pages display that enable you to modify the default groups/actions. In addition, links provided below the drop-down lists enable you to add new groups/actions.

2. After you have configured the list of IPsec Policies, click **Apply** at the bottom of the page to update the IPsec Policy database.

3. Click **Continue** to save the new policies to the IPsec Policy database.

An IPsec Policy of All IP Hosts, System Services and Pass Action is provided by default. A maximum of 100 policies can be configured.

Deleting Policies

To delete an IPsec Policy, select the radio button next to the policy, and click **Delete Policy** in the middle of the page.

Note: Restart the printer after changing or deleting policies to clear existing security association (SA) sessions.

Disabling IPsec at the Control Panel

An incorrectly configured IPsec Policy can make the printer unavailable over the network. If you cannot communicate with the printer, you can turn off IPsec from the printer control panel by performing the following steps:

To disable IPsec at the printer control panel:

1. Select **Printer Setup** > **Connection Setup** > **Network Setup** > **Network Services**.
2. Use the Down Arrow button to scroll down to **IPsec**.
3. Push the **OK** button when IPsec is highlighted.
4. Restart the printer.

   Notes:
   - If the Connection Setup menu is locked on the control panel, a warning message displays. The message allows you to enable a temporary PIN and set a validity period. During this time, you can access the Connection Setup menu using the temporary PIN. If you turn the printer off before the end of the validity period, the count down is suspended. It resumes when you turn the power back on.
   - You can restrict access to the IPsec configuration pages by using the passwords and feature authorization settings on the Administrative Security Settings page. For details, see Admin and Key User Accounts on page 52.

IP Host Groups

This page allows you to create, modify, and delete IP Host Groups. IP Host Groups are a selection of one or more hosts that can be managed as a set by an IPsec Policy. Once an IP Host Group is configured, it is available for selection on the IPsec Policies page. For more information about IPsec, see IPsec Policies on page 65.

Default IP Host Groups include:

- All IP Hosts: This group includes all IPv4 and IPv6 addresses. This group cannot be modified.
- Local Subnet: This group includes all the same IPv4 and IPv6 subnets as the printer. This group cannot be modified.

Creating an IP Host Group

To create a new group:

1. On the IP Hosts Group page, click **Create Group** at the bottom of the page. You can create a maximum of 100 Host Groups.
2. On the Create New Host Group page, next to Group Name, type a name, up to 64 characters.
3. Type a Description, up to 256 characters.

   Note: The name and description cannot contain the following special characters: " ' & ? + = < > / \

4. Next to Address List, type at least one set of network information, up to 512 characters, for the host group in the Address List. Separate entries in the Address List with a single space.

   Note: The Address List cannot contain the following special characters:" ' & ? + = < > , ; \

   A set of network information in the Address List must use the notation shown in the following table:

Address List Example	Meaning
ANY	Enables communication with any network host.
LOCAL	Enables communication with all hosts on the same IPv4 and IPv6 subnets as the printer.
10.1.1.0/255.255.255.0	Enables communication with all hosts on the IPv4 10.1.1.0 subnet.
fe80::/64	Enables communication with all hosts on the IPv6 fe80:: subnet.
10.1.1.1-10.1.1.5	Enables communication with hosts at IPv4 addresses 10.1.1.1 through 10.1.1.5 inclusively.
10.1.1.7	Enables communication with the host at 10.1.1.7.
2002:10:1::f5:1:1-2002:10:1::f5:1:5	Enables communication with hosts at IPv6 addresses 2002:10:1::f5:1:1 through 2002:10:1::f5:1:5.
2002:10:1::f5:1:7	Enables communication with 2002:10:1::f5:1:7

5. Click the **Save Changes** button.

6. Click **Apply** at the bottom of the page to update the IPsec Policy database and save the new policies.

Modifying Host Groups

To view or modify a host group, click the Name of the group. Sort the list of groups by Name or Description by clicking the column titles.

Deleting Groups

To delete a group, select the check box next to the group you want to delete, then click **Delete Group** at the bottom of the page. Any host group that is being used in an IPsec Policy cannot be deleted. 10 groups display per page.

Note: You can restrict access to the IPsec configuration pages by using the passwords and feature authorization settings on the Administrative Security Settings page. For details, see Admin and Key User Accounts on page 52.

IP Protocol Groups

This page enables you to create, modify, and delete IP Protocol Groups. IP Protocol Groups are a selection of one or more known or custom protocols that can be managed as a set by an IPsec Policy. Once an IP Protocol Group is configured, you can select it on the IPsec Policies page. For more information about IPsec, see IPsec Policies on page 65.

Default IP Protocol Groups include:

* **All IP Protocols**: This group includes all IPv4 and IPv6 protocols. This group cannot be modified.
* **Print**: This group includes the standard TCP/IP print protocols, including:
  * IPP
  * LDP (TCP port 515)
  * Port 9100 (AppSocket)
  * Port 9100 Status (AppSocket Status, UDP port 9101)
  * WSD-Print
* **System Services**: This group includes services that are required for normal operation of the printer on your network, including:
  * ICMPv6 (Protocol 58)
  * IGMP (Internet Group Management Protocol)
  * DHCP/BOOTP (UDP ports 67–68)
  * DHCPv6
  * DNS (TCP port 53 and UDP port 53)
  * mDNS
  * mDNS-Responder
  * NATPMP
  * NBNS
  * Printer Discovery

- SLP
- SSDP
- Walk-Up Printing
- Walk-Up Services

Creating Groups

To create a new group:

1. On the IP Protocol Group page, click **Create Group** at the bottom of the page. You can create a maximum of 100 IP Protocol Groups.
2. On the Create New Protocol Group page, next to Group Name, type a name, up to 64 characters.
3. Type a Description, up to 256 characters.

   Note: The name and description cannot contain the following special characters: " ' & ? + = < > / \

4. Under **Protocol**, select at least one of the protocols to add to the group.
5. Click **Save Changes** button.
6. Click **Apply** at the bottom of the page to update the IPsec Policy database and save the new policies.

Modifying IP Protocol Groups

To view or modify a group, click the Name of the group. You can sort the list of groups by Name or Description by clicking the column titles.

   Note: Changing the default ports of any protocol service invalidates rules based on that service.

Deleting IP Protocol Groups

To delete a group, select the check box next to the group and click **Delete Group**. Any protocol group that is being used in an IPsec Policy cannot be deleted.

   Note: You can restrict access to the IPsec configuration pages by using the passwords and feature authorization settings on the Administrative Security Settings page. For details, see Admin and Key User Accounts on page 52.

IPsec Actions

This page enables you to create, modify, and delete IPsec Actions. Once an IPsec Action is configured, it is available for selection on the IPsec Policies page. For more information about IPsec, see IPsec Policies on page 65.

IPsec Actions enable you to do the following:
- **Pass**: Permit network traffic to pass through (unencrypted) to a protocol and address. This default action cannot be deleted.
- **Block**: Drop network traffic and stop communication with a protocol and address. This default action cannot be deleted.
- **Authenticate**: Require IPsec authentication for the selected network traffic.

- **Encrypt**: Require IPsec authentication and encryption for the selected network traffic.

  Note: In order to use X.509 certificates for IPsec authentication, install the certificates from the Manage Certificates page in CentreWare IS before configuring IPsec. **Select Security > Certificates** in the left navigation panel to configure certificates.

Creating IPsec Actions

To create a new action:

1. On the IPsec Actions page, click **Create Action** at the bottom of the page. A series of pages display, which guide you through the process of creating an action. Each page shows your previous entries to make configuration easier. You can create a maximum of 100 IP Actions.

2. To use X.509 certificates for IPsec confguration, install the certificates from the Manage Certificates page before configuring IPsec.

3. Click **Next**.

4. On the Create New Action page, next to Action Name, type a name, up to 64 characters.

5. Type a Description, up to 256 characters.

   Note: The name and description cannot contain the following special characters: " ' & ? + = < > / \

6. Next to **Keying Method**, select **Manual Keying**, or **Internet Key Exchange (IKE)**. IKE is the protocol used to set up a security association (SA) in the IPsec protocol suite.

7. Click **Next**.

Manual Keying

If Manual Keying is selected, configure the following:

1. Next to IPsec Mode, select **Tunnel** or **Transport**. The default setting is Transport.

   - In Tunnel Mode, the entire IP packet (header and payload) is encrypted. Tunnel Mode provides portal-to-portal communications security in which security of packet traffic is provided to multiple machines by a single node. If Tunnel Mode is selected, enter the **Remote Tunnel Address** in the provided field. Remote Tunnel Address can be 40 characters in length maximum.

   - In Transport Mode, only the payload (message) of the IP packet is encrypted. Transport Mode provides end-to-end security of packet traffic in which the end-point computers do the security processing.

2. Under IPsec Proposal Protocol, select Encapsulating Security Payload + Authentication Header (**ESP+AH**), **ESP**, or **AH**. ESP provides IP packet confidentiality to prevent people from determining the packet contents. AH provides a way to check that a packet came from a given source and that it has not been modified in transit. A protocol other than None must be selected.

3. If you select ESP+AH for the IPsec Proposal Protocol, select IPsec Encryption Algorithms to provide confidentiality and Hash Algorithms for authentication and integrity. Select Advanced Encryption Standard CBC (**AES-CBC**), Triple Data Encryption Standard (**3DES**), and Data Encryption Standard (**DES**). Hash Algorithms you can select include **SHA1** and MD5. You must select at least one encryption algorithm and at least one hash algorithm. One pair of Inbound and Outbound SPI is used for ESP, and another pair is used for AH.

4. If you select ESP for the IPsec Proposal Protocol, you can select from the algorithms supported for ESP+AH, **Null Encryption Algorithm** and **None** for Hash Algorithm. You must select at least one

encryption algorithm and at least one hash algorithm. The combination of Null and None is not valid. For ESP, only one pair of Inbound and Outbound SPI are used.

5. If you select AH, Hash Algorithms you can select include **SHA1** and **MD5**. You must select at least one hash algorithm. For AH, only one pair of Inbound and Outbound SPI are used.

6. Next to **Inbound SPI**, change the SPI number to any unsigned 32 bit integer. The Inbound SPI default is 0.

7. Under **Inbound Decryption Key** and **Inbound Authentication Key**, type a hexadecimal value. The Decryption Key must be an exact length for the following algorithms:
    - **AES-CBC**: 32 hexadecimal characters.
    - **3DES**: 48 hexadecimal characters.
    - **DES**: 16 hexadecimal characters.

    Authentication Key must be an exact length for the following algorithms:
    - **SHA1**: 40 hexadecimal characters.
    - **MD5**: 32 hexadecimal characters.

8. Next to **Outbound SPI**, change the SPI number to any unsigned 32 bit integer. The Inbound SPI default is 0.

9. Under **Outbound Encryption Key**, **Outbound Encryption IV** and **Outbound Authentication Key**, type a hexadecimal value. Encryption Key must be an exact length for these algorithms:
    - **AES-CBC**: 32 hexadecimal characters.
    - **3DES**: 48 hexadecimal characters.
    - **DES**: 16 hexadecimal characters.

    Encryption IV is optional. If used, it must be an exact length for these algorithms:
    - **AES-CBC**: 32 hexadecimal characters.
    - **3DES**: 16 hexadecimal characters.
    - **DES**: 16 hexadecimal characters.

    Authentication Key must be an exact length for these algorithms:
    - **SHA1**: 40 hexdecimal characters.
    - **MD5**: 32 hexadecimal characters.

IKE

If IKE is selected, configure the following:

1. On the IKE Phase 1 Configuration Part 1 page, select **X.509 Certificate**, or **Pre-shared Key** as the authentication mehod.
    - For X.509 Certificate, select the **Local Device Certificate** and **Remote Certificate Trust Point** from the list of certificates stored on the device. Certificates that have not been previously configured must be configured for use with IPsec.
    - If Pre-shared Key is selected, type a pass phrase up to128 characters long. The field cannot be blank, and cannot contain the following special characters:" ' & ? + = < > ;

2. Click **Next**.

3. On the IKE Phase 1 Configuration Part 2 page, select at least one IPsec encryption/hash Authentication Transforms for use during IPsec protocol negotiation. A transform describes a security protocol with its corresponding algorithms.

4. Next to **Key Lifetime**, type the lifetime and select **seconds** or kilobytes (**KB**). Kilobytes are based on the amount of network traffic sent over the policy. Seconds are based on when the policy is first connected to. Key Lifetime must be at least 12 seconds or 2560 KB. The default setting is 28800 seconds (8 hours).

5. On the IKE Phase 2 Configuration page, under IKE Phase 2, select **Tunnel** or **Transport** as the **IPsec Mode**. The default setting is Transport.

6. If Tunnel Mode is selected, type the **Remote Tunnel Address** up to 40 characters in length.

7. Under **IPsec Proposal 1**, **2** and **3**, select IPsec encryption/hash pair SA Proposal Protocols for use during IPsec protocol negotiation. Choose None, ESP+AH, ESP, or AH. A proposal is a hashing and encryption method that the printer offers to another device connecting to it, during the setup of an encrypted session. At least one of these proposals must match the proposals of a device that is attempting to connect to the printer. The default setting is None. You must select at least one proposal.

    -   For ESP+AH, select IPsec Encryption Algorithms to provide confidentiality and Hash Algorithms for authentication and integrity. Encryption Algorithms you can select include Advanced Encryption Standard CBC (**AES-CBC 128bit**), Triple Data Encryption Standard (**3DES**), and Data Encryption Standard (**DES**). Hash Algorithms you can select include **SHA1** and **MD5**. You must select at least one encryption algorithm and at least one hash algorithm.

    -   For ESP, in addition to the algorithms supported for ESP+AH, you can select **Null Encryption Algorithm** and **None** for Hash Algorithm. You must select at least one encryption algorithm and at least one hash algorithm. The combination of Null and None is not valid.

    -   For AH, Hash Algorithms you can select **SHA1** and **MD5**. You must select at least one hash algorithm.

8. Select the DH Group. Choose **None** or **Group 2 (1024-bit MODP)**. Diffie-Hellman (DH) groups are used to determine the length of the base prime numbers used during the key exchange process. The cryptographic strength of any key derived depends, in part, on the strength of the DH Group upon which the prime numbers are based. Group 2 provides 1024 bits of keying strength.

9. Next to **Key Lifetime**, type the lifetime and select **seconds** or kilobytes (**KB**). Kilobytes are based on the amount of network traffic sent over the policy. Seconds are based on when the policy is first connected to. Key Lifetime must be at least 12 seconds or 2560 KB. The default setting is 3600 seconds.

10. Click **Next**.

11. Click **Finish**.

12. Click **Apply** at the bottom of the page to update the IPsec Policy database and save the new policies.

Modifying IPsec Actions

To view or modify an action, click the Name of the action. You can sort the list of actions by Name or Description by clicking the column titles.

Deleting IPsec Actions

To delete an action, select the check box next to the action, and click **Delete Action**. Any action that is being used in an IPsec Policy cannot be deleted.

> Note: You can restrict access to the IPsec configuration pages by using the passwords and feature authorization settings on the Administrative Security Settings page. For details, see Admin and Key User Accounts on page 52.

Configuring 802.1X

Introduction to 802.1X and EAP

The 802.1X IEEE standard defines port-based, authenticated network access control for Ethernet local area networks (LANs). In an 802.1X enabled network, the printer accesses the network by successfully authenticating with credentials, such as a name and password. 802.1X uses the Extensible Authentication Protocol (EAP) to relay port access requests between supplicants, authenticators, and 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 avoid vendor lock-in or dead-end technology.

802.1X Configuration in CentreWare IS

Use the 802.1X configuration pages in CentreWare IS to perform the following tasks. Required information varies depending on the EAP methods that you select.

> Note: You can restrict access to the 802.1X configuration pages by using the passwords and feature authorization settings on the Administrative Security Settings page. For details, see Admin and Key User Accounts on page 52.

1. Launch a Web browser from your computer.
2. Enter the printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, 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. the wizard guides you through the setup.

    For more information, click the **Help** button in CentreWare IS to view the *CentreWare IS Online Help*.
6. Select **EAP authentication methods** – Select one or more authentication methods:
    *   MD5 Challenge
    *   TLS
    *   PEAP-MS-CHAPv2 (PEAP)

    If you select TLS or PEAP, you can use a root certificate to validate the authenticating server's certificate.

    If you select TLS , install a signed device certificate that the authenticating server trusts, or install a self-signed certificate to the authenticating server's trusted certificate store.
7. **Install root certificate** – If you select EAP methods 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 methods 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 signed device certificate if one exists.

9. **Enter credentials** – If you select EAP methods that require credentials, specify the user name and password that users must provide.

Locking the Control Panel Menus

To prevent others from changing settings on the printer control panel, you can lock some of the control panel menus.

Use CentreWare IS to lock or unlock the control panel menus:

1. Launch a Web browser from your computer.
2. Enter your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, 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.

⚠️ **CAUTION:** 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. 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 77
- Configuring SNMP v1/v2c on page 78
- Configuring SNMP v3 on page 79
- Configuring the SNMP Access Control List on page 81
- Disabling SNMP on page 82

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 82.

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 CentreWare IS to configure SNMP for maximum security:

1. Launch a Web browser from your computer.
2. Enter the printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click the **Properties** tab.
4. For selecting SSL:
   a. On the left navigation pane, expand the **Security** folder, 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 CentreWare IS SNMP and SSL pages:
    a. On the **Properties** tab, select **Security**.
    b. On the left navigation pane, 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** check box for users as necessary. Clear the **Modify Configuration Web Pages** check box for users as necessary.
6. Configure SNMP v3 by setting up the SNMP Administrative and Key User accounts:
    a. Select the **Protocols** folder on the left navigation pane 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 79, or click the **Help** button in the *CentreWare IS Online Help*.

Configuring SNMP v1/v2c

Configuring SNMP v1/v2c Community Names

To configure SNMP v1v2c community names:
1. Launch a Web browser from your computer.
2. Enter the printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, 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.

    Note: If you are not sure what SNMP settings are used on your network, see your System Administrator.

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:
    *   **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 v1v2c:

1. On the **SNMP Configuration** page: Click the **Configure SNMP v1v2c** button, 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 include Printer Traps, Job Monitoring Traps, Cold Start, and Authentication Traps.

2. Do one of the following:
   - To add traps for SNMP v1v2c, click the **Add Destination** button, then go to Step 3.
   - To edit the settings for a Trap Destination Address, click the corresponding **Edit** button, 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, then enter the IP Address in the fields.

4. To add or edit a Trap Destination DNS Name, click the **DNS Name** radio button, 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: Select at least one trap type.

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 81.

To configure and enable SNMP v3:

1. Launch a Web browser from your computer.
2. Enter the printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, 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 enable SNMP v3, enter a user name or accept the default name **admin**, then click **Create**.
   - To configure the Key User and other account settings, click **Next**.
   - To delete the Administrative User account and disable SNMP v3, click **Delete**.

   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 privileges set for the Key User account.

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. Select **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 Xerox print drivers and PrintingScout. For a complete list of applications disabled, see Disabling SNMP on page 82.

Configuring the SNMP Access Control List

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

1. Launch a Web browser from your computer.
2. Enter your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, 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:

Access Control Lists on page 54

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:

- PrintingScout alerts
- Walk-Up Installer
- Smart Trays
- PhaserSMART
- 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 a Web browser from your computer.
2. Enter your printer IP address in the browser **Address** field. For details, see Finding the Printer IP Address on page 17.
3. Click **Properties**.
4. On the left navigation pane, 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.

Learning Mode

Printers are shipped from the factory in a region free configuration with a starter set of region free ink sticks.

> Note: Region free ink sticks are not available for sale and are only available as a starter set.

When you purchase ink sticks, you receive ink sticks with a stock-keeping unit (SKU) specific to your region. The first time you load regionalized ink, the printer detects the regional SKU by recognizing the unique shape of the ink stick.

The printer configures itself to accept ink sticks only from that region in the future, and the printer is no longer region free.

If you then install a SKU that does not match the printer region, you are instructed to remove the ink stick.

The printer supports the ability to reset via a reset key, delivered either over the network or USB. Contact Xerox Technical Support for assistance at www.xerox.com/support.

> Note: Have your page count and serial number available when you call support.

Finding the Printer Serial Number

1. On the printer control panel, press **Information** > **Printer Identification**.
2. The serial number is displayed.

Security Features

Printing Features

5

This chapter includes:

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:

- **Personal Print**: Prints the job when you select your user name on the control panel or in CentreWare IS. The options from the printer control panel Walk-Up menu are to print & delete, print, or exit. See the *User Guide* for more information about Walk-Up Features.

- **Personal Saved Print**: Stores the job on the hard drive. The job is password protected so you can print it on demand from the control panel or in CentreWare IS. The options from the printer control panel Walk-Up menu are to print & delete, print, or exit. See the *User Guide* for more information about Walk-Up Features.

- **Secure Print**: Prints the job only after you enter the four-digit numeric password on the control panel. The options from the printer control panel Walk-Up menu are to print & delete, print, or exit. See the *User Guide* for more information about Walk-Up Features.

- **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. The options from the printer control panel Walk-Up menu are to print & delete, print, or exit. See the *User Guide* for more information about Walk-Up Features.

- **Saved Job**: 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. The options from the printer control panel Walk-Up menu are to print & delete, print, or exit. See the *User Guide* for more information about Walk-Up Features.

- **Print With**: Prints the current job with existing Saved and Personal Saved jobs that are stored on the printer hard drive. Specify the selection in the **Print With Settings** dialog box when you click the **Print With** button in the print driver. The job is deleted after printing.

Smart Trays

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

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. 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. Jam Recovery allows you to set the printer to begin printing the job from the point where the media jammed. You can also cancel the job completely.

Configuration Card

A

The printer configuration card stores network settings and configuration data. The configuration card is hot swappable, enabling you to share or replace it, providing an alternative to onsite service.

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

This appendix includes:

Configuration Card Parameters

General Information Parameters

- Printer Name
- Startup Page Enabled
- Printer ID
- Sys/Start Job
- Job Timeout
- Load Paper Timeout
- Menu Timeout
- Fast Resume
- Intelligent Ready
- Paper Source
- Tray 1 Size and Type
- Tray 2 Type
- Tray 3 Type
- Tray 4 Type
- Tray 5 Type

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

- Tray 1 Mode
- Tray 1 Prompt
- Tray 2 - N Prompt
- Tray 2 - N Mode
- Letter/A4 Substitution
- 2-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
- Wide A4
- Enhanced Mode

USB 2.0 Parameters

- Enabled
- Language
- Wait Timeout

Hard Drive Parameters

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

- Overwrite Deleted Files
- Daily Removal
- Daily Removal Time
- Removal Age
- 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

EtherTalk Parameters

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

TCP/IP Parameters

IPv4

- Enabled
- Auto IP
- BOOTP/DHCP
- DHCP Server Address
- DHCP Lease Expiration
- DHCP Lease Renewal
- IP Address
- Network Mask
- Router/Gateway

IPv6

- Enabled
- Interface ID
- Automatic Address Assignment
- DHCPv6
- Manual Address Assignment
- Address Precedence

DNS Parameters

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

SLP Parameters

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

SSDP Parameters

- Enabled
- SSDP TTL

NBNS (WINS) Parameters

- Node Type
- WINS Servers

Access Control Parameter

Host Access List

LPR Parameters

- Enabled
- Filtering
- Enable Banners

AppSocket (Port 9100) Parameters

- Enabled
- Language
- Filtering

IPP (Internet Printing Protocol) Parameters

- Enabled
- Language
- Filtering
- Network Path

SNMP Parameters

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

CentreWare IS (HTTP) Parameters

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

FTP Parameters

- Enabled
- Language
- Filtering
- Login Password

Status Notification Parameter

- 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

Printer Commands

Printer Control Language (PCL) and Printer Job Language (PJL) commands can be used to control print job settings and printer defaults. In addition to the standard PCL and PJL commands, Xerox 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 96
- Additional PJL Commands on page 99

See also:

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

Additional PCL Commands

This section includes:

- *Media Size* on page 96
- *Media Type* on page 97
- *Input Trays* on page 98

Media Size

The following table lists the PCL commands for supported media sizes. For information on supported media sizes and trays, print the Paper Tips page from the 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 250 mm)	<Esc>&l100A
B5-JIS (182 x 257mm)	<Esc>&l45A
SRA3 (320 x 450 mm)	<Esc>&l112A
Statement (5.5 x 8.5 in.)	<Esc>&l143A
Tabloid (11 x 17 in.)	<Esc>&l6A
Tabloid Extra (12 x 18 in.)	<Esc>&l148A
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>&l18A
Legal (8.5 x 14 in.)	<Esc>&l3A
A7 Envelope (5.25 x 7.25 in.)	<Esc>&l174A
#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>&l171A
C5 Envelope (162 x 229 mm)	<Esc>&l91A

Media Size	PCL 5 Command*
C6 Envelope (114 x 162 mm)	<Esc>&l170A
DL Envelope (110 x 220 mm)	<Esc>&l90A
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. The following table lists the PCL commands for supported media sizes. For information on supported media sizes and trays, print the Paper Tips page from the printer control panel.

Media Size	PCL 5 Command*
Plain Paper	<Esc>&n6WdPaper
Card Stock	<Esc>&n10WCardStock
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>&n12WdCoatedPaper
Thin Glossy Paper	<Esc>&n16WdThinGlossyPaper
Thick Glossy Paper	<Esc>&n17WdThickGlossyPaper
Colored Paper	<Esc>&n13WdColoredPaper
Preprinted	<Esc>&n11WdPreprinted
Prepunched	<Esc>&n11WdPrepunched
Custom 1 through 5	<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 Alternate Tray is used if the optional input tray is not installed.

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

Input Tray	PCL 5 Command	Alternate Tray
Tray 1	n/a	n/a
Tray 1 in multi-sheet mode	<Esc>&l4H <Esc>&l6H	n/a
Tray 1 in manual feed mode	<Esc>&l2H <Esc>&l3H	n/a
Tray 2	<Esc>&l1H	n/a
Tray 3	<Esc>&l5H <Esc>&l23H	Tray 2
Tray 4	<Esc>&l8H <Esc>&l20H <Esc>&l24H	Tray 1
Tray 5	<Esc>&l21H	Tray 1
Autoselect	<Esc>&l7H	n/a
Current tray/page eject	<Esc>&l0H	n/a
*The character that follows the "&" in the command is the lowercase letter "L."		

Additional PJL Commands

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

See also:

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

PJL Command	Values	Description
@PJL 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.
@PJL FSDELETE NAME="*pathname*"	*	Deletes a file from the internal hard drive.
@PJL FSDIRLIST NAME="*pathname*"	*	Lists PJL system files and directories.
@PJL FSDOWNLOAD FORMAT:BINARY SIZE=*size* NAME="*pathname*"	*	Downloads a file to the internal hard drive.
@PJL FSINIT VOLUME=*value*	*	Initializes the internal hard drive.
@PJL FSMKDIR NAME="*pathname*"	*	Creates the specified directory on the internal hard drive.
@PJL FSQUERY NAME="*pathname*"		Responds with information about the file or directory.
@PJL FSUPLOAD NAME="*pathname*"	*	Uploads file from the printer to the host.
@PJL 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.
@PJL USTATUSOFF	n/a	Turns off all status responses.
@PJL XCLIENTJOBID=*value*	Exactly 48 bytes (first byte is 8 and the 8 last bytes represent a time in the format *hhmmsshs*)	Sets the client job ID used with PrintingScout.
@PJL XJAFILENAME="*filename*"	Roman-8 characters 1–255	Sets the file name for Job Accounting.
@PJL XJAHOSTNAME="*hostname*"	Roman-8 characters 1–255	Sets the file name for Job Accounting.
@PJL XJAJOBNAME="*jobname*"	Roman-8 characters 1–255	Sets the file name for Job Accounting.

PJL Command	Values	Description
@PJL XJAUSERNAME="*username*"	Roman-8 characters 1–255	Sets the file name for Job Accounting.
@PJL XJOBPASSWORD=*value*	4-digits	Assigns the job password used by Secure Print.
@PJL XPERSONALJOB	n/a	Starts a Personal Print job.
@PJL XPROOFJOB	n/a	Starts a Proof Print job.
@PJL XSAVEDJOB	n/a	Starts a Saved Print job.
@PJL XSECUREJOB	n/a	Starts a Secure Print job.
@PJL XIGNOREFF=*value*	ON, OFF	Ignores FormFeed commands when printing PCL blank pages.
@PJL XLINETERMINATION=*value*	ON, OFF	Terminates a line.
@PJL XMBFSIZE=*value*	ANY or any supported media size, such as LETTER, STATEMENT, and EXECUTIVE	Sets the media size for Tray 1.
@PJL XMEDIASOURCE=*value*	ANY, TRAYn	Sets the media source.
@PJL XMEDIATYPE=*value*	ANY or any supported media type, such as PAPER and LABEL	Sets the media type.
@PJL XPCLTRAYSWITCH=*value*	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.

PJL Command	Values	Description
@PJL XPCLPAPERSRC*x = y*	x 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 y 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.
* See the *HP Printer Job Language Technical Reference* for the values.		

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C

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Version 1.3a

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