DocuSP IPS Gateway User's Guide

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1. Getting started

IPS Gateway operates as a feature of the Document Services Printing (DocuSP) software. It enables Xerox DocuPrint 2000 Series 75 EPS and 90 EPS printers to print jobs received from IBM host computers that use IBM's Print Services Facility (PSF) to convert Advanced Function Presentation (AFP) data to Intelligent Printer Data Streams (IPDS).

Instructions for installing, setting up, and using IPS Gateway are provided. Information is intended for users who process jobs through IPS Gateway and for the system administrator responsible for system security and license information.



NOTE: Clicking on the light blue text within the body of this PDF file takes you to the named section or feature.

It is assumed that you:

- Have a working knowledge of a Sun workstation and the Common Desktop Environment (CDE), including how to use a mouse and standard menus and commands
- Know how to open, save, and close files
- Are familiar with SunOS release 5.8 or higher
- Have a basic understanding of the DocuSP software and how your DocuPrint printer operates

Refer to the *DocuSP System Guide* for detailed information about DocuSP and the DocuPrint printer series.

For help with Sun workstation questions, refer to the SunOS/Solaris documentation.

Printing the IPS Gateway User's Guide

English, French, German, and Italian versions of the *IPS Gateway User's Guide* are included in Portable Document Format (PDF) on the installation CD. You can print the *User's Guide* on the Sun workstation or from any PC/workstation using Adobe Acrobat Reader.

To print the *User's Guide* on the Sun workstation:

Step 1. Place the installation CD into the CD-ROM drive.

A window labeled "File Manager - cdrom" appears on the desktop if Volume Manager is running on your workstation.

If a File Manager - cdrom window does not appear automatically on the desktop, Volume Manager is not running. To open a File Manager - cdrom window:

- a. Right-click on the desktop to display the Workspace Menu.
- b. On the Workspace Menu, right-click on **Programs>File Manager** to display the File Manager cdrom window.

If the File Manager window appears instead, select the **File** menu on the File Manager window and then select the **Open CD-ROM** option to display the File Manager - cdrom window.

- **Step 2.** Right-click on one of these icons in the File Manager cdrom window:
 - User_Guide_English.pdf
 - User_Guide_French.pdf
 - User Guide German.pdf
 - User_Guide_Italian.pdf

A menu opens.

- **Step 3.** Select the **Print** option on the menu to open the Print window.
- **Step 4.** On the Print window, enter the name of the queue you want to use in the Printer box and select **Print**.



NOTE: Before selecting Print, check the Extended Options on the Queue Properties window for the specified queue. Ensure that the Paper Stock option is set to either US Letter or A4.

- **Step 5.** Once the *User's Guide* finishes printing, close the File Manager cdrom window.
- **Step 6.** Remove the installation CD from the CD-ROM drive and store it in a secure area.

IPS Gateway overview

IPS Gateway is a feature of the Document Services Printing (DocuSP) system.

IPS Gateway enables the Xerox DocuPrint printer to print jobs received from IBM host computers that use IBM's PSF/AFP/IPDS. IPS Gateway receives IPDS data, formats it as a PostScript print job, and submits it to a print queue established on DocuSP.

IPS Gateway operates as a separate task under the SunOS/Solaris operating system, receiving the IPDS data stream via TCP/IP or channel connectivity.

Printer emulation

IPS Gateway emulates the IBM 3935 Advanced Function Printer.

Host environments

IPS Gateway operates in these IBM PSF operating system environments:

- AIX
- OS/2
- OS/390
- OS/400 (TCP/IP connectivity only)
- VM
- VSE



NOTE: Although PSF/VSE does not support TCP/IP directly, a printing system with an intermediate device running PSF can attach to a PSF/VSE system, and the intermediate device can furnish the TCP/IP support for the printer.

Host connectivity options

IPS Gateway can receive data from a host in one of two ways:

- Through a channel card with bus and tag connectivity
- Through a Token Ring or Ethernet interface using TCP/IP

If you require host connectivity using either a channel or Token Ring interface, contact your local Xerox representative to obtain the additional hardware.

For more information on IBM host connectivity, refer to the IBM 3130, 3160, and 3935 Advanced Function Printers Attachment Configuration Handbook.

The IPDS data stream

All AFP resources (print data sets, page definitions, form definitions, page segments, fonts, and overlays) supported by the emulated printer are supported by IPS Gateway. Additionally, there are several IBM data architectures supported within the AFP environment that are fully supported by IPS Gateway, to the level supported by the emulated printer's capabilities:

- MO:DCA-P: Mixed Object Document Content Architecture for Presentation
- PTOCA PT1 and PT2: Presentation Text Object Content Architecture
- IOCA: Image Object Content Architecture
- GOCA: Graphics Object Content Architecture
- BCOCA: Bar Code Object Content Architecture

Each of the data objects follow the same object rule of containing delimited fields within the structure fields describing each object.

Gateway communications

Simple Network Management Protocol (SNMP) Gateway and TCP/IP Socket Gateway connections are required for running IPS Gateway. Each must be licensed and enabled in DocuSP.

PostScript Decomposer

The PostScript Decomposer is the module that enables PostScript jobs to be printed. This must be licensed and enabled in DocuSP to run IPS Gateway.

IPS Gateway graphical interface

IPS Gateway is a feature of DocuSP with a window similar in design to the DocuSP window. IPS Gateway provides drop-down menus, tabs, and icons. Windows, tabs, and menus are used for specifying print job parameters, displaying messages, and performing system administration and trace functions.

Display language

IPS Gateway is provided in four languages: English, French, German, and Italian. You are prompted to choose the user interface (UI) language during installation of the IPS Gateway software. To change the language, you must reinstall the software.

Processing considerations

Note the considerations in this section before installing and setting up IPS Gateway.

Media selection

IPS Gateway allows you to map trays (specified by AFP/IPDS resources within the host application) to the physical media available in the printer. The Media Setup tab in IPS Gateway allows you to associate each logical IPDS (host) tray with a physical media definition in the printer. See "Media Setup tab" for instructions on defining and mapping media.

Spooling versus streaming queue

You can define the IPS Gateway queue as either a spooling queue or a streaming queue. To determine the best setting for your printing environment, review the sections below and the "Segmentation" section.

Spooling queue

A spooling queue completely spools an IPDS job from IPS Gateway to the DocuSP queue before printing begins. This results in a delay between the submission of the job and the printing of the first page. The delay may be significant for large jobs.

To help improve processing and print time for large jobs sent to a spooled queue, IPS Gateway provides the Segmentation option, which segments large jobs into multiple smaller jobs.

For normal job processing, job segmentation should be disabled. However, Xerox recommends using job segmentation when using a spooled queue for any job over 500 pages. Although possible within the software setup, segmentation to a streaming queue is not necessary since pages are printed as soon as they are received.

Because only one streaming queue can be active at a given time (depending on your other printing applications), you may elect to run IPS Gateway to a spooled queue.

Streaming queue

A streaming queue prints pages as they are received, which results in minimal delay between the time the job is submitted and when printing begins.

Only one streaming queue can be active in DocuSP at a given time. If a non-IPS Gateway streaming queue is active when IPS Gateway submits a job to its streaming queue on DocuSP, IPS Gateway stops processing and posts an "IPDS Not Ready" message until the other streaming queue has completed.

Streaming offers a benefit of being more reliable in the area of IPDS job recovery. See "IPDS job recovery" for more information.

IPDS job recovery

In order to understand IPDS job recovery (the completion of an IPDS job after a fault condition), it is important to understand that IPS Gateway marks pages as committed/stacked once they are successfully written to the DocuSP queue socket connection. If the segmentation feature is in use, IPS Gateway marks all the pages in the segment as committed/stacked once the last page in that segment is written to the socket. At this point, the IPDS host considers the pages printed and DocuSP is responsible for printing all pages in the job. The IPDS host software is responsible for recovering up to the last page reported as stacked by IPS Gateway. Therefore, the combination of host recovery and DocuSP recovery is designed to ensure the integrity of each IPDS job when standard printer problems (such as paper jams or supply shortages) occur.

If there is an unexpected or catastrophic error (such as a power failure, operating system crash, or unrecoverable software problem) in either DocuSP or IPS Gateway, IPDS job recovery depends on whether you are using a spooled or streaming queue for printing IPS Gateway jobs.

Whether you are using spooling or streaming queues, jobs (or segments) written in their entirety to the DocuSP queue are recoverable by DocuSP after a DocuSP restart or system boot.

If an unexpected error occurs during the time that IPS Gateway is processing a job and writing pages to the DocuSP queue socket, pages written to a streaming queue will be recoverable by DocuSP. However, when a spooling queue is in use, jobs or segments partially written to the DocuSP queue are not recoverable.

In both cases, pages being processed by IPS Gateway but not yet written to the DocuSP queue are recoverable from the host, which typically resumes printing from the last checkpoint/restart page (see your PSF documentation for more information).

Xerox recommends using a streaming queue without segmentation to optimize IPDS job recovery.

Segmentation

Before specifying job segmentation, review the job processing considerations described below.

Spooled versus streaming queue

Segmentation is meant to be used with a spooling queue (not a streaming queue). When using a spooled queue, IPS Gateway normally requires that the entire IPDS data stream be received prior to processing and releasing the data stream to the printer. Segmentation creates a series of small jobs, allowing the printer to begin printing as soon as the specified number of pages is received.

Although it is possible to specify segmentation for a streaming queue, it is not necessary since a streaming queue provides shorter job processing and print time, and segmentation lengthens the print time.

First In/First Out (FIFO)

The IPS Gateway installation software enables the DocuSP First In/First Out (FIFO) feature. Enabling FIFO ensures that segmented jobs are printed in segment sequence by the printer. However, if the printer uses multiple print queues, all queues use FIFO. Therefore, if you segment a large job into multiple smaller jobs, your output may be interleaved with jobs submitted to other queues on the printer.

If the segment order of the output for a segmented job appears to be incorrect, check the FIFO Job Scheduling setting. An intermittent DocuSP problem has been observed where the FIFO Job Scheduling setting has been changed to "off" for no apparent reason. See the *DocuSP System Guide* for instructions to verify and change the FIFO Job Scheduling setting.

Banner pages

If you enable job segmentation and your printer is set up to generate a banner page for each job, then the printer generates a banner page each time a segment of the job is printed. To prevent banner pages from printing between each segment, turn off the Banner Page option; refer to the *DocuSP System Guide* for instructions.

Offset stacking for unfinished jobs

If you enable job segmentation and your printer is set up to use the Offset Stacking option for unfinished jobs, then the printer offsets the stack of pages each time a segment of a job is printed. To prevent offset stacking for each segment of a job, disable the Offset Stacking option. Refer to the DocuSP System Guide for instructions.



NOTE: If you disable Offset Stacking, no jobs will be stacked offset.

Customer job accounting

When using job segmentation, the printer tracks each segment as a separate job in the Customer Accounting Log. For example, if you have a 5000 page job and specify a value of 50 in the Segmentation option, the printer records 100 entries in the Customer Accounting Log.

If the Customer Accounting Log reaches the maximum log size value, the oldest record is deleted for each new record added. The minimum log size is 282 and the maximum size is 1000. The log is set to a default of 400 entries at DocuSP installation.

Because job segmentation can cause the log to fill up, you may want to print or export the log data more frequently if your site uses the data for billing purposes.

Before using segmentation, review the log size for your printer and increase the value, if necessary, to help ensure that the log does not fill. You must be logged onto the printer as System Administrator to make any changes to the log size.

To change the log size:

- Step 1. Select the **Administration** icon from the DocuSP window, then select the **Accounting** tab.
- **Step 2.** In the Accounting tab, select **Options** to display the Accounting Options window.
- **Step 3.** In the Logging area, specify the desired maximum log size.

Resolution and performance

IPS Gateway allows documents to be printed at either 300 or 600 dots per inch (dpi) using the Output Resolution option. See "IPDS Setup tab" and "Output Setup tab" for instructions on setting resolution.

Selecting 600 dpi output may improve print quality but may reduce system throughput for complex applications that require scaling.



NOTE: Ensure that the output resolution on the IPDS Setup tab in IPS Gateway matches the resolution on the PostScript/PDF tab under the queue properties in DocuSP. Otherwise, performance may be impacted.

Specifying margins

When migrating applications from other Xerox or IBM IPDS devices, there may be small differences in page positioning due to differences in the imaging hardware.

Use the Image Shift option in DocuSP to make small adjustments to the page image position, for example to match pre-printed forms. Refer to the DocuSP System Guide for information on shifting images.

Gray scale printing

Gray scale printing through IPS Gateway may appear different than that of the IBM IPDS printer being emulated.

Printer error reporting

All IPS Gateway error conditions (such as "Not authorized" and "IPDS Not Ready") and detected printer error conditions (such as "Out of Paper" and "Printer Door Open") are reported to the host as "printer-not-ready" intervention required exceptions. For example, if the printer is in a "Printer needs attention" state, IPS Gateway presents the printer-not-ready exception to the host, preventing the host from sending additional pages until the printer is operational again.

Specifying edge treatment

The DocuSP Edge Treatment option lightens the leading edge of a sheet to prevent too much toner from being placed on that edge, which may cause printer jams. The default setting for this option is On. If the IPDS job being printed requires data on the leading edge of the page, you may want to turn edge treatment off, provided the density of the output along that edge is not excessive. For more information on the Edge Treatment option, refer to the *DocuSP System Guide*.

To switch edge treatment off:

- Step 1. Select Switches from the Printer menu on the DocuSP window.
- **Step 2.** On the Switches window, select **Off** under Edge Treatment, then click **OK** to close the window.
- **Step 3.** Close the Printer Manager window.

2. Installation and setup

The requirements and instructions for installing the IPS Gateway software and setting up the printing environment are documented below. Review this entire section before proceeding with the installation. Instructions for removing the IPS Gateway software are also included.

Some setup tasks are performed on the DocuSP window and some are performed on the IPS Gateway window. The main installation and setup tasks are:

- Installing the software
- Verifying access and establishing passwords
- Licensing and configuring the software and features
- Defining the IPS Gateway queue
- Setting the TCP/IP Socket Gateway port number in DocuSP
- Setting up media
- Loading IBM AFP resident outline fonts
- Defining a logical printer
- Verifying the installation

Requirements

This section describes IPS Gateway installation and software licensing requirements.

Installation requirements

The following hardware and software is required to install IPS Gateway:

- 650 MHz Sun Blade™ workstation with 512MB of memory
- One of these Xerox printers:
 - DocuPrint 2000 Series 75 EPS
 - DocuPrint 2000 Series 90 EPS
- DocuSP, version 3.5 or higher

IPS Gateway does not require any printer memory in addition to that already installed on your DocuPrint printer.

If your IPDS configuration requires a channel connection, you will need an online channel board. Contact your local Xerox representative for more information.

Licensing requirements

This feature must be licensed in IPS Gateway for IPS Gateway to function:

IPS/NPS

These features must be activated and enabled in DocuSP for IPS Gateway to function:

- IPS Gateway
- PostScript Decomposer
- SNMP Gateway
- TCP/IP Socket Gateway

Licenses are provided by your local Xerox representative prior to installation. The license string and expiration date for each are entered immediately following the software installation.

Contents of the installation CD

The installation CD contains the files identified in the table below. None of these files are copied to the printer controller disk as part of the installation; access the PDF files and readme.txt file from the CD.

View the PDF versions of the *IPS Gateway User's Guide* on any system using Adobe Acrobat Reader. If not already installed, the latest version of Acrobat Reader can be downloaded at no cost from Adobe Systems Incorporated's web site at: http://www.adobe.com.

File	Contents
install.sh	This script file contains the installation program for the IPS Gateway software.
readme.txt	This text file contains a description of the files on the CD and instructions for printing the <i>IPS Gateway User's Guide</i> . It also contains instructions for installing and removing the IPS Gateway software.
uninstall.sh	This script file contains a program to remove the IPS Gateway software.
User_Guide_English.pdf	This PDF file contains the English version of the IPS Gateway User's Guide.
User_Guide_French.pdf	This PDF file contains the French version of the <i>IPS Gateway User's Guide</i> .
User_Guide_German.pdf	This PDF file contains the German version of the <i>IPS Gateway User's Guide</i> .
User_Guide_Italian.pdf	This PDF file contains the Italian version of the IPS Gateway User's Guide.
IPSGwPkgs.tar.Z	This compressed tar file contains the IPS Gateway software.

Installing the software

This section provides instructions for installing IPS Gateway on a DocuPrint controller workstation. The installation program removes any previously installed version of this software before it installs the new version.



NOTE: If installing over any version of IPS Gateway, document your IPS Gateway settings and passwords. They will not be saved when the software is removed.

To install the IPS Gateway software:

- **Step 1.** Place the IPS Gateway CD into the CD-ROM drive.
- Step 2. If Volume Manager is running on your workstation, a window labeled "File Manager cdrom" appears on the desktop. Close the File Manager cdrom window.
- **Step 3.** Open a terminal window and change to this directory, or to wherever your CD-ROM directory resides, by entering this command:

cd /cdrom/cdrom0

Step 4. Enter this command to start the installation program:

./install.sh

- **Step 5.** You are asked if you want to continue with the installation. Enter **y** to continue with the installation or **n** to cancel the installation procedure.
 - If you enter "n," the installation stops and you are returned to a command prompt on the terminal window. IPS Gateway is not installed.
- **Step 6.** When prompted, enter the root password.
- **Step 7.** If a previous version of the software is installed, the program asks you to confirm that you want to remove the currently installed version. Enter **y** to remove the previous version and install the new version. The program begins installing the IPS Gateway packages.



NOTE: Any previous IPS/NPS license is retained in the newly installed version.

If you enter "n," the installation stops and you are returned to a command prompt on the terminal window. The new version of IPS Gateway is not installed.

Step 8. After the IPS Gateway packages are successfully installed, you are asked to choose the language for the IPS Gateway user interface. Enter 1 for English, 2 for French, 3 for German, or 4 for Italian.



NOTE: To change the language of the IPS Gateway user interface, reinstall the IPS Gateway software.

Step 9. A message appears on the terminal window indicating that the installation of IPS Gateway is complete. You are prompted to reboot your workstation. Enter **y** for the installation program to reboot your workstation or **n** to end the installation.

If you enter "n," IPS Gateway installation is not complete until you reboot your workstation. Refer to the *DocuSP System Guide* for system reboot procedures.

Step 10. Remove the installation CD and store it in a secure area. The IPS Gateway software is installed.

IPS Gateway is not accessible through the DocuSP menu until the IPS Gateway feature license is activated and DocuSP is restarted.

Verifying access and establishing passwords

When IPS Gateway is first installed, the default user access level is Walk Up User. The initial passwords are:

- Trusted User: trust
- System Administrator: administ

Passwords are case-sensitive.

If the installation is being performed by a Xerox Customer Services Analyst or Engineer, ensure that your system administrator has access to IPS Gateway before the analyst or engineer leaves the site. Your system administrator should also change the initial passwords for security reasons; to do this, follow the procedure in "Changing passwords."

User access levels

There are three user levels available to access IPS Gateway, each with its own level of feature access.

Walk Up User

The Walk Up User has limited access rights to IPS Gateway. This is the access level assigned when IPS Gateway is first started. The Walk Up User can do the following:

- Log on to IPS Gateway
- · Access the Help facility
- Pause and resume IPS printing
- Minimize the IPS Gateway window

This user cannot change any IPS Gateway settings.

Trusted User

The Trusted User requires a password and can perform the same functions as the Walk Up User. Additionally, the Trusted User can:

- Change and save IPS Gateway settings
- Use the diagnostic functions
- Exit IPS Gateway

System Administrator

The System Administrator requires a password and can perform the same functions as the Trusted User. Additionally, the System Administrator can:

- Change passwords
- Enter and change software licenses

Licensing and configuring the software and features

This section provides instructions for licensing and configuring these features/functions:

- IPS Gateway
- PostScript Decomposer
- SNMP Gateway
- TCP/IP Socket Gateway
- · DocuSP VPS option
- IPS/NPS



NOTE: After licensing/configuring the first five features in the bulleted list above, you must restart DocuSP to enable the features before licensing the IPS/NPS software.

Licensing and enabling IPS Gateway

When IPS Gateway is installed, it is added to the DocuSP list of features available for licensing and use. Until a valid license string and expiration date are entered, IPS Gateway cannot be started.

To license IPS Gateway:

- **Step 1.** Log on to DocuSP as System Administrator using the **Logon** option on the System menu.
- Step 2. From the Setup menu, click **Feature Licenses** and then double-click the **IPS Gateway** feature option.
- **Step 3.** On the Properties window enter the software license string and expiration date for IPS Gateway.
- **Step 4.** In the License area, select **Activate**.
- **Step 5.** In the Feature area, select **Enable** and click **OK**.

Licensing and enabling the PostScript Decomposer

The PostScript Decomposer is the module that enables PostScript jobs to be printed. The PostScript Decomposer must be both licensed and enabled in DocuSP for IPS Gateway to function. Refer to the *DocuSP System Guide* for instructions.

Licensing and enabling the SNMP Gateway

The SNMP Gateway provides the means to access available media selections as well as printer status reporting to the host. SNMP allows IPS Gateway to provide a status indication when the printer is not ready to receive data from the host due to a standard printer error condition, such as the printer being out of paper.

The SNMP Gateway license feature must be valid and enabled in DocuSP for IPS Gateway to function. Refer to the *DocuSP System Guide* for licensing instructions.

To enable the SNMP Gateway:

- **Step 1.** On the DocuSP window, log on as Trusted User or System Administrator.
- Step 2. Select Gateways from the Setup menu.
- Step 3. Select the SNMP tab.
- Step 4. Verify that the Read Community String value is public, which is the default.
- Step 5. Select the Enabled box.
- Step 6. Click OK to save the settings.

Licensing and configuring TCP/IP Socket Gateway

A TCP/IP socket connection is required for IPS Gateway to submit print jobs to the DocuSP queue. The TCP/IP Socket Gateway must be both licensed and enabled in DocuSP for IPS Gateway to function. Refer to the DocuSP System Guide for instructions.

Setting the DocuSP VPS option

The DocuSP VPS option must be set to NONVPS for the IPS Gateway software to function properly.



CAUTION: If you keep the default setting of **VPS**, you will experience problems with your print jobs.

The VTAM Printer Support (VPS) option allows you to configure the ports of the TCP/IP Socket Gateway to either remove the echo commands (VPS) or leave the data unaltered (NONVPS). This option defaults to VPS. Reset this option to NONVPS each time you install or upgrade DocuSP; refer to the *DocuSP System Guide* for instructions.

Licensing and enabling IPS/NPS

You must restart DocuSP and start IPS Gateway before licensing and enabling the IPS/NPS software.

Restart DocuSP by selecting **Restart** from the System menu on the DocuSP window. Then start IPS Gateway by selecting **IPS Gateway** from the System menu on the DocuSP window. (The IPS Gateway window opens in Walk Up User mode.)

To license the IPS/NPS software (XRX_IPS_NPS_software):

- **Step 1.** Log on to IPS Gateway as a System Administrator using the **Logon** option on the System menu. The initial password is **administ**; passwords are case-sensitive.
- **Step 2.** From the Setup menu, choose the **License** option.
- **Step 3.** Enter your software license string and expiration date for the XRX_IPS_NPS_software feature and click **OK**.
- Step 4. A window opens stating that the license has been validated. Click OK.

Defining the IPS Gateway queue

This section provides instructions on:

- Naming a printer queue on DocuSP to receive the PostScript file generated by IPS Gateway
- Defining the queue as either a spooling or a streaming queue

To define the queue:

- Step 1. On the DocuSP window, log on as Trusted User or System Administrator.
- Step 2. Select the Queue Manager icon.
- Step 3. In the lower right corner of the Queue Manager window, select **New Queue** to display the New Queue window.
- **Step 4.** In the Queue area of the New Queue window, enter the Queue Name to be used for IPS Gateway jobs.
- **Step 5.** In the Input area, choose **Streaming** or **Spooling** for the queue type. See "Spooling versus streaming queue" for more information.
- **Step 6.** Leave all other parameters as the defaults. Click **Add** to add the queue, then **Close** to close the New Queue window.

Managing the print queue

The IPDS data streams processed by IPS Gateway are sent to the IPS Gateway print queue established on DocuSP. Use the Queue Manager on the DocuSP window to view the queue and to manage and release jobs sent from IPS Gateway. For more information on how to use the Queue Manager, refer to the *DocuSP System Guide*.

Setting the TCP/IP Socket Gateway port number in DocuSP

A TCP/IP socket connection is required for IPS Gateway to submit print jobs to the DocuSP queue. This socket connection (or port) value must be associated with the DocuSP queue created for IPS Gateway.

To associate the port value:

- **Step 1.** On the DocuSP window, log on as Trusted User or System Administrator.
- Step 2. Select Gateways from the Setup menu.
- Step 3. Select the Socket tab.
- **Step 4.** Double-click the first or second row to define the port to be used for IPS Gateway printing. The Socket Properties window opens.
- Step 5. In the Port Number drop-down box, specify the port number you will specify in IPS Gateway for the TCP/IP Socket Gateway connection. The port number specified cannot be used for any other DocuSP or IPS Gateway connection. The default value in IPS Gateway to 9100.
- **Step 6.** In the **Select Queue** drop-down box, specify the name of the queue you created on DocuSP for IPS Gateway. Click **OK** to return to the Socket tab.
- **Step 7.** Select the same row as above, right-click, and select **Enable**.
- **Step 8.** Click **OK** to save your settings.

Setting up media

In DocuSP, you must define the media using the Printer Manager, assign each media definition to a specific physical printer tray, and load the media in the trays.

These media definitions are communicated to IPS Gateway for mapping to IPDS trays through the Media Setup tab. In IPS Gateway you will map a specific media definition to each IPDS Tray Selection Value expected from the IPDS data stream.

Each media definition includes these attributes:

- Size
- Type
- Color
- Weight

Setting up media in DocuSP

In DocuSP, define and load the following media in order to run the installation verification jobs provided with IPS Gateway:

- US Letter (any tray)
- A4 (any tray)

Refer to the *DocuSP System Guide* for instructions on defining media in DocuSP.

Setting stock name preferences in DocuSP

The DocuSP stock name preferences settings must be changed to **Allow duplicate names** for DocuSP to honor IPS Gateway media definitions. When IPS Gateway submits a job, the job submission uses the paper size, type, weight, and color.

If the Allow duplicate names setting is not set, DocuSP forces each stock name to be unique within the Program Manager, causing jobs to go ineligible. By allowing duplicate names, DocuSP ignores stock names and selects the media based on the size, type, color, and weight specified.

To set the Allow duplicate names setting in DocuSP:

- Step 1. Select Preferences from the Setup menu.
- Step 2. Select the Stocks and Trays tab.
- **Step 3.** In the Stock Names area, select **Allow duplicate names** and click **OK**. A message stating DocuSP must be restarted displays.
- Step 4. Select either Auto Generate Name Extension or Manually Generate Name Extension.
- **Step 5.** Click **OK** and then restart DocuSP.

Loading IBM AFP resident outline fonts

IPS Gateway provides the ability to load and use printer-resident AFP scalable outline fonts. These fonts are loaded from the IBM AFP font collection CD, which is purchased separately. The AFP font collection product number for AIX and OS/2 is 5648-B45.



NOTE: The AFP font collection product number for AIX and OS/2 changed from 5648-113 to 5648-B45. IPS Gateway supports both of these product numbers (both CDs contain the correct set of fonts).

Fonts are converted for use with IPDS jobs and stored on the printer when they are loaded. Although they reside on the printer, they cannot be viewed using the DocuSP Font Manager. A sample job is provided to verify that resident outline font support is properly installed on the printer controller. (To remove the fonts, see "Removing resident outline fonts.")

A default resident outline font is provided for instances where the requested AFP font is not resident or the default is specifically requested. This default font cannot be changed.

Enhanced Font Support can be enabled for host environments that expect resident outline font substitution for raster fonts.

Enhanced font support

The Enhanced Font Support feature is an extension of the printer-resident outline font support in IPS Gateway. Most hosts download required raster fonts. This feature is most beneficial when using the OS/400 (iSeries) host environment with resident outline fonts. The OS/400 expects resident outline font support to include all font types and expects the printer to resolve font substitution requirements; there is no distinction between raster font and outline font requests. This feature may also be beneficial to other host environments for solving font errors. See "OS/400 (iSeries) setup" for specific host setup instructions.

When the AFP resident outline fonts are loaded, this feature defaults to Enabled in the IPS Gateway IPDS Setup tab. Use this information to decide whether or not to disable the feature:

- Enabled When Enhanced Font Support is enabled, if the host requests a raster font, IPS Gateway substitutes an equivalent resident outline font if one is available. If the host requests a font for which there is no resident outline font match or equivalent, the default resident outline font is used.
- Disabled When Enhanced Font Support is disabled, no font substitution occurs. Requests for fonts that are resident are honored; all other fonts will be downloaded by the host. The default resident outline font is used only when explicitly requested by the host.

OS/400 (iSeries) setup

You must set several OS/400 parameters for resident outline font support. If you do not set these parameters properly, jobs submitted from OS/400 expecting resident outline fonts may fail or print blank pages. If your host is an AS/400 and you require resident outline font support, the recommended setup is:

- On the OS/400 host, set the Resident Font parameter in the PSF Configuration object to *YES.
- In IPS Gateway, ensure Enhanced Font Support is set to Enabled.
- In IPS Gateway, load the AFP fonts.

Installing and setting up font support

To load AFP fonts and enable Enhanced Font Support:

- Step 1. Open a Solaris terminal window.
- Step 2. Insert the IBM AFP font collection CD. The CD should mount as:

/cdrom/cdrom0

Step 3. Enter this command on the command line of the terminal window:

/opt/XRXdocuprint/ipds/loadfont

Or, if the CD mount path is different than the path specified in step 2, enter this command:

/opt/XRXdocuprint/ipds/loadfont -c mount path

The fonts are loaded on the printer controller and converted for use by IPDS jobs. A message should appear verifying that the fonts have been loaded from the CD. If a message does not appear, verify the mount path of the CD.

- **Step 4.** Exit IPS Gateway by selecting **Exit** from the IPS Gateway System menu.
- **Step 5.** Restart IPS Gateway by selecting **IPS Gateway** from the DocuSP System menu.

IPS Gateway Enhanced Font Support is now Enabled, which is required to run the sample provided to verify correct installation of font support. If you will not be using Enhanced Font Support, disable it after running the verification job.

Removing resident outline fonts

To remove the AFP resident outline fonts and Enhanced Font Support from your printer:

- Step 1. Open a Solaris terminal window.
- **Step 2.** On the command line of the terminal window, enter this command:

/opt/XRXdocuprint/ipds/removefont

The fonts are removed from the printer controller and Enhanced Font Support is not selectable on the IPDS Setup tab.

- Step 3. Exit IPS Gateway by selecting Exit from the IPS Gateway System menu.
- **Step 4.** Restart IPS Gateway by selecting **IPS Gateway** from the DocuSP System menu.

Defining a logical printer

Before using IPS Gateway to process IPDS data streams, the host must have a logical printer defined for IPS Gateway with these requirements:

- For TCP/IP connectivity, the Internet Protocol (IP) address and port number of the logical printer must match the IP address and port number of the printer.
- For channel connectivity, the unit address specified for the host printer definition must be a unique value and must match the unit address specified for IPS Gateway. For MVS, the logical printer must be defined as an AFP-type device.

For more information on setting up logical printers, refer to the IBM 3130, 3160, and 3935 Advanced Function Printers Attachment Configuration Handbook.

Verifying the installation

These elements are in place upon a successful installation of the IPS Gateway software and proper queue and printer setup:

- The IPS Gateway software resides in the /opt/XRXdocuprint directory on the printer controller.
- A print queue is defined on DocuSP for your system. You can view this
 queue by using the DocuSP Queue Manager. This print queue initially
 has an Accept value of Yes and a Release value of Yes.
- Because of the IPS Gateway segmentation feature, which can be used for large jobs, the installation software enables the FIFO feature. Enabling FIFO ensures that segmented jobs are printed in segment sequence by the printer. However, if the printer uses multiple print queues, all queues use FIFO. For more information on the impact of the FIFO feature, refer to the *DocuSP System Guide*.

To verify that the installation and initial setup were successful, print both a host job and either the US Letter or A4 sample job. If both print successfully, installation verification is complete.

In addition, if you installed the IBM AFP resident outline fonts, print the scfont.trc sample job to verify that the fonts were loaded correctly.

Printing a trace job within IPS Gateway

During the installation process, three sample IPDS trace jobs are provided. These jobs can be used either to verify printer operability after the IPS Gateway software is installed or for diagnostic purposes:

- afptrace.let prints a sample IPDS job formatted for US Letter paper
- afptrace.a4 prints a sample IPDS job formatted for A4 paper
- scfont.trc prints a sample IPDS job using resident outline fonts formatted for either US Letter or A4 paper

In order for the trace scfont.trc to print correctly, the IBM AFP fonts must be loaded on the printer and Enhanced Font Support must be enabled.



NOTE: These jobs test only IPS Gateway processing on the printer. "Printing a test job from the host" describes how to test host-to-printer transmission.

These traces are set up to use the installation default parameters. However, if you plan to run the A4 trace instead of the US Letter trace, change the **Media Definition** for IPDS Tray 1 from US Letter to A4. In IPS Gateway, you must map a medium to each IPDS tray specified in the IPDS data stream. For the installation verification jobs, use US Letter or A4 media. See "Media Setup tab" for instructions on mapping media to IPDS trays.

To run a trace job:

- **Step 1.** Ensure IPS Gateway is started and is reporting "IPDS Idle" status.
- **Step 2.** Select the **Diagnostics** tab on the IPS Gateway window.
- Step 3. In the Directory section, select the /var/db/samplejobs directory.
- Step 4. In the Files section, choose the desired trace file. and click Playback Trace.
- **Step 5.** When the IPDS message "Ripping Trace Complete... Job Queued for Printing" displays, click **Tracing OFF**.

Printing a test job from the host

To verify host-to-printer communications, perform these steps to print a test job from the host:

- **Step 1.** Ensure IPS Gateway is running and is reporting "IPDS Idle" status.
- **Step 2.** Start the logical printer from the host and verify that it is active.
- **Step 3.** Send an IPDS print data stream from the host.

Uninstalling IPS Gateway

At some point you may need to remove the IPS Gateway software (for example, if you have a trial version of the software installed on your workstation and the temporary license has expired). Use the uninstall program on the installation CD to remove all IPS Gateway files from the printer controller. These components are removed:

- · IPS Gateway license
- IPS Gateway packages (application and configuration files)

This program does not remove the IPS Gateway print queue. If you no longer need the queue, use the DocuSP Queue Manager to delete it. Refer to the *DocuSP System Guide* for instructions on deleting a queue.

Once uninstalled, if you want to use IPS Gateway again, reinstall it from the CD.

To run the uninstall program:

- **Step 1.** Exit IPS Gateway if it is running; see "Exiting IPS Gateway" for instructions.
- Step 2. Log on as root.
- **Step 3.** Place the IPS Gateway installation CD into the CD-ROM drive.
- Step 4. If Volume Manager is running on your workstation, a window labeled "File Manager cdrom" appears on the desktop asking for the path to your CDROM driver. Close the File Manager cdrom window.
- **Step 5.** Open a terminal window and change to this directory, or to wherever your CD-ROM directory resides, by entering this command:

cd /cdrom/cdrom0

Step 6. Enter this command to start the uninstall program:

./uninstall.sh



NOTE: The uninstall program terminates any IPS Gateway services or jobs that are running.

Step 7. You are asked to confirm that you want to remove the IPS Gateway software. Enter **y** to confirm the removal operation or **n** to cancel the procedure.

If you enter "n," the program stops and returns you to a command prompt on the terminal window. IPS Gateway remains unchanged.

- **Step 8.** You are prompted to supply the root password. After correctly entering the password, the program removes the IPS Gateway software components.
- **Step 9.** When the program successfully completes, a message appears informing you that the packages have been removed. You are prompted to restart the printer controller. Enter **y** for the uninstall program to reboot the printer controller or **n** to end the uninstall now.

If you enter "n," the uninstall changes do not take effect until you reboot the workstation. Refer to the *DocuSP System Guide* for system restart procedures.

Step 10. Remove the IPS Gateway CD and store it in a secure area.

3. IPS Gateway operation

The IPS Gateway operating procedures and configuration setup parameters are described here. It is assumed that you have successfully installed and set up IPS Gateway according to the instructions in "Installation and setup."

Starting IPS Gateway from DocuSP

IPS Gateway does not automatically start when powering up or rebooting your printer. To start IPS Gateway, select **IPS Gateway** from the System menu on the DocuSP window, shown below.



NOTE: Only one instance of IPS Gateway can run at a time. If you attempt to start IPS Gateway a second time, an error message displays on the console window.

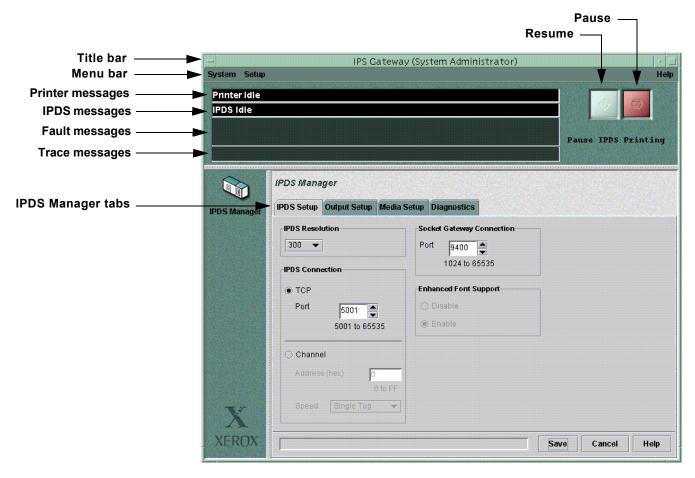


Upon normal startup, IPS Gateway:

- Displays the IPDS message "IPDS Idle"
- Activates the red Pause button
- · Is ready to receive IPDS data from the host

IPS Gateway window elements

The IPS Gateway window, shown below, consists of the following elements.



Title bar Displays the product name and user access level.

Menu bar Provides access to the IPS Gateway menus (System, Setup, and Help),

depending on your user access level.

Resume/Pause buttons Pauses and resumes IPDS data stream processing.

Printer messages Messages pertaining to the operational status of the printer.

IPDS messages Informational messages pertaining to IPDS processing.

Fault messages IPS Gateway fault messages. Place the mouse pointer over a displayed

fault message for instructions on clearing that fault.

Trace messages Displays the current trace mode and the trace file name.

IPDS Manager tabs Provides access to the options for managing and configuring IPDS.



NOTE: See "Messages" for more information on IPS Gateway messages.

Operating IPS Gateway

This section documents the operating functions available from these drop-down menus on the IPS Gateway menu bar:

- System Provides options used to operate and control IPS Gateway, including logging on and off, and resetting IPDS
- Setup Provides options used to specify licensing and change passwords used by IPS Gateway
- Help Provides access to the IPS Gateway help facility

System menu options

These options are available from the System drop-down menu:

- Logon
- Logoff
- Reset IPDS
- Exit



NOTE: You must be logged on as Trusted User or System Administrator to access the System menu options.

Logging on to IPS Gateway

Logging on to IPS Gateway as a specific user type allows you to access particular features that the Walk Up User cannot access. Before you log on, know your user access level and the password.

To log on to IPS Gateway:

- **Step 1.** Select **System>Logon** from the IPS Gateway menu bar. The Logon window opens.
- Step 2. Select the desired user level (Trusted User or System Administrator). The Trusted User level is automatically selected as the default following a restart of IPS Gateway. Otherwise, the last user access level activated is shown each time this option is accessed. See "User access levels" for more information on user access levels.
- **Step 3.** In the Password field, enter the password for the chosen user access level. Passwords are case-sensitive.
- **Step 4.** Click **OK**. If the logon is successful, you are returned to the IPS Gateway window. Your user access level displays on the title bar. You now have access to the features determined by your user access level.

Logging off IPS Gateway

Logging off IPS Gateway prevents other users from accessing and performing unauthorized functions.

To log off IPS Gateway, select **System>Logoff** from the IPS Gateway menu bar. The user access level returns to the Walk Up User level.

Resetting IPDS

After saving changed options within the various IPDS Manager setup tabs, you are prompted to reset IPDS processing.

To reset IPDS, select **System>Reset IPDS** from the IPS Gateway menu bar. A "Resetting IPDS" message appears on the IPS Gateway window.

Exiting IPS Gateway

Use the Exit option to shut down IPS Gateway. You must be logged on as a Trusted User or System Administrator in order to do this.

To exit IPS Gateway:

- **Step 1.** Select **System>Exit** from the IPS Gateway menu bar, or select **Close** on the IPS Gateway window. A window opens asking for confirmation.
- **Step 2.** Click **Yes** to terminate IPS Gateway. One of these events occurs:
 - If IPS Gateway is not actively processing an IPDS data stream, it terminates and the IPS Gateway window closes.
 - If IPS Gateway is actively processing an IPDS data stream, a dialog window appears. Select one of these buttons on the dialog window:
 - Cancel to return to the IPS Gateway window. You can attempt to exit at a later time.
 - Force Exit to stop processing and exit IPS Gateway.

Pausing and resuming IPDS processing

To pause IPDS processing, press the red **Pause** button on the IPS Gateway window; an "IPDS Not Ready" message displays in the IPDS message area.

To resume IPDS processing, press the green **Resume** button to the left of the Pause button; an "IPDS Idle" message displays in the IPDS message area.

DocuSP continues to print any jobs remaining in the DocuSP queue after IPS Gateway is paused or exited. If necessary, use the DocuSP Queue Manager to hold (stop) the jobs from printing.

Setup menu options

These options are available from the Setup drop-down menu:

- License
- Security



NOTE: You must be logged on as System Administrator to access the Setup menu options.

Obtaining and updating licenses

When obtaining new software licenses, be prepared to provide the printer controller (Sun workstation) host ID number and printer engine serial number. To retrieve the 8-character hexadecimal hostid number, open a terminal window and enter **hostid** at the prompt.

These licenses are required for IPS Gateway to operate:

- IPS Gateway
- PostScript Decomposer
- SNMP Gateway
- TCP/IP Socket Gateway
- IPS/NPS

The IPS Gateway and IPS/NPS software licenses are normally delivered with the IPS Gateway software. Enter or change your license if IPS Gateway is operating in a disabled mode (no license is loaded) or if your IPS Gateway and/or IPS/NPS software license has expired.



NOTE: Sixty days prior to your IPS/NPS software license expiring, a daily message displays in the IPS Gateway fault message area showing the number of days to expiration. Contact your local Xerox representative to obtain a valid license.

Until a valid license string and expiration date are entered, IPS Gateway cannot receive IPDS data from the host. You can access and perform tasks such as specifying setup parameters, but IPS Gateway remains in an "IPDS Not Ready" state.

For instructions on entering or changing a license, go to the appropriate section or document listed in the table below.

License	Go to
IPS Gateway	Licensing and enabling IPS Gateway
IPS/NPS	Licensing and enabling IPS/NPS
SNMP Gateway TCP/IP Socket Gateway PostScript Decomposer	DocuSP System Guide

Changing passwords

The Security option allows you to change the password for the IPS Gateway Trusted User and System Administrator. If you make a mistake while changing a password and want to begin again, click **Reset**. All three entry fields clear for reentry. You must be logged on as System Administrator to use this option.

To change a password:

Step 1. Select the **Security** option from the Setup menu to open the Security window.



- **Step 2.** Select the user access level (Trusted User or System Administrator) for the password you want to change.
- **Step 3.** In the Old Password field, enter the current password that matches the selected access level. All characters entered appear as asterisks.
- **Step 4.** In the New Password field, enter the replacement password. All characters entered appear as asterisks. Passwords must consist of 3 to 8 alphanumeric characters and are case-sensitive.
- **Step 5.** In the Retype New Password field, re-enter the new password and click **OK**. The password for the specified User type has been changed.

Help facility

IPS Gateway has a help facility to assist you when using the options provided. To access this facility, select **Online Documentation** from the Help menu, or select **Help** on the IPDS Setup, Output Setup, and Media Setup tabs.

To display the software version and copyright information for IPS Gateway, select **About IPS Gateway** on the Help menu.

Displaying DocuSP and SunOS release numbers

This section provides instructions for displaying the DocuSP and SunOS/Solaris software release numbers.

DocuSP

To display the DocuSP software release number, select **Help>About DocuSP** on the DocuSP window.

SunOS/Solaris

To display the SunOS/Solaris software release number:

- **Step 1.** Right-click on the desktop to open the Workspace Menu.
- **Step 2.** From the Workspace Menu, right-click on **Tools>Terminal** to open a terminal window. The SunOS/Solaris release number displays in the first line of the window.

If the release number does not appear, type **uname -a** at the prompt on the terminal window.

Setting up and managing IPS Gateway

This section documents the setup options available from these IPDS Manager tabs located on the IPS Gateway window:

- IPDS Setup Provides options for managing IPDS
- Output Setup Provides options for controlling the generated PostScript output sent to the queue
- Media Setup Provides options for mapping IPDS trays to printer media
- Diagnostics Provides access to the trace and diagnostic functions

The setup options allow you to enter the parameters used by IPS Gateway to compose the page specified by the IPDS data stream. IPS Gateway retains all parameter values on the printer controller during shutdown and restores the settings the next time you start IPS Gateway.

The values that you specify remain in effect until you change them. If you change these values to process a specific IPDS data stream, make sure you restore the values to the original settings once your job completes. Otherwise, all subsequent IPDS data streams may be processed incorrectly.

Important setup instructions

Read this information before changing options on the setup tabs.

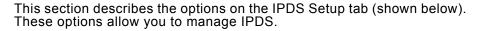
- You must be logged on as Trusted User or System Administrator to save changes to the setup tab options.
- After changing settings on any tab, click Save before leaving that tab; otherwise your new settings will not be saved.
- After clicking Save on any setup tab, you are prompted to reset IPDS. You only need to reset IPDS after all setup tab settings are saved. Your settings will not take effect until the IPDS reset is performed.

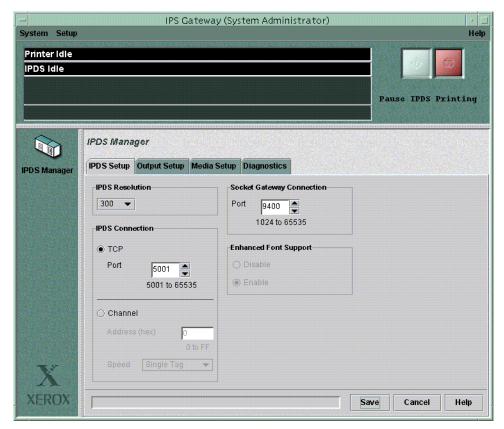
Default values

The default values listed in the table below are active in IPS Gateway upon installation. Change any of these values from the specified tab.

Setup option	Initial value	Tab location	
IPDS Resolution	300 dpi		
IPDS Connection (channel or TCP/IP)	TCP/IP port 5001	IPDS Setup	
Socket Gateway Connection (TCP/IP)	9100		
Enhanced Font Support	Enabled (if resident AFP outline fonts are loaded)		
Output Resolution	300 dpi		
Stapling	None	0 4 40 4	
Segmentation	Disabled	Output Setup	
Rotation	Disabled		
Media Definition(s) (all IPDS trays)	US Letter (216 x 279):Plain:White:75	Media Setup	

IPDS Setup tab





IPDS Resolution

The IPDS Resolution option allows you to specify the dots per inch (dpi) input resolution of the data and resources sent by the host.

To specify the input resolution:

- **Step 1.** From the drop-down box in the **IPDS Resolution** area, select the dots per inch (dpi) resolution that matches your host printer setup and job resources. Valid values are 240, 300, and 600.
- **Step 2.** Click **Save** to save your setting and reset IPDS as indicated; see "Important setup instructions" for more information.
- **Step 3.** Drain and restart the printer at the host for the change to take effect.

IPDS Connection

The IPDS Connection option allows you to select and configure the IPS Gateway connection method to the host, either TCP/IP or channel-attached. TCP/IP and channel-attached connectivity are mutually exclusive; the UI does not allow both to be selected. Both methods are described below.

Configuring TCP/IP connection

The TCP area allows you to identify the number of the TCP/IP port used in conjunction with the TCP/IP address assigned to the printer controller to send data to IPS Gateway from your host computer(s).



NOTE: PSF defaults to port number 5001 if the port number is not changed in the printer definition.

To configure TCP/IP:

- Step 1. In the IPDS Connection area, select TCP.
- Step 2. In the Port drop-down box, enter or select the port number. The value you enter must match the port number specified at the host for the logical printer. Valid values are 5001 through 65535.
- **Step 3.** Click **Save** to save your settings and reset IPDS as indicated; see "Important setup instructions" for more information.
- **Step 4.** Drain and restart the printer at the host for the changes to take effect.

Configuring channel connection

The Channel area allows you to identify the unit address and set the channel speed used in conjunction with the controller to send data to IPS Gateway from your host computer(s).

To configure channel:

- **Step 1.** In the IPDS Connection area, select **Channel**.
- Step 2. Enter your two-character unit address in the Address (hex) field.
- **Step 3.** In the **Speed** drop-down box, select one of these speeds:
 - Single tag
 - High speed
 - Data Streaming 1.5
 - Data Streaming 3
 - Data Streaming 4.5



NOTE: Channel speeds are dictated by the host, host channel extenders, and other properties of the bus and tag network. See your systems programmer to determine the appropriate channel speed.

- **Step 4.** Click **Save** to save your settings and reset IPDS as indicated; see "Important setup instructions" for more information.
- **Step 5.** Drain and restart the printer at the host for the changes to take effect.

Socket Gateway Connection

The Socket Gateway Connection area displays the TCP/IP Socket Gateway port that IPS Gateway uses when submitting jobs to DocuSP.

To specify the TCP/IP Socket Gateway port:

Step 1. From the Port drop-down box in the Socket Gateway Connection area, select the port number that matches the port number assigned to the queue on DocuSP where IPDS jobs will be spooled. Valid values are 1024 through 65535.



NOTE: For information on specifying the port in DocuSP, see "Defining the IPS Gateway queue."

Step 2. Click **Save** to save your setting and reset IPDS as indicated; see "Important setup instructions" for more information.

Enhanced Font Support

Enhanced Font Support is an extension of the printer-resident outline font support in IPS Gateway. It provides support for host environments that expect resident outline font substitution for raster fonts.

When you load supported resident outline fonts on the printer, this feature is enabled. It can be disabled if you need resident outline font support but do not need raster font substitution.

When enabled, if the host requests a raster font, IPS Gateway substitutes an equivalent resident outline font if one is available. If the host requests a font for which there is no resident outline font match or equivalent, the default resident outline font is used.

When disabled, no font substitution occurs. Requests for fonts that are resident are honored; all other fonts must be downloaded. The default resident outline font is used only when specifically requested by the host.

See "Loading IBM AFP resident outline fonts" for a complete description of resident outline font and raster font substitution support.

To enable or disable Enhanced Font Support:

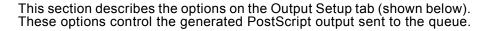
Step 1. In the Enhanced Font Support area, select either **Enable** or **Disable**, according to your resident outline font requirements.

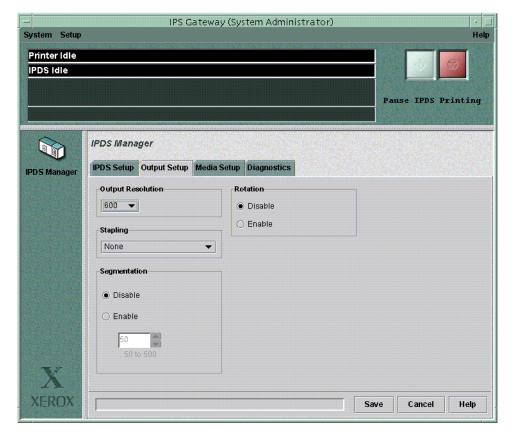


NOTE: The Enhanced Font Support area is only accessible when resident outline fonts are loaded.

- Step 2. Click **Save** to save your setting and reset IPDS as indicated; see "Important setup instructions" for more information.
- **Step 3.** Drain and restart the printer at the host for the change to take effect.

Output Setup tab





Output Resolution

The Output Resolution option allows you to specify the dots per inch (dpi) resolution of the PostScript output to be sent to the printer.

To specify the output resolution:

Step 1. From the drop-down box in the **Output Resolution** area, select the dots per inch (dpi) resolution of the PostScript output to be printed.



NOTE: Running at 600 dpi may add additional processing overhead. You must weigh performance against your printing needs.

The output resolution must match the resolution set on the PostScript/PDF tab under the queue properties in DocuSP. Otherwise, performance may be impacted.

Step 2. Click **Save** to save your setting and reset IPDS as indicated; see "Important setup instructions" for more information.

Stapling

The Stapling option allows you to specify stapling for your print jobs. By selecting a stapling mode, all jobs between 2 and 50 pages are stapled.

Not all IPDS finishing options may be available for your printer. In addition, it you use this option, DocuSP must also have stapling enabled. For available finishing options and to enable stapling on DocuSP, refer to the *DocuSP System Guide*.



NOTE: Offset job stacking is not supported when using the Stapling option.

To specify stapling:

- **Step 1.** From the drop-down box in the **Stapling** area, select one of these stapling options:
 - None Indicates no stapling.
 - StackerOffset Staples when an IPDS XOA Alternate Offset Stacker command is received. When printing multiple copies, a job containing three copies of a five page job staples each of the five page sets individually.
 - MarkForm Staples at the MarkForm page boundary. When printing multiple copies, a job containing three copies of a five page job is stapled as one set.
 - Defined Group Boundary Staples based upon host controlled finishing specified within the group boundary orders of the IPDS job. Select this option to give the host control of all stapling options for your jobs. Job-specified stapling is honored.
- **Step 2.** Click **Save** to save your setting and reset IPDS as indicated; see "Important setup instructions" for more information.

Segmentation

The Segmentation option allows you to divide a large job into a series of smaller jobs or segments. For normal job processing, job segmentation should be inactive. However, Xerox recommends that you use job segmentation for any spooled job over 500 pages. Before using this option, review the "Segmentation" processing considerations.

To enable job segmentation:

- **Step 1.** In the Segmentation area, select **Enable**.
- **Step 2.** In the drop-down box, specify a value from 50 to 500 for the number of pages that you want each job segment to contain.
- **Step 3.** Click **Save** to save your settings and reset IPDS as indicated; see "Important setup instructions" for more information.

Rotation

Use the Rotation option when migrating continuous forms jobs to IPS Gateway. Enabling this option tells IPS Gateway to print jobs that were designed for a continuous form printer on cut-sheet paper, with the orientation rotated 90 degrees.

For normal cut-sheet or non-continuous form job processing, set this option to Disable.

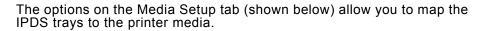
If you are sending a mixture of continuous form and cut-sheet jobs to IPS Gateway, this option must be reset between jobs, or you can batch the jobs into separate print classes to be controlled by the operator.

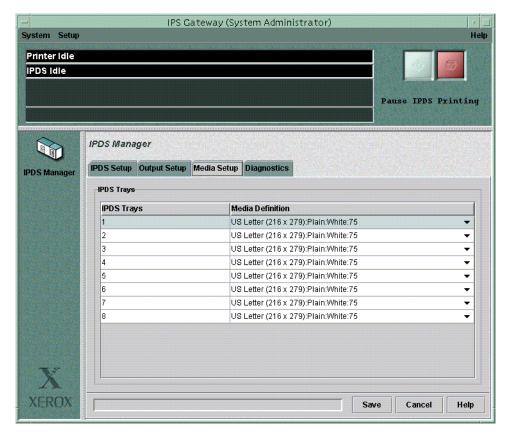
Refer to the Xerox manual *Solutions Guide for IPDS Printing* for details on continuous form to cut sheet conversion of print jobs for IPS/NPS applications.

To enable rotation:

- **Step 1.** In the Rotation area, select **Enable**.
- **Step 2.** Click **Save** to save your setting and reset IPDS as indicated; see "Important setup instructions" for more information.

Media Setup tab





The Printer Manager in DocuSP is used to define media, assign each medium to a specific physical printer tray, and load the media in the trays.

These media definitions are communicated to IPS Gateway for mapping to IPDS trays through the IPS Gateway Media Setup tab. In IPS Gateway you map a specific medium to each IPDS Tray Selection Value expected from the IPDS data stream. Each media definition includes these attributes:

- Size
- Type
- Color
- · Weight

After IPS Gateway installation, the default media definition for all IPDS trays is: US Letter (216 x 279):Plain:White:75

Setting up media in DocuSP

In DocuSP, define and load the media required to run your job(s). Refer to the *DocuSP System Guide* for instructions on defining media. All media defined in DocuSP, including custom sizes, are supported by IPS Gateway.

Mapping IPDS trays to media definitions

The Media Setup tab allows you to map a specific medium to each possible IPDS Tray Selection Value in the IPDS data stream. Each specified IPS Gateway medium must already be defined correctly in the DocuSP Printer Manager and loaded in that tray. For IPS Gateway, there are eight possible IPDS Tray Selection Values (1 through 8).

When IPS Gateway receives the IPDS Tray Selection Value for the IPDS page it is composing, it sends the medium specification currently defined for that IPDS tray to DocuSP, which uses the stock specification to determine which physical tray to pull from.

For an IPS Gateway job, if the requested IPDS tray is mapped to medium not assigned to a physical tray in DocuSP:

- The job displays as ineligible in DocuSP and does not print
- The invalid media definition displays in red on the IPS Gateway Media Setup tab



NOTE: If media is changed in the DocuSP Printer Manager, the IPDS media setup in IPS Gateway must be updated to reflect the valid media definition(s).

If you define custom paper sizes in DocuSP, the actual dimension is listed in the Media Definition drop-down in the IPS Gateway Media Setup tab, instead of the Size name. This table provides the dimensions for some common paper sizes.

Paper size	Inches	Millimeters
US Letter	8.50 x 11.00	216 x 279
US Legal	8.50 x 14.00	216 x 356
US Ledger	17.00 x 11.00	432 x 279
A3	16.54 x 11.69	420 x 297
A4	8.27 x 11.69	210 x 297
US Statement	5.50 x 8.50	140 x 216

To map IPDS trays to available media definitions.

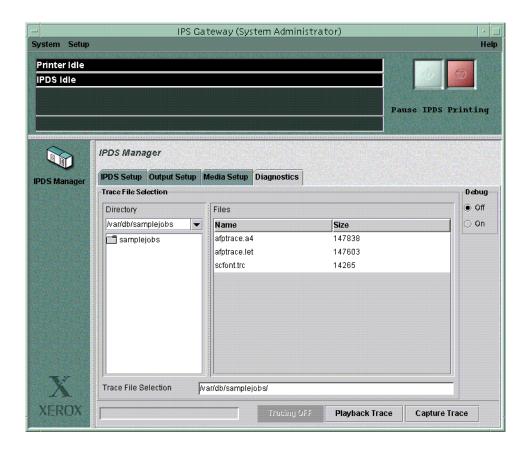
- Step 1. Select the IPS Gateway Media Setup tab:
- Step 2. For each IPDS Tray, select a Media Definition to use when that IPDS Tray Selection Value is encountered in the IPDS data stream. For example, if the IPDS data stream requests IPDS tray 3, and you want the job to print on legal paper, then the Media Definition for IPDS Tray 3 should be "US Legal (216 x 356):Plain:White:75." Only media assigned to and loaded in physical trays on DocuSP are available in the drop-down lists.
- Step 3. Once you specify the paper size for each IPDS tray, click **Save** to save your settings and reset IPDS as indicated; see "Important setup instructions" for more information.
- **Step 4.** Drain and restart the printer at the host for the changes to take effect.

Diagnostics tab

Diagnostic information is useful when diagnosing and correcting problems encountered with IPS Gateway. Access the diagnostic options on the Diagnostics tab (shown below).



NOTE: If you experience any problem with IPS Gateway, such as a channel connectivity problem, that you are not able to correct, contact your local Xerox representative for help in diagnosing and resolving the issue.



The IPS Gateway diagnostic trace functions allow you to capture or replay a diagnostic trace of your IPDS data stream, or to capture diagnostic messages within the IPS Gateway log files while IPS Gateway is processing a data stream. Typically, your Xerox Customer Service Engineer performs these functions. However, you may be asked to perform one or more of these functions in preparation for a service call.

You must be logged on as Trusted User or System Administrator to access and use the trace functions. These trace functions are available:

- Capture Trace Used to capture IPDS data in a file as it is being received from the host.
- Playback Trace Used to play back a previously captured trace file.
- Debug Used to enable IPDS diagnostic information. Xerox recommends turning this option on when you are experiencing problems and need to gather information for a customer problem log.



NOTE: During a trace capture or playback, the IPDS Setup, Output Setup, and Media Setup tab options are not accessible and cannot be changed until the trace capture or playback is stopped.

Capturing a trace

Capture Trace writes the IPDS data being received from the host to a file as it is processed by IPS Gateway. The trace file also includes any replies that IPS Gateway has sent to the host.

If you have an IPDS data stream that experienced a printing problem, use this option to recreate the problem for further analysis by Xerox personnel. To capture a trace:

- **Step 1.** Drain the printer at the host to ensure that the trace includes information from when the printer is first started. Otherwise, the host may download information to the printer that is not captured.
- **Step 2.** Select the **Diagnostics** tab on the IPS Gateway window.
- **Step 3.** In the Directory area, select the /var/db/ipdstraces directory.
- Step 4. Select an existing file in the Files box or enter a new file name in the Trace File Selection field at the bottom of the window. If you select an existing file, the information in that file will be overwritten.
- Step 5. Once the Trace File Selection field contains the directory path and name of the trace file, click **Capture Trace**. The message "Capture Trace" appears in the trace message area on the IPS Gateway window.
- **Step 6.** Start the printer at the host.
- **Step 7.** Submit the job for which you need to recreate the problem. IPS Gateway continues to capture trace information until you stop the trace.
- **Step 8.** Once your job completes, drain the printer at the host.
- Step 9. Click Tracing OFF on the Diagnostics tab.

Playing back a trace

Playback Trace allows you to playback a trace file previously captured and print that trace as if it is being received from the host. This option is used during installation verification or by Xerox personnel when performing problem determination and resolution.

To play back a trace:

- **Step 1.** Drain the printer at the host.
- Step 2. Select the Diagnostics tab on the IPS Gateway window.
- **Step 3.** In the Directory area, select the /var/db/ipdstraces directory or the directory where the trace is located.
- **Step 4.** Select an existing file in the Files box or enter an existing file name in the Trace File Selection field at the bottom of the window.
- Step 5. Click Playback Trace. On the IPS Gateway window, the message "Ripping Trace..." appears in the IPDS message area and "Playback Trace" appears in the trace message area.

If the playback trace is successful, the message "Ripping Trace Complete... Job Queued for Printing" appears in the IPDS message area. If the playback is not successful, "Ripping of Trace Complete... Trace Ended with Error" appears.

Step 6. Click Tracing OFF on the Diagnostics tab.

Using Debug mode

The Debug option writes additional information to the IPS Gateway log files while an IPDS data stream is being processed by IPS Gateway. These messages are usually indications of the IPDS command currently being processed and are helpful with problem determination.

To start debug mode:

- Step 1. Select the Diagnostics tab.
- **Step 2.** Select **Debug On** to enable the debug function.
- Step 3. Reset IPS Gateway by clicking System>Reset IPDS on the IPS Gateway window.
- **Step 4.** Submit your job from the host.
- **Step 5.** When the desired data is received, select **Debug Off** to disable the debug function.
- **Step 6.** Reset IPS Gateway by clicking **System>Reset IPDS** on the IPS Gateway window.

4. Messages

The following types of IPS Gateway messages are documented below. When issued, these messages display on the IPS Gateway window (as shown on the window in the "IPS Gateway window elements" section).

- Fault messages
- IPDS messages
- Trace messages
- Printer messages

IPS Gateway exception handling messages are also documented.

Fault messages

Place the mouse pointer over a displayed fault message for instructions on clearing that fault.

System fault.

Explanation: An unrecoverable error has occurred.

System response: IPS Gateway disables UI functions.

User action: Exit and restart IPS Gateway. If the problem persists, contact Xerox

technical support.

IPS Gateway communication fault.

Explanation: IPS Gateway was not able to communicate with the required IPS Gateway

services.

System response: IPS Gateway disables UI functions.

User action: Exit and restart IPS Gateway.

Not authorized.

Explanation: The IPS Gateway license could not be found or contains invalid

information.

System response: IPS Gateway disables processing.

User action: Select License from the IPS Gateway Setup menu and verify that the

XRX_IPS_NPS_software license information is entered and is not expired. If a valid license is entered, cancel the License window and select **Resume** to start IPDS processing. If the license information is not

valid, contact your Xerox customer service representative.

SNMP communication fault.

Explanation: IPS Gateway was not able to communicate with the printer SNMP services.

System response: IPS Gateway disables UI functions on the Media Setup tab.

User action: Ensure that the printer SNMP services are licensed and active and that

DocuSP is active.

Unable to establish socket gateway connection to printer.

Explanation: IPS Gateway could not connect to the printer using the socket gateway

information provided in the IPDS Setup tab.

System response: IPS Gateway reattempts to make a socket gateway connection using the

information in the IPDS Setup tab.

User action: Ensure that the socket gateway is correctly defined and active on the printer.

Job in progress error: Unable to initiate socket gateway connection.

Explanation: IPS Gateway could not establish a socket gateway connection for the

IPDS job in progress.

System response: IPS Gateway reattempts to make a socket gateway connection using the

information in the IPDS Setup tab.

User action: Ensure that the socket gateway is correctly defined and active on the printer.

Media mismatch detected. Check Media Setup tab.

Explanation: IPS Gateway detected that an IPDS tray is using a media definition that

either no longer exists or is no longer loaded on the printer.

System response: The IPS Gateway Media Setup tab highlights (in red) each row of IPDS

trays using an invalid media definition.

User action: Correct and save the IPDS tray mappings to prevent jobs from becoming

ineligible.

IPDS configuration change(s) detected. Reset IPDS is required.

Explanation: IPS Gateway detected changes that require an IPDS reset.

System response: IPDS processing continues. Any configuration changes made do not take

effect until IPDS is reset.

User action: Select Reset IPDS from the IPS Gateway System menu for the changes

to take effect.

Warning: The IPS Gateway license expires at midnight.

Explanation: IPS Gateway detected that the XRX IPS NPS license expires at

midnight.

System response: If a valid license is entered before midnight, IPS Gateway continues

processing without interruption. If a valid license is not entered, IPS

Gateway discontinues processing at midnight.

User action: Contact your Xerox customer service representative for a new license.

Warning: The IPS Gateway license expires in *number* day(s).

Explanation: The IPS Gateway detected that the XRX_IPS_NPS license expires in the

specified number of days.

System response: IPS Gateway displays this warning and continues processing.

User action: Contact your Xerox customer service representative for a new license.

IPDS messages

IPDS Idle

Explanation: IPDS is ready to receive jobs.

System response: None.

User action: None.

IPDS Not Ready

Explanation: IPS Gateway is not ready to receive jobs.

System response: None.

User action: Review the other message windows for error indication.

Ripping Job... Pages Outstanding: number

Explanation: IPDS has the specified number of pages left to rip.

System response: None.

User action: None.

Starting IPDS Services... Please Wait

Explanation: The IPDS services are being initiated.

System response: None.

User action: None.

Ending IPDS Services... Please Wait

Explanation: The IPDS services are being terminated.

System response: None.

User action: None.

Initializing IPDS...

Explanation: The IPDS services are in the process of initializing.

System response: IPS Gateway disables UI functions while IPDS initializes.

User action: None.

Resetting IPDS...

Explanation: The operator selected the Reset IPDS option on the System menu.

System response: IPS Gateway disables UI functions while IPDS resets.

User action: None.

Pausing IPDS...

Explanation: The operator selected the pause IPDS button on the IPS Gateway window

or IPS Gateway detected that the printer is not ready.

System response: IPS Gateway pauses IPDS processing.

User action: None.

Resuming IPDS...

Explanation: The operator selected the resume IPDS button on the IPS Gateway

window or IPS Gateway detected that the printer is ready.

System response: IPS Gateway resumes IPDS processing.

User action: None.

Checking for NPS Services... Please Wait

Explanation: IPS Gateway services are being initiated.

System response: IPS Gateway processing is initiated.

User action: None.

Ending NPS Services... Please Wait

Explanation: IPS Gateway services are being terminated.

System response: IPS Gateway processing is terminated.

User action: None.

Contacting SNMP Agent... Please Wait

Explanation: IPS Gateway services are being initiated.

System response: IPS Gateway processing is initiated.

User action: None.

Shutting Down IPS Gateway... Please Wait

Explanation: IPS Gateway services are being terminated.

System response: IPS Gateway processing is terminated.

User action: None.

IPDS State Unknown

Explanation: IPS Gateway is unable to determine the IPDS state.

System response: IPS Gateway disables UI functions.

User action: None.

Ripping Trace...

Explanation: IPDS is playing back a trace file.

System response: None.

User action: None.

Ripping Trace Complete... Job Queued for Printing

Explanation: IPS Gateway successfully completed the trace playback.

System response: IPS Gateway submits job for printing.

User action: None.

Ripping of Trace Complete... Trace Ended with Error

Explanation: IPS Gateway encountered a problem while playing back the trace or the

Trace OFF button was pressed before ripping completed.

System response: IPS Gateway submits for printing any portion of the job that processed

successfully.

User action: Verify the integrity of the trace file.

Trace messages

Playback Trace: trace_file_name

Explanation: IPS Gateway is playing back the specified trace file. All other trace

functions are disabled until Tracing OFF is selected.

System response: IPS Gateway disables UI functionality.

User action: None.

Capture Trace: trace_file_name

Explanation: IPS Gateway is writing trace information to the specified trace file. All

other trace functions are disabled until Tracing OFF is selected.

System response: IPS Gateway disables UI functionality.

User action: None.

Printer messages

IPS Gateway is notified of these printer states.

Printer Idle

Explanation: The printer is ready to receive jobs.

System response: IPS Gateway detects that the printer is idle and resumes IPDS

processing, unless the operator selected Pause.

User action: None.

Printer Not Ready

Explanation: The printer is not ready to receive jobs.

System response: IPS Gateway detects that the printer is not ready and pauses IPDS

processing, unless the operator selected Pause.

User action: None.

Printer Printing

Explanation: A job is currently printing.

System response: IPS Gateway detects that the printer is printing and resumes IPDS

processing, unless the operator selected Pause.

User action: None.

Printer State Unknown

Explanation: IPS Gateway is unable to determine the printer state.

System response: IPS Gateway cannot determine the printer state and pauses IPDS

processing.

User action: Verify that DocuSP is active and that the SNMP Gateway is activated and

enabled.

Printer Warming Up

Explanation: The printer is warming up.

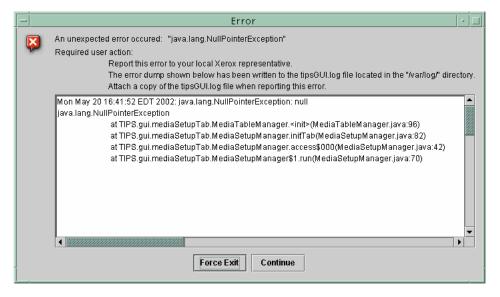
System response: IPS Gateway detects that the printer is warming up and resumes IPDS

processing.

User action: None.

Exception messages

If an unexpected exception handling error occurs, a message window (shown below) opens describing the error and the required user action. The error dump that appears on the window is also written to the tipsGUI.log file in the /var/log directory. When reporting this error to your Xerox customer service representative, provide a copy of this log file for problem determination.



Glossary

This glossary contains terms and definitions related to the operation and use of IPS Gateway. For a complete list of terms and definitions related to your DocuPrint printer, refer to the DocuSP System Guide.

Advanced Function Presentation (AFP) An IBM family of software products that enables you to place text and images at any point on a page.

case-sensitive

Treating lowercase and uppercase characters differently.

channel

A commonly used network connectivity method consisting of a channel card with a bus and tag cable. This communication system directly connects workstations to each other, to file servers, and to peripherals.

code page

An IBM translation table that maps an EBCDIC code point to a character

identifier.

Document Services Platform

(DocuSP)

A Xerox hardware/software interface between client systems and the printer that accepts a document as a page description language file. converts the file to a bitmap image, and sends the data through a dedicated electrical connection to a DocuPrint printer.

dots per inch (dpi)

The units of resolution of a resource or a page.

Ethernet

A network standard consisting of a coaxial cable or twisted pair and associated components for connecting workstations to each other, to file servers, and to peripherals. This communication system enables workstation users to share information and services.

Extended Binary-Coded Decimal Interchange Code (EBCDIC) A method of encoding alphabetic and symbolic characters in a format for electronic storage and data communication.

fault

A condition that prevents proper processing of a print job and requires user intervention.

First In/First Out (FIFO)

The printing of jobs in the same order as which they are submitted.

font global identifier (FGID)

A unique font identifier that is specified within the global resource identifier (GRID) found in an IBM MCF-2 structured field.

Intelligent Printer Data Stream (IPDS) IBM's System Application Architecture host-to-printer data stream for AFP subsystems. It provides an interface to all-points-addressable printers.

Internet Protocol (IP) address

Refers to an address of any host that uses the TCP/IP network protocol.

IPS A print system that processes IPDS data streams.

logical page The area on the physical page where data can be printed.

MarkForm An end-of-job marker in the IPDS data stream that appears on the trailer

page of the job.

Overlay Generation
Language (OGL)

An IBM product used to create electronic forms in the IBM AFP environment.

Print Services Facility (PSF) An IBM software product that controls all-points-addressable printers.

Printer Control Language
(PCL)

A printer description language defined by the Hewlett-Packard Company.
PCL describes the input (type, format, and characteristics), performs the processing functions (logical processing), and describes the output (type, format, font selection, accounting options) of a print job.

Random Access Memory (RAM)

Volatile memory used for temporary storage of data and software commands. Used by programs for immediate task processing.

resident fontsThe fonts that are loaded on the server at the time of installation and remain permanently on the server.

spooling The process of storing data temporarily until another device is ready to accept it.

A network topology in which a control packet or token is passed from station to station in sequential order. Stations needing access must wait for the token before transmitting data. In a Token Ring, the next logical station receiving the token is also the next physical station.

trace A routine record providing a list of historical events (execution) of a program.

A commonly used network communications protocol supported by the DocuSP system. It is a set of data communications protocols or a type of "language" that the devices use to "speak" with each other.

Token Ring

(TCP/IP)

Transmission Control

Protocol/Internet Protocol

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