

Version 7.0
April 2008
701P49447



Xerox FreeFlow[®] Print Server System Guide



©2009 Xerox Corporation. All Rights Reserved. Unpublished rights reserved under the copyright laws of the United States. Contents of this publication may not be reproduced in any form without permission of Xerox Corporation.

Xerox®, the sphere of connectivity design, <add any Xerox trademarked products used in this document here>, are trademarks of Xerox Corporation in the United States and/or other countries.

<Add the copyright information for all third-party-products mentioned in the document here>

Document version 1.0: September 2009

Contents

i Introduction

About this guide.....	vii
Contents.....	vii
Conventions.....	vii
Customer support	viii

1 System Administration

Fonts.....	2
How to choose fonts.....	3
Fonts.....	4
Downloading fonts from the network	4
Resident fonts.....	5
Non-resident fonts.....	9
Font substitution	10
Font resources	11
System Preferences caveats.....	12

2 Job submission

How to obtain the print drivers	2
CentreWare printer drivers CD.....	2
Printer drivers at the Xerox web site.....	2
Installing the print drivers.....	4
From the CentreWare printer drivers CD.....	4
From the downloaded Win-Zip file.....	4
Hot folder submission	5
Hot Folders directory.....	5
Workflow example.....	5
Support information.....	6
Caveats.....	6
Troubleshooting Hot Folder problems.....	6
JDF support via the Hot Folder feature.....	7
Technical overview	7
The JDF Process	7
JDF Workflow Example	8
JDF Considerations	9
Troubleshooting JDF.....	9
Multiple job submission.....	11
Web submission.....	12
Printing Using the Internet Services Web Client.....	12

Remote Print Server	14
Overview	14
Features	14
Notes and caveats	14
FreeFlow Digital Workflow Collection	16
3 Printing and queue management	
Printing	2
Printing workflow options	2
Parallel RIP processing	2
ASCII and PCL printing utilities	3
LP/LPR compatibility with Print Server	4
Highlight color programming in ASCII job ticket	5
Resource based scheduling for NPS color	6
DCS Comments for Highlight Color	6
Socket gateway configuration utility: setVPSoption	6
TIFF files	7
Administration page controls	9
Performance considerations	10
Using VIPP	10
Repository management	10
Job previewing and editing	13
Printing hints	13
Queue management	14
Transaction printing	15
IPDS (Intelligent Printer Data Stream)	15
LCDS (Line Conditioned Data Stream)	16
IPDS and LCDS reference resources	19
4 Finishing	
Subset finishing	2
Creating jobs to use subset finishing	2
Subset offset (Page Level Jog)	2
PCL offset/separator/subset finishing command	3
PCL Offset Stacking	3
Using the PCS Separator	3
PCL paper source command	4
Tray programming	5
Tray confirmation	5
Tray mapping	6
Mapping trays to media	6
Stacking order	7
Mixed stacking	8
Additional finishing information	9

5 Gateway and Network Configuration

Gateways.....	2
SNMP gateway configuration	2
SNMP Supported Features by Product	3
Configuration Variables.....	6
AppleTalk gateway configuration	7
NetWare gateway configuration	7
Queue server options	7
LPD gateway configuration	8
Network configuration settings.....	9
Host Name.....	9
Internet Protocol Options	9
IP configuration	9
Name services.....	10
LP/LPR compatibility with Xerox FreeFlow Print Server.....	12
Ethernet connection speed.....	13
Restore network factory settings.....	13
Other resources	14

6 Accounting and Billing

Accounting	2
Auto exporting accounting log	2
Accounting exported values.....	2
Accounting file fields	3
Job Notes window	11
Billing	12
View and Print the Billing Report.....	12
Billable events.....	12
Billing meters	13

7 Backup and Restore

System Backup and Restore.....	2
When to Backup and Restore a System	2
Configuration Backup and Restore	4
When to Backup and Restore a Configuration	4
Frequently asked questions	6
System Backup and Restore	6
Configuration Backup and Restore.....	6
System Backup Troubleshooting	8
Activity logging.....	8

8 Troubleshooting

Calling for service	2
---------------------------	---

Declared faults.....	3
Printer fault.....	3
Job fault.....	3
Undeclared faults.....	4
SNMP problems.....	4
Client problems.....	4
Editor problems.....	10
Restart Xerox FreeFlow Print Server software without rebooting.....	11
Productivity and performance problems.....	11
Problems when saving a job.....	11
Printing system logs.....	13
all_jobs_log.....	13
system_log.....	13
status_log.....	13
ep_exception_log and ep_primary_log.....	13
LPR logs.....	14
Printing the accounting log.....	14
LP/LPR and the ASCII job tickets.....	14
Rebooting and restarting.....	15
Loading XJDC/Unix.....	16
Configuring XJDC/Unix.....	17
XJDC hints and tips.....	18
Output files.....	19
Ejecting a CD/DVD on a Print Server station.....	20
Remote Services.....	21
9 Hints and Tips	
General.....	2
Disabling the Solaris Screen Saver.....	2
Color Systems.....	3
Settings for enhanced color output.....	3
Color job processing efficiencies.....	3
Job submission hints.....	4
PCI channel interface PWB trace capture.....	9
Perform a trace.....	9
Export the trace file to CD/DVD.....	9
Command Line Utilities.....	10

Introduction



The System Guide provides the information needed to perform system administration tasks for configuring and maintaining the Xerox FreeFlow[®] Print Server for printing systems.

About this guide

This guide is intended for network and system administrators responsible for setting up and maintaining Xerox printers with Xerox FreeFlow Print Server software. System administrators should have an understanding of the Sun workstation, a familiarity with Solaris, and with basic UNIX commands. This includes the use of text editors such as vi or textedit and the ability to maneuver within the Solaris environment. To enable them to setup a customer site, system administrators are expected to have a working knowledge of Local Area Networks (LANs), communication protocols, and the applicable client platforms.

Contents

In general, this document covers information about the Xerox FreeFlow Print Server that is *not* covered in the Online Help or other available guides.

The following list describes the contents of this guide:

- System Administration (includes font information)
- Job Submission
- Printing and queue management
- Finishing
- Gateway and Network Configuration
- Accounting and Billing
- Backup and Restore
- Troubleshooting
- Hints and Tips

Conventions

This guide includes the following conventions:

- Angle brackets - Variable information that is displayed on your screen is enclosed within angle brackets; for example, “Unable to copy <filename>.”
- Square brackets - Names of options you select are shown in square brackets; for example, [OK] and [Cancel].

Introduction

- Notes are hints that help you perform a task or understand the text. Notes are found in the following format:

Note This is an example of a note.

Customer support

To place a customer service call, dial the direct TTY number for assistance. The number is 1-800-735-2988.

For additional assistance, dial the following numbers:

- Service and software support: 1-800-821-2797
- Xerox documentation and software services: 1-800-327-9753

System Administration

1

This section discusses fonts and font resources and caveats on certain system preferences and how they interact with specific workflows.

Fonts

The following information explains how to use and choose fonts for a job. It also covers various resident and non-resident fonts and their availability.

How to choose fonts

Although document source files can specify almost any image on a printed page, images that contain letters, numbers, punctuation, and symbols are common enough to require a special mechanism for dealing with them, similar to movable type. This mechanism is the font. The Xerox FreeFlow[®] Print Server controller provides the following resident fonts: Type 1, Type 42 (TT: TrueType), and CID. Also supported are Types 0, 1, 2, 3, 9, 10, 11, 14, 32, and 42.

Fonts

The most important thing to remember is that the font used to create a document must also be available to the Xerox FreeFlow Print Server controller.

Note The Xerox FreeFlow Print Server supports the euro character. Most font families include the euro character.

At the Xerox FreeFlow Print Server controller, a font can exist in three forms:

Resident fonts

A resident font is an internal font that is permanently stored on the Xerox FreeFlow Print Server controller and is always available.

Soft fonts

An optional or soft font is a typeface that is loaded as needed at the Xerox FreeFlow Print Server controller. This allows the Print Server controller to be customized with special fonts, such as logos, or other special font applications as needed.

Downloaded font

A downloaded font is a font that has its requirements embedded in the actual source file. If this font is not available at the Xerox FreeFlow Print Server controller, the downloaded information is used to process and print the document. Although it is useful, it also creates a much larger file size.

Downloading fonts from the network

Downloading commercial fonts from the Network allows fonts to be downloaded to the Xerox FreeFlow Print Server Controller from both Mac or PC platforms. Supported application programs for font downloading are as follows: PC Platform - Adobe Type On Call; Apple Macintosh Platform - Adobe OCF, Marisawa, and Font Works

Font download can also occur on a queue designed specifically for the Appletalk gateway. These fonts usually a Japanese (double-byte) or Chinese type font set. Applications in the Fuji Xerox marketplace utilize the Appletalk two-way protocol to poll the printer and then download the massive character sets needed in these markets. In the U.S. marketplace the typical font loading mechanism is to hard drive in [Administration]. The use of English fonts from specific applications (e.g, Adobe has some) download from the AppleTalk gateway is not common.

Resident fonts

The Xerox FreeFlow Print Server controller comes with a wide variety of fonts that are available when creating a document.

Note If you are unsure of the availability of a font, always consult with your print organization's management to determine which fonts are currently loaded on the Xerox FreeFlow Print Server controller.

PostScript resident fonts

The PostScript Type 1 typeface families listed in Table 1-1: *“PostScript Fonts”* are scalable, which means that all point sizes are supported, even intermediate point sizes. These include the typefaces that make up the LaserWriter IINTX basic font set, plus additional Type 1 fonts supplied by Xerox.

Font family	Stresses and weights
ACaslon	Italic, Regular, Semi Bold, Semi Bold Italic
AGaramond	Bold, Bold Italic, Italic, Regular
Americana	Americana, Extra Bold
AvantGarde	Book, Book Oblique, Demi, Demi Oblique
AdobeSans	MM
AdobeSerif	MM
Albertus	Italic, Light, MT
AntiqueOlive	Bold, Compact, Italic, Roman
Apple	Chancery
Arial	BoldItalicMT, BoldMT, ItalicMT, MT
Blackoak	---
Bodoni	Bold, BoldItalic, Italic, Poster, Poster Compressed
Bookman	Demi, Demi Italic, Light, Light Italic
Carta	---
Chicago	---
Clarendon	Bold, Light
CooperBlack	Regular, Italic, ThirtyThreeBC, ThirtyTwoBC
Coronet	---
Courier	Courier, Bold, Oblique, Bold Oblique, Regular
Eurostile	Regular, Bold, Bold Extended Two, Extended Two
Garamond	Light, Light Italic, Bold, Bold Italic

Font family	Stresses and weights
Geneva	---
GillSans	Bold, BoldCondensed, BoldItalic, Condensed, ExtraBold, Italic, LightItalic
Goudy	Regular, Bold, BoldItalic, ExtraBold, Italic
Helvetica	Helvetica Black, Black Oblique, Bold, Bold Oblique, Oblique, Light, Light Oblique, Condensed, Condensed Bold, Condensed Bold Oblique, Condensed Oblique, Narrow, Narrow Bold, Narrow Bold Oblique, Narrow Oblique, Regular
HoeflerText	Black, BlackItalic, Italic, Ornaments, Regular
JL-PropRoman	---
Joanna	Regular (MT), Bold, BoldItalic, Italic
Kaufmann	---
Korinna	Bold, Kursiv Bold, Kursiv Regular, Regular
LetterGothic	Regular, Bold, BoldSlanted, Slanted
Liithos	Black, Regular
LubalinGraph	Book, BookOblique, Demi, DemiOblique
Marigold	---
Monalisa-Recut	---
Monaco	---
New Century Schoolbook	Roman, Bold, Italic, Bold Italic
NewYork	---
Optima	Bold, BoldItalic, Italic
Oxford	---
Palatino	Roman, Bold, Italic, Bold Italic
Parisian	---
ParkAvenue	---
Poetica	SuppOrnaments
RLKL-PropRoman	---
StempelGaramond	Bold, BoldItalic, Italic, Roman
Symbol	---
Tekton	Tekton, Bold

Font family	Stresses and weights
Times	Bold, Bold Italic, Italic, Roman
TimesNewRomanPS	Bold Italic MT, Bold MT, Italic MT, MT
Trajan	Bold
Univers	Regular, Bold, BoldExt, BoldExtObl, BoldOblique, Condensed, CondensedBold, CondensedBoldOblique, CondensedOblique, Extended, Light, LightOblique, Oblique, Extended Ob1
Wingdings	Regular
Woodtype Ornaments	Two
XeroxLogoTypes PK1	---
ZapfChancery	Medium Italic
ZapfDingbats	---

The fonts listed in Table 1-2: “*Optional, Licensed Kanji Fonts*” are resident **only** if they have a valid license.

Font family	Stresses and weights
CGBrn	PropRoman
ChuGothic BBB	Medium, PropRoman
HeseiKakuGothic-W5	PropRoman
HeiseiMincho-W3	PropRoman
FutoGoB101	All, Bold, PropRoman
FutoMinA101	All, Bold, PropRoman
HonMincho-M	PropRoman
JL-PropRoman	---
MMMA-PropRoman	---
MaruGothic M	PropRoman
MidashiGO MB31	PropRoman
MidashiMin MA31	PropRoman
Mincho-PC Hiragana	---
Minch-PC Katakana	---
Osaka Mono Roman	---

Font family	Stresses and weights
Osaka PropRoman	PropRoman
Ryumin-Light-KL	PropRoman

PCL resident fonts

There are three types of PCL 5e resident fonts that are permanently loaded at the Xerox FreeFlow Print Server controller:

- Scalable Intellifont typefaces
- LaserJet IV bitmap typefaces
- Typefaces that match the TrueType fonts as shown in Table 1-3: *"PCL Resident, Scalable Fonts"*.

Note These are the same internal typefaces that are provided with the HP LaserJet 4 printer.

Font family	Typefaces
Albertus	Medium, Extra Bold
Arial	Regular, Bold, Italic, Bold Italic
Antique Olive	Antique Olive, Bold, Italic
CG Times	CG Times, Bold, Bold Italic, Italic
CG Omega	CG Omega, Bold, Bold Italic, Italic
Clarendon	Condensed
Coronet	---
Courier	Regular, Bold, Bold Italic, Italic
CourierPS	Regular, Bold, Oblique, Bold Oblique
Garamond	Antiqua, Halbfett, Kursiv, Kursiv Halbfett
Helvetica	Regular, Bold, Narrow, Oblique, NarrowBold, BoldOblique, NarrowOblique, NarrowBoldOblique
ITCAvantGuard	Gothic Book, Gothic Demi, Gothic Book Oblique, Gothic Demi Oblique
ITCBookman	Light, Demi, Light Italic, Demi Italic
Letter Gothic	Letter Gothic, Bold, Italic
LinePrinter	---
Marigold	---
New Century Schoolbook	Roman, Bold, Italic, Bold Italic
Palatino	Roman, Bold, Italic, Bold Italic

Font family	Typefaces
Symbol	---
SymbolPS	---
Times	Roman, Bold, Italic, Bold Italic
Times New	Regular, Bold, Italic, Bold Italic
Univers	Medium, Medium Condensed, Medium Condensed Italic, Medium Italic, Bold, Bold Italic, Bold Condensed, Bold Condensed Italic
Wingdings	---
ZapfChancery	---
ZapfDingbats	

Font family	Typefaces
Line Printer 16.67 pitch 8.5 point	Portrait, Landscape

Non-resident fonts

There may be many fonts available in your application that are not resident at the Xerox FreeFlow Print Server controller. There are two options for using non-resident fonts to create a document.

Downloaded fonts

If you expect to create a document using fonts that are available on your workstation but not available at the Xerox FreeFlow Print Server controller, your application may automatically download the font when the job is sent to the printer. Fonts downloaded in this manner are considered “temporary” and are deleted from the Xerox FreeFlow Print Server controller as soon as the job is printed.

Note Refer to your application documentation for more information on downloading fonts in your document.

If you are using a font in your application that has the same name as a resident font but is a different version, it must be downloaded with the job. The Xerox FreeFlow Print Server controller will use the downloaded font rather than the resident font.

Note Marking a font for “permanent” downloading in your application is not supported.

Optional or soft fonts

Downloading fonts each time you print will increase the size of the file and result in a longer transmission time. If your print jobs regularly require a font that is not a resident font, you may request to have it installed as an optional font at the Xerox FreeFlow Print Server controller. Your printing organization's font policy should give you the specific information you need to request a special font.

Font substitution

A document may require a font that is not available at the Xerox FreeFlow Print Server controller and has not been downloaded with the source file. When the requested font is not available, font substitution will take place.

PostScript fonts

A single default font, set by the System Administrator in the Xerox FreeFlow Print Server software, will be substituted for any font requirements that cannot be met at the Print Server controller. A message will be printed to confirm that a substitution has taken place.

PCL 5e fonts

Another type of substitution occurs for PCL fonts. If a requested PCL font is not available, the Xerox FreeFlow Print Server controller will determine which available font best matches the requested one and perform the substitution. Any PCL stream that does not have any fonts specified in the file will have the default font programmed in the “PCL font” section for the corresponding queue in Queue Management.

Font resources

Additional information on fonts can be found in:

- Xerox FreeFlow[®] Print Server Using LCDS Print Description Language book
- Xerox FreeFlow[®] Print Server Security Guide
- Xerox Document Services Platform MICR User Guide

System Preferences caveats

Combinations of certain System Preferences settings can be set in order to enhance certain customer workflows. Some examples follow:

- When printing on transparency stock *and* printing Administrative Pages (such as a Banner Page), the FreeFlow Print Server uses the default administrative page stock (versus the document job stock) to print the Administrative Pages.
 - If Resource Based Scheduling is **enabled** (Setup > System Preferences > Job Processing > Resource Based Scheduling), the job is held until the default administrative page stock is loaded on the printer.
 - If Resource Based Scheduling is **disabled**, a message is displayed telling the user to load the requested stock.

Note If you are printing Administrative Pages (Banner Page, Error Page, Attribute Report) with your transparency job, ensure that the default administrative stock is loaded before running the job.

Job submission

2

This section addresses printer drivers, hot folder and multiple job submission, Remote Print Server, and web submission.

How to obtain the print drivers

Printer drivers are available on the CentreWare Printer Drivers CD that came with your machine or they can be downloaded from the Xerox Web site.

CentreWare printer drivers CD

The installation files for the Xerox system printer drivers are available on the print drivers CD. For updates and additional information, check the Xerox web site at www.xerox.com.

Printer drivers at the Xerox web site

Xerox system printer drivers can be downloaded from the Xerox Web site at www.xerox.com. The installation files for all Xerox system models are available from the Web site.

To download printer drivers:

1. Open a browser and access the Xerox web site.
2. Select [Support & Drivers] at the top of the window.
3. In the search area, enter the appropriate product family.
 - A window that supports that product family opens.
4. Find the appropriate printer and controller and select [Drivers & Downloads]
 - The Drivers & Downloads window for that printer opens.
5. Select your operating system (such as, Windows XP or Mac OS) from the Operating System list.
6. Select a language from the Language list
7. Select the appropriate driver information from the Drivers list.
 - There *may* be a recommended check marked driver listed as the first driver in the list.
 - If there is recommended driver, select this driver.
 - If there is not a recommended, check marked driver, select the one that best fits your printing requirements.
8. One of the following occurs:
 - An “End User License Agreement” window opens, or
 - The File Download window opens.
9. Select either the [Accept] or [Start] button to download the appropriate printer driver.
 - You are asked if you want to save or run the file.
10. Select [Save]. The Save As window opens.
11. Select a location for the file download.
12. Select [Save]. The Win-Zip file is saved to that location.
13. Close your internet browser.
14. Open the file location where the printer driver was saved.
 - Double-click on the Win-Zip file; the Win-Zip window opens.
15. From the Win-Zip window, select [Actions] [Select All].

16. Select the [Extract] button.
17. Select a file location to save the extracted files and click the [Extract] button.
The files are extracted to that location.
18. Select [Close] to close the Win-Zip window.
19. Continue to “Installing the print drivers” to install the print drivers.

Installing the print drivers

From the CentreWare printer drivers CD

Insert the CD into the disc drive. Installation instructions are provided on the CD; also refer to the CentreWare Printer Drivers Guide.

From the downloaded Win-Zip file

Refer to the instructions outlined in the CentreWare Printer Drivers Guide.

Hot folder submission

Hot folders provides a fast and convenient method to submit print-ready jobs into network folders. It enables users to drag and drop files into any Xerox Freeflow Print Server queue for automatic printing.

This supports both Page Description Language (PDL) jobs with or without Xerox Printing Instruction Format (XPIF) tickets. The ability to support XPIF tickets with PDL files adds flexibility when users want specific settings for jobs instead of default queue settings.

To enable Hot Folders, perform the following:

1. Right-click on a queue
2. Select [Hot Folder]
3. Select [Enable Hot Folder]

FreeFlow Print Server creates an associated Hot Folder for the queue and also creates an “Error” folder in the Hot Folder.

Note Only System Administrators can Enable or Disable Hot Folders. See the Online Help for more details.

Hot Folders directory

All the hot folders created by FreeFlow Print Server UI are stored at the directory: `/var/spool/XXnps/hotfolders`.

This directory is configurable through `/opt/XXnps/configuration/printSvc.config` file.

Workflow example

1. The user enables “hot folder” for the queue on FreeFlow Print Server GUI. For example, the user enables a queue called “skywalker_PRINT” on the “skywalker” machine.
2. The FreeFlow Print Server creates an associated Hot Folder for that queue and an “Error” folder in the Hot Folder.
3. The FreeFlow Print Server then exports the Hot Folder onto the network for job submissions. In this example, the user sees a folder named “skywalker_PRINT” with comments as “skywalker_PRINT Hot Folder”.
4. The user then drops several non-XPIF ticket associated jobs or XPIF pre-pended jobs that are ready to print into a Hot Folder.

The user wants to use a separate XPIF ticket for a data file and drops the data file in a specific location on the FreeFlow Print Server. The user then drops the associated XPIF ticket into Hot Folder.

For example, the user drops the file called “eightPages.pdf” into the skywalker_PRINT folder to be printed.

5. The Hot Folder Observer periodically (every five seconds by default) observes the hot folder for the presence of a job.
Upon detecting presence of a job, it sends the job to the FreeFlow Print Server.
6. When the job successfully completes printing, Hot Folder Observer deletes the job in Hot Folder.

If a job fails to submit, the Hot Folder moves the job to “Error” folder.

Support information

- By default, the value of polling interval is set to five seconds. This value can be changed under [System] [System Preferences] [Job Processing > Hot Folder].
- The Hot Folder feature does not affect normal job submission, processing, or printing.

Caveats

- The Hot Folder feature may not be available on Mac OS 9 since Mac OS 9 does not support SAMBA.
- There is no authentication support for Hot Folder access All hot folders are publicly visible.
- The FreeFlow Print Server does not know who the actual job submitter is. The sender name specified on the GUI is a generic name (and is “HotFolderClient”).

Troubleshooting Hot Folder problems

The following logs are important for troubleshooting problems; if there was no response from the agent to the browser, one or all for the followings can be done:

Note You must be root to use the following tools.

- # prstat
 - Shows activity of the processor and running programs. Often this is seen whether or not the **hf_observer** is still running. It may be that one of the processes that is using a lot of processor time is contributing to the reason the hf_observer cannot respond and therefore cannot submit jobs to the print server.
 - Normally, the user should see the hf_observer takes less than 1.0 % of the CPU time. The following line shows only 0.7 % consumption of the CPU time.
 - 1324 root 28M 7096K sleep 59 0 0:00:00 0.0 % hf_observer/4
- ps -ef | grep hf_observer
 - If you see the following line, the hf_observer is alive.
 - root 1324 1275 0 10:28:37 pts/12 0:01 ./hf_observer

JDF support via the Hot Folder feature

The Job Definition Format (JDF) is a job ticket and workflow specification language. It provides the means to describe print jobs.

The ability to support JDF job tickets with PDF data files adds flexibility when users want specific settings for jobs instead of default queue settings.

Technical overview

JDF job tickets are submitted through the Hot Folders feature. Upon receiving a JDF job ticket from Hot Folder (HF) Observer, the JDF Gateway (JDFGW) uses the JDF Toolkit to process the ticket and submit the data file associated with the ticket to the FreeFlow Print Server to print.

After each job submission to the FreeFlow Print Server, the JDF Gateway updates and outputs the JDF job ticket into a specific or a default folder.

The JDF Process

Receive JDF Job Tickets from Hot Folder

When a file is dropped in the Hot Folder, HF Observer checks if the file is a JDF job ticket. If it is, HF Observer submits the ticket to JDFGW.

Process JDF Job Tickets

The JDF Gateway is invoked to parse the ticket and create a JDF Node based on the ticket. The JDF Toolkit then transforms the JDF Node into a Combined Digital Printing (CDP) Node.

After a CDP Node is formed, the job attributes are converted into the common Common Print Semantics Specification (CPSS) representation.

Submit Data Files to FreeFlow Print Server

The JDFGW converts the CPSS representation of job attributes to the FreeFlow Print Server representation and submits data files along with these job attributes to the Print Server for printing.

Updates and Outputs JDF Job Tickets:

After each job submission to the FreeFlow Print Server, JDF Gateway updates and outputs the JDF job ticket into specific or default folders depending on the job submission status.

The updated JDF job ticket contains a relative job status and the process time required.

The location of a specific folder is specified in the JDF job ticket by “TargetRoute”. For example, a JDF job ticket has the following:

Job submission

....

```
<NodeInfo TargetRoute="/var/spool/XXnps/JDF_Output"/>
```

...

This means, that the updated JDF job ticket, after job submission, is moved to directory: “/var/spool/XXnps/JDF_Output/”

If such information does not exist in a JDF job ticket, then the default folders will be used to hold the updated JDF job ticket.

The default failure folder is named “error” and is a sub-directory of Hot Folder directory. The default success folder is named “output” and is a sub-directory of Hot Folder directory. Both names and locations of these default folders are configurable via the property file “/opt/XXnps/XXjdf/WEB-INF/classes/config/JdfJmfGateway.properties”.

Processes invalid syntax/value JDF Job Tickets

If the JDF job ticket has unsupported structural features, such as a JDF Process node that is subordinate to a Product node, or if it includes a supported attribute whose value is not supported or which has an invalid syntax (i.e., for which JDFToolkit returns a “Classification of Product Node failed” error), the job ticket cannot be converted to a valid print job. In this case, JDF GW puts the invalid JDF job ticket into the Hot Folder “Error” folder, and submits an (invalid) empty no data job to alert the FreeFlow Print Server operator to the error condition.

FreeFlow Print Server will display the following error messages:

- Processing Error - This job cannot be printed because the Job Data File or the Pathname does not exist or the Pathname is invalid.
Cancel the job and suggest that the job Data File or the Pathname be checked prior to resubmitting.
- System error occurred while attempting to process this job.
Please resubmit this job
Select clear fault to print this job or
Cancel job and resubmit

JDF Workflow Example

1. User enables “hot folder” for the queue in the FreeFlow Print Server.
2. FreeFlow Print Server UI creates an associate Hot Folder for the queue.
3. Hot Folder Observer will create an “Error” folder in the Hot Folder if a job fails to submit to the FreeFlow Print Server.
4. FreeFlow Print Server exports the Hot Folder onto the network for job submissions.
5. User drops a data file, in a specific location in FreeFlow Print Server. The submitter drops the associated JDF job ticket into Hot Folder.
6. Hot Folder Observer sends the JDF job ticket to JDFGW.

7. JDFGW processes the ticket and sends job attributes along with data file into the FreeFlow Print Server for printing.
1. When the job successfully completes printing, JDFGW writes the updated JDF ticket.
 - a. If the JDF job ticket is invalid or JDFGW fails to submit job into the FreeFlow Print Server, JDFGW writes the updated JDF ticket to “error” sub folder”.

JDF Considerations

- JDFGW does not support multiple input files. A JDF ticket that contains multiple input file specifications (e.g., front cover, back cover, and/or body content) must point to a single file.
- A JDF ticket must have “page range” attribute specified in the input file specification.
- If a JDF ticket has multiple file specifications, each specification must have “page range” set and be continuous.
- Job Submission Status in the updated JDF ticket only reflects the status of successful submission into FreeFlow Print Server.
- If a JDF ticket contains attributes with invalid syntaxes or invalid values, it will be moved to the “error” folder.

Troubleshooting JDF

The following logs are important for troubleshooting problems:

If there was no response from the agent to the browser, one or all of the following can be done.

1. Enter the following command at a terminal:

```
ps -ef | grep java
```

If you see the following line, the JDFGW is likely to be alive.

```
root 5845 1 0 Sep 07 pts/5 12:08 /opt/XXnps/XXweb/jre/bin/java -Xms128M -Xmx128M -Xmn32M -XX:MaxPermSize=64M -
```

Since JDFGW shares a single JVM with Internet Services Gateway, there is no single process dedicated to JDFGW.

In addition to this, look at the JDFGW log file

2. Logging files are located at /var/spool/XXnps/log/JdfJmfGateway.log.0
3. Upon a new restart of FreeFlow Print Server or new restart of JDFGW, the JDFGW log shows:

```
2006.06.06 16:27:07 INFO
com.xerox.gateways.jdfjmf.common.JmfGatewayListener init [thread-10] Gateway
Running on http://[server IP address will appear]
```

To indicate that JDFGW is running and now ready to process JDF tickets.

4. By default, JDFGW is configured to log all messages. There are many levels of logging:

SEVERE (highest value)

WARNING

INFO

CONFIG

FINE

FINER

FINEST (lowest value)

If you wish to change the level of logging, you can do so by editing the configuration file
/opt/XXnps/configuration/printSvc.config:

```
# Set the default logging level for the root logger
```

```
.level = <value>
```

With value being SEVERE/WARNING/INFO/CONFIG/FINE/FINER/FINEST

Multiple job submission

There are three menu selections in the Xerox Freeflow Print Services interface (Reprint Manager):

- Print Selected
- Proof Selected
- Print Now Selected

When one of these print options is chosen, a dialog box opens that presents the queue options. Once the user selects the queue to send the job, the Xerox Freeflow Print Server displays a window that tracks the progress and completion of each job submitted. The [OK] button becomes enabled when the job is complete.

Jobs may be submitted simultaneously based on job size. There is no hard limit to job submission. However, when submitting hundreds of jobs, performance needs to be considered since it may degrade.

The user always has the option of canceling the operation once in progress. This does not disrupt any job currently being run but prevents any further jobs from being submitted.

Web submission

With the Internet Services Web Client, you use a browser to access windows that enable you to select a document file, set up a job ticket, and submit your print job to the printer. This method of job submission does not require any software.

Note To use the Internet Services Web Client, you must have a print-ready file (a file that does not need to be modified), such as a PostScript (.ps), PDF, or PCL file.

Printing Using the Internet Services Web Client

To submit jobs using the internet services web client:

1. Enter the IP address of your printer in the URL field of your internet access provider and select [Search].

The web client interface opens.

2. Select the [Job Submission] button.

The Xerox Job Submission window opens.

Note Most of the options in this window are automatically set for Printer Default. To make selections, you must clear the Printer Default check box under each option.

3. Enter the print path of the file you want to print in the File Name field, or select [Browse...] to search for the file.
4. Clear the Printer Default check box under Hold Job, to enable selection of [Print Options: <job disposition>] drop-down list options Print or Save.
 - Print: Prints the job file and does not save it. This is the default setting. If you select this option, continue with Step 6.
 - Save: Saves the print file, including the current job ticket, on the print server but does not print the job. If you select this option, continue with Step 5.

Note Different printers save the print job in different ways. Refer to your printer documentation for more information on how each printer saves the job.

5. If you selected [Save] in Step 4:
 - Clear the [Printer Default] check box under Save Format if you want to select a save format for the job.
 - Clear the [Printer Default] check box under Saved Job Repository to select a location in which to save the job.
 - Clear the [Use Job Name] check box under Save File As to enter a new name for the job.
6. Clear the [Printer Default] check box under Hold Job to select whether the job should be held or not held at the printer. If you select [No], your job prints immediately. If you select [Yes], your job is held at the printer until it is released to print.
7. Clear the [Printer Default] check box under PDL Type to select a type of page description language (PDL) for the job. If you select an ASCII option, select the font and its size and the font orientation.
8. Set up the remaining job ticket parameters in this section of the Job Submission window as required. This window is divided into two sections:

- Basic printing section: This section at the top of the Job allows you to make basic selections for your print job.
- Basic printing section: This section at the top of the Job allows you to make basic selections for your print job.
- Advanced Features section: This section contains fields in which you can specify Image Adjustment and Job Notes settings.

Note Do not enter job names, sender names, or queue names that total over 140 characters.

9. If desired, record job notes by entering them in the fields in the [Job Information] section.
10. If you wish, select one of the following at the top of the window:
 - Save My Default Ticket: Saves your current selections as the default ticket for other print jobs.
 - Restore My Default Ticket: Restores the current settings to your default job ticket, if you created one previously.
 - Restore Queue Default Ticket: Restores the current settings to the queue's default job ticket.
11. Select the green [Print] button to send the document file to the print queue.

Note Select the [Administration] button to check the status of a job as it is printing.

Remote Print Server

Overview

FreeFlow Print Server Remote Print Server (otherwise known as Remote Workflow) software provides the user a means to view, interact with, and monitor high level status on multiple FreeFlow Print Server Workstations from a single remote PC or Sun workstation. It provides real time status of the printers, and the ability to display the complete user interface of the remote printer, and to manage the printer from that user interface. The user can switch between the printers being managed; however, only one user interface can be displayed at a time.

You can also program job tickets and manage jobs using Remote Print Server. You can move, forward, promote, and delete jobs, as well as other tasks.

Remote Print Server provides access to nearly all of the FreeFlow Print Server features and functions from a remote location.

Features

The Remote Print Server features include:

- Ability to manage connections to FreeFlow Print Server supported printers from a single point location
- Ability to manipulate the FreeFlow Print Server Workstation from the client PC. This includes:
 - Job management
 - Queue management
 - Reprint management
 - Printer management
 - System administration
 - Color management activities (color printers only)

Notes and caveats

There are certain activities that should not be performed when using Remote Print Server, and there are a select few features that are disabled for use with Remote Print Server.

The list of unsupported features and activities is as follows:

- To access a FreeFlow Print Server controller, the Remote UI tab must be enabled in [Setup: Preferences], and the Remote Print Server software installed on a workstation. The installation instructions for the Remote Print server software are included with the Remote Print Server CD kit.
- You may not access diagnostics through the Remote Workflow. The Diagnostics menu items do not appear in the Main GUI window Setup menu. If diagnostics is entered at the FreeFlow Print Server controller, all Remote Workflow connections are automatically disabled.
- You are unable to change language settings in the [System Preferences: International] tab, which is accessed from the Setup menu. The language settings do not appear in the window.
- You are unable to access the [User Preferences: Onscreen Font Size] tab.

- You should never select Disable all Connections in the [System Preferences: Remote Workflow] tab. If you select this option, you cannot use the system until you can arrange for the Remote UI settings to be edited back to their Enabled state.
- Menus accessed using the right mouse button selected near the edge of the screen may go off the screen, hiding some selections. Shrinking or moving the main window should allow for full menu viewing.
- The minimum recommended video resolution is 1152 x 864.
- Add-on applications to the FreeFlow Print Server and any third-party applications loaded on the FreeFlow Print Server controller are not accessible remotely using the Remote Print Server software. Terminal windows to the Solaris operating system also cannot be accessed remotely using the Remote Printer Server.

FreeFlow Digital Workflow Collection

The Xerox FreeFlow Digital Workflow Collection is a collection of software and hardware solutions designed to improve and enhance print production workflows. These solutions enable the user to reduce costs, improve operational efficiencies, generate additional revenue streams, and create greater profit potential by integrating new technologies and capabilities into your current workflow environment.

The FreeFlow Digital Workflow Collection includes:

- FreeFlow Web Services: Provides a web storefront for users to submit new jobs and reorder existing ones - in a secure environment from virtually anywhere.
- FreeFlow Process Manager: Automates repetitive prepress activities in order to maintain high quality and consistency while reducing errors.
- FreeFlow MakeReady: Simplifies complex, labor-intensive make-ready operations with robust, sophisticated tools in a WYSIWYG environment.
- FreeFlow Print Manager: Offers integrated print management and full job ticketing, as well as a single point of access to all Print Manager-supported printers.
- FreeFlow Variable Information Suite: Empowers the user with the ability to turn variable data and images into high-value variable content documents at rated printer speeds.

Printing and queue management

This section addresses how to set printing workflow. It also describes the printing utilities that are available in the Xerox FreeFlow Print Server software and how to use the Print Server for TIFF orientation, and VIPP printing.

Printing

Printing workflow options

The two printing workflow options available are First In/First Out (FIFO) and Resource Based Scheduling (RBS).

FIFO out can be set either on a limited scheduling/printing basis or as the default printing workflow for the site. In either case FIFO printing provides the capability to force jobs to fault and print in FIFO order without regard to available paper stocks and other variables. Typical applications include zip sorted work, VI print-for-one, direct mail and financial data.

Resource Based Scheduling, which is the initial default option, places jobs for which resources are available into the print stream first. Jobs that require additional resources, like media, are placed in an ineligible state awaiting resource availability. Resource Based Scheduling optimizes the utilization of the printer.

First In/First Out (FIFO) printing

Workflow is referred to as FIFO when jobs are printed in the same order in which they are received. For FIFO printing, the Queue must also have the Release status set to Yes.

To set FIFO scheduling, perform the following:

1. Select [Setup] on the main menu.
2. Select [System Preferences].
3. Under Scheduling Mode, click FIFO.

Note See the Online Help for detailed procedures.

Resource based scheduling

Resource Based scheduling is the default setting on the Xerox Freeflow Print Server. It schedules jobs only as the resources available to run them become available.

To set Resource Based scheduling, perform the following:

1. Select [Setup] on the main menu.
2. Select [System Preferences].
3. Under Scheduling Mode, click Resource Based Scheduling.

Note See the Online Help for detailed procedures.

Parallel RIP processing

The operator can choose to enable or disable parallel RIP. If VI Object Cache is enabled then Parallel RIP is automatically disabled. Likewise if Parallel RIP is enabled then VI Object Cache is disabled.

The Xerox Freeflow Print Server processes the workflow in the following way:

1. Is the first job eligible for Parallel RIPing? If yes, the Xerox Freeflow Print Server processes the job using all the available Parallel RIPs and no additional jobs can be processed.
2. If no, the Xerox Freeflow Print Server routes the first job through a single RIP.
3. The Xerox Freeflow Print Server determines whether the next job is eligible for parallel RIPing.
4. If yes, the Xerox Freeflow Print Server processes the job using all the remaining RIPs. No other job can be RIPed until one of the jobs is completed.
5. If no, the Xerox Freeflow Print Server routes the job through the next single RIP path. The Print Server continues through the cycle.

ASCII and PCL printing utilities

ASCII printing within various environments results in output that is not always formatted as desired. Unfortunately, there is no “standard” method for printing ASCII files. ASCII is a character set and not a Page Description Language. Therefore, ASCII files do not contain format commands. Furthermore, there is no de facto standard for ASCII formatting.

Nonetheless, users often have the requirement to match a specific format. The utility below enables this formatting flexibility along with a feature in Queue Manager that allows the administrator to select the default document format.

ASCII and the PS or PCL decomposers

The Xerox Freeflow Print Server software automatically wraps ASCII files with a predefined set of PostScript code and sends the data through the PostScript decomposer. Unfortunately, this predefined formatting does not always meet customer ASCII printing needs and there are no “knobs” to change the formatting within PostScript.

As an alternative, ASCII files can be identified as PCL and sent through the PCL decomposer. The PCL decomposer does provide some additional capabilities that can be used to modify ASCII files as desired.

To force ASCII files to use the PCL decomposer, change the file format in Job Manager. This can also be done by changing the queue default document property from ASCII to PCL.

setpclcontrol utility

The setpclcontrol utility offers the following user controls:

- Set the site default for the PCL decomposer line termination. Setting these options allows both native PCL files and ASCII streams forced through the PCL decomposer to be conditioned with various combinations of carriage returns (CR), line feeds (LF), and form feeds (FF). Mainframe and UNIX environments typically require some form of CR/LF/FF adjustment.
- Set a custom paper size to map to the PCL escape sequence <esc>&l101A (which denotes “print on custom stock size”).

HP printers generally respond to this command by imaging an area of 11.7 x 17.7 inches and then printing the image, centered, on whatever stock is supplied by the operator. The setpclcontrol utility allows you to specify a single image and paper size to correspond with this escape sequence.

Note This utility is now covered on the Xerox FreeFlow Print Server interface. Click the PCL tab and make selections to Line Termination.

setlp/lprcopycount utility

The setlpcopycount utility allows the Xerox Freeflow Print Server customer to modify how the lp/lpr gateway handles a copy count of one. Beginning with DocuSP version 1.41.06, the default setting ignores a copy count of one placed on the job by the lp/lpr submission protocol. This allows the internal copy count set by the PDL to take precedence.

The following utility allows a customer to return the Print Server to its original behavior, that is, either imply a copy count of one when none is specified or honor a copy count of one if specified on the command line. This copy count of one takes precedence over the copy count set by the PDL.

Syntax of the utility:

setlpcopycount -f option0 - Specifies that LP will set a copy count of 1 if received.1 - Specifies that LP will ignore a copy count of 1 if received.(default)No option will display current setting

Example:

```
printserver_printer% su rootPassword:# cd /opt/XRXnps/bin/#./setlpcopycount -f 0
```

LP/LPR compatibility with Print Server

Print Server-driven systems can now be targeted to existing NPS customers, both black and white and highlight color. The Print Server now supports the following options.

NPS lp-o and lpr-c

The lp/lpr options are received by the LPR gateway and mapped to Print Server attributes.

The following NPS lp/lpr options are supported:

1. NPS general options
 - C"(acct=<text>)" (account information)
 - C"(collated)"
 - C"(uncollated)"
 - C"(copies=<n>)"
 - C"(drilled)"
 - C"(format=<pdl>)" (document format)
 - C"(media=<n>x<m>)"
 - C"(pr=<n>-<m>)" (pages to print)
 - C"(size=<n>)"

- C"(xshift)" (horizontal image shift)
 - C"(yshift)" (horizontal side 2 shift)
 - C"(xshiftback=<n>)" (vertical image shift)
 - C"(yshiftback=<n>)" (vertical side 2 shift)
 - C("<nostich" | nostaple | stich | staple>|
2. Page order override
 - C"(ton)"
 - C"(nto1")
 3. Background forms
 - C"(bf=<background form>)" (background form)
 - C"(cf=<n>)" (cycle from start location)
 - C"(disposition=<savemaskG4 | saveformG4>)"
 4. Selectable halftone (not including full color)
 - C"(halftone=<defaultHalftone | course | mediuem | fine | extrafine>)"
 5. Highlight color (highlight printing color)
 - C"(hc=<color>)" (highlight color mismatch action)
 - C"(hcm=<abort | ignore | operator>)" (highlight mapping color scheme)
 - C"(hrc=<pictorial | presentation | colorToHighlight | automatic>)" (highlight mapping color)
 - C"(mc= <color>)"
 6. Hold job for manual release
 - C"(hold)"
 7. Selectable resolution
 - C"(res=< | 300 | 600 | >)"
 8. Other
 - C"(pcl5c)"

Highlight color programming in ASCII job ticket

The administrator can submit job programming parameters that identify the algorithm and mapping to be used for rendering full color into highlight color printing. The user may also specify what action to take if there is no match.

For monochrome printing in gray scale, black is selected as the highlight printing color.

The Print Server supports the following records in the ASCII job ticket:

- %XRXhighlightPrintingColor: {blue | red | green}
- %XRXmismatchedHighlightPrinting Color: {Abort | SelectCurrent | Intervene}
- %XRXhighlightMappingAlgorithm: {Automatic | ColorToHighlight | Pictorial | Presentation | Monochrome}
- %XRXhighlightMappingColor. {black | red | green | blue | cyan | magenta | cardinal | royalBlue | ruby | violet | brown | yellow, loadedColor}

Resource based scheduling for NPS color

To support the use of DSC comments in Resource Based Scheduling, the preprocessor scans the DSC comments and map them to job attributes. The Job Chooser reconciles the attributes to determine the resources required by the job.

The following table lists the highlight color DCS comments supported.

DCS Comments for Highlight Color

DSC Comment	Option	Parameters	Notes
% % Beginning Feature	HighlightMapping Algorithm	{none,automatic,colorTables,colorToHighlight,pictorial,presentation}	Ignore none and ColorTables
	HighlightMappingColor	{none, black, blue, brown, cardinal, cyan, dontCare, green, magenta, other, red, royalBlue, ruby, unknown, violet, yellow}	Ignore none, dontCare, other, and unknown.
	HighlightPrintingColor	{none, black, blue, brown, cardinal, cyan, dontCare, green, magenta, other, red, royalBlue, ruby, unknown, violet, yellow}	Ignore all except black, blue, green, and red.
	MismatchedHighlightPrintingColor	{none, abortPrint, requestOperatorIntervention,useLoadedColor}	Ignore none, MapabortPrint to CancelJob. Map RequestOperator Intervention to HoldJOB

Note NPS options can be specified using `lp -o` and `lpr -C` from the command-line.

Socket gateway configuration utility: setVPSoption

This utility allows you to configure the two ports of the Socket Gateway to either remove the echo commands (VPS) or leave the data unaltered (NONVPS).

If you are a DT61xx or DT65/75/90 non-LCDS customer, configure both ports as NONVPS. DP1xxxEPS and DT 75/90 customers using LCDS need to decide whether to configure one or both ports as VPS. If a port is not being used, it is recommended to set the port to NONVPS.

The Socket Gateway allows two ports to be configured at one time. Regardless of the port number assigned on the Socket Configuration Utility, the socket port configured on the first port is always Port 1, and the second line is always Port 2. Both ports are set as VPS upon installation. set as VPS upon installation. Syntax of the utility:

```
setVPSoption -1<option> -2<option>
```

0 - Specifies Port 1

1 - Specifies Port 2

option -VPS(default) or NONVPS

An example of the utility is as follows:

```
printserver_printer% su root
```

Password:

```
# cd /opt/XRXnps/bin
```

```
# ./setVPSoption -1VPS -2NONVPS
```

This sets Port 1 as VPS and Port 2 as NONVPS)

```
# ./setVPSoption -1VPS
```

This sets Port1 as VPS and leaves Port 2 unaltered.

```
# ./setVPSoption -2NONVPS
```

This leaves Port 1 unaltered and sets Port 2 as NONVPS.

Restart the Print Server software after setting this option.

Note Refer to the Security Guide for more information on the Secure Socket Layer.

TIFF files

This section discusses the TIFF tags supported by the Print Server software and the guidelines for printing TIFF files to achieve the optimum performance.

GetTIFF and GetForm

The GetTIFF and GetForm operators provided in the Print Server software allow the administrator to place a variety of external objects on the page that are not supported by the native PostScript language. These operators support TIFF files, PostScript segments, PostScript files, EPS files and baseline JPEG (JFIF) files.

The GetTIFF and GetForm operators take the name of the file that contains the external object and, using the default coordinate system, places the lower left corner of the object in the lower left corner of the page. Then the administrator can manipulate the object using standard PS procedures.

The GetTIFF and GetForm operators are encapsulated and do not affect the Graphics state parameters, like color or font. Additionally GetTIFF and GetForm execute the same sequence of calls that are involved in Xerox Forms Caching.

If the job size is greater than 200 pages and a VIPP license or demo license applies, then the job faults via standard VIPPS error pages.

Note The Enable Caching/Disable Caching (of Fast Forms) selection found in the Postscript/PDF tab on the queue is not overridden by the use of GetTIFF or GetForm.

Note The “Enable/Disable Accelerator” cache in Preferences activates cache for traditional PostScript jobs and does not apply to GetTIFF or GetForm.

TIFF orientation

The Print Server Save Feature stores TIFF images in different orientations on the DocuTech/DocuPrint 75/90 and the DocuTech 61XX. This is done by design to optimize productivity and allow for the different finishing requirements of the print engines controlled by the Print Server software. The following products have these options:

DocuTech 61xx -- The DocuTech 61xx finishes the trail edge of the pages and orients the image appropriately.

DocuTech/DocuPrint 75/90 -- The DocuTech/DocuPrint 75/90 finishes the lead edge of the pages and orients the image properly.

This difference can result in PostScript/VIPP files that call Decomposition Service TIFFs being incompatible across the different platforms. The imported TIFFs may print with a different orientation relative to the PostScript image.

Prior to Print Server 3.1, the controller utilized a conversion tool (TIFF to PostScript) to process and print TIFF files. A native TIFF decomposer has now been implemented to directly process TIFF files for printing. This improves the TIFF printing performance for certain types of files. Decomposer level adjustments are also now available for the TIFF decomposer at the Queue level.

Note Multipage TIFF files are supported. Single TIFF files can contain multiple TIFF images to be processed and printed.

Supported TIFF tags

Below is a list of the TIFF tags supported by the Print Server software.

Compression

- Default = 1
- The Print Server supports values of 1 (uncompressed), 2 (CCITT Modified Huffman RLE, 32773 (PackBits), 3 (CCITT Group 3), and 4 (CCITT Group 4).

T4 Option

- Default = 0
- This is used to determine CCITT Group 3 one or two dimensional coding.

Fill Order

- Default = 1
- The Print Server supports values of 1 and 2.

Image Width and Image Length

- Default = none; values must be supplied.

Orientation

- Default = 1
- The Print Server supports values of 1, 3, 6, and 8. Values of 2, 4, 5, and 7 are treated as if they were 1, 3, 6, and 8 respectively.

Photometric Interpretation

- Default = none; value must be supplied.
- The Print Server supports bi-level values of 0 and 1 only.

Resolution Units

- Default = 2
- The Print Server supports values of 2 (inches) and 3 (centimeters)

Rows Per Strip

- Default = none
- The Print Server supports single and multiple strip images.

Note

Note Strips and tiles cannot be intermixed within the same TIFF file.

Strip Byte Counts and Strip Offsets

- Default = none; values must be supplied if the image data is organized into strips.
- The Print Server supports single and multiple strip images.

X and Y Resolution

- Default = none
- Values must be supplied for printing.

Tile Width, Tile Length, Tile Offsets, Tile Byte Counts

- Default = none
- Values must be supplied if image data is organized into tiles.

Administration page controls

The Print Server permits the user to enable or disable the printing of Administration/Banner pages on a queue or job basis. This allows the site to control when and how the banner and error pages are printed.

The default setting by queue is set to enabled. The behaviors of the banner and error pages follow Print Server precedence, that is overrides, job level and so forth.

Performance considerations

Optimum performance can be achieved for printing TIFF files by following the guidelines listed below:

- Use CCITT Group 4 compression for speed.
- Use a resolution of 600 dpi to eliminate the need to scale the image.
- Use a TIFF orientation tag value of 8 to eliminate the need to rotate the image.
- Use single strip image data to eliminate additional image data manipulations.
- Use a value of 1 for Fill Order to eliminate additional image data manipulations.

Using VIPP

To specify a job as a VIPP job, a start string is required. The required start string can be automatically added using Print Server functionality. This can be completed using the Command Line Client, Queue Manager, and Job Properties.

To implement the VIPP Start feature, perform the following:

1. Copy the VIPP startup file into `/var/spool/XXnps/vipp` and then restart the Print Server. The file must exist in this directory and cannot be changed. However, you can set a symbolic link to other locations.

Note The startup file must end with a lowercase.ini extension

2. In Queue Manager, create a print queue named VIPP. Change the default document format from ASCII to PostScript. If this is not done, all VIPP jobs runs as ASCII unless the data file begins with “%!”.
3. Select the PDF/PostScript tab, and select [Start File]. Browse to the startup file and select this file.

The CACHE command stores a form across a single VIPP job so only the first instance is a normal RIP. After the first RIP, the form is called in the job and it is retrieved from hard disk in a format natively understood by the IOT. VIPP CACHE is available for color products only.

Repository management

The Print Server provides a number of options in saving jobs to the Save Job Library (S JL). Jobs can only be saved to the local directory or a CD-RW. Jobs cannot be saved to the network.

Based on the type of input there are some additional limitations to save job options.

Save job options

Under the System Preference Save selection, there are three options to use as the default save method. The site must pick the option that best suits its overall job workflow:

- **Rename job.** This option automatically attaches a version number to the job and saves the job to the repository. The new job has a version number in an.nnn format.
- **Overwrite Job.** This option replaces the old version of the job.
- **Fault Job.** This option aborts the save attempt.

If the new job's name matches that of an existing job, the system proceeds according to the user's selection. The job format, PDF, TIFF or other file format, is not considered in name comparisons.

If the file has the same name, it is considered a duplicate. A new name follows the TIFF format in creating its version number. For example:

MyJob.ps.frf

MyJob.ps.001.frf

When a job is replaced all remnants of the previous job are erased. Once a job has been replaced there are no provisions for recovering that job.

System logs reflects when a job has been replaced and when new versions have been created.

The job overwrite option is supported for the following formats:

- For scanning: PDF, single-page TIFF, multiple-page TIFF (with job ticket)
- For copying: Multiple-page TIFF (with job ticket)
- For RIPing: PDF, single-page TIFF, multiple-page TIFF (with job ticket), FRF.

For highlight color, the single-page TIFF format that includes two images per page (black and highlight color) is supported.

Scan to digital input on Nuvera 1xx

Only Nuvera 1xx products have the capability to use the Scan interface and save a file. This feature enables the operator to scan a file, browse a file path to save the job and specify a name for the saved file. In saving, the operator is limited to these file formats:

- PDF
- Single Page TIFF
- Multi Page TIFF

Copy input for multiple page TIFF files

From the Copy user interface, the operator can Save, Print or Save &Print multiple pages in TIFF format. The job is saved or printed per operator selection.

If the option is to save, the Save Facility calls the Save Job Library to save the job in TIFF format.

Note If the product being used supports a scanner, any image related to the job is saved without the image manipulation that was programmed in the job submission. However, the instructions are stored in the Saved Job Ticket to be used in job programming when reprinting.

RIP input

In saving, the operator is limited to these file formats:

- PDF
- Multi Page TIFF
- Single Page TIFF

From the RIP input path, the operator chooses Save, Print and Print&Save. The input facilities (CDF or Scan Facility) call the Common Buffer Manager to generate saved and print-ready images for color or black and white products.

The print-ready images are sent to the Phoenix image disk while the save images are sent to Save Facility for consumption.

Copy/move/delete saved jobs

For jobs saved to the local drive, the administrator can copy, move or deleted the following formats as soon as the job ticket file exists:

- FRF
- Multipage TIFF
- PDF

The Print Server invokes the Save Facility which calls the Save Job Library to process the request.

Note

Note Copy/move/delete functions are only for files specified with the job ticket in the legal job format on the Print Server system. These functions can only be performed on the local disk with the job ticket.

The user interface invokes the necessary scripts to complete the operation requested.

Copying and saving jobs to CD

For jobs saved to a CD-R/W, the Save Facility calls the PM Library to copy or save the jobs. However, move job is not supported.

The user can specify CD-RW as the Save Output Destination in the Queue or Job Properties. The user then browses the directories to save to the desired location. To improve performance the images of a job are saved to a temporary location first and then written to the CD once the last page has been RIPed.

For systems with a scanner, the user can also select the CD as a save location.

Note

Note There is no way to delete a file from CD; a user can only delete all sessions or the last session. Any deleted sessions cannot be reclaimed for reuse.

Note

Note Writing to a CD requires that the data be supplied at a constant rate. It is advise to keep activity to a minimum during high write periods.

Saving custom templates

The operator can create a customer template as well as program any combination of imposition settings and save them under a unique user-specified name as a "Save As User Defined Template."

The template later appears in the Layout Style drop-down menu. When it is selected, it displays all the previously programmed settings. These can be modified or left in tact. The template can also be deleted at any point.

Job previewing and editing

The Print Server has a number of editing features for saved jobs.

Editing thumbnails

For the DT100/120 family of products, the Print Server enables the user to preview saved job in PDF, TIFF, PS or FRF file formats. The Job Preview function allows the user to view both a thumbnail image, that is a Thumbnail Resolution Image (TRI) and a full display of the saved image, that is a Display Resolution Image (DRI).

The Job Preview provides a menu offering the user a number of features:

- Fit the image to page
- Rotate the image
- Scale the image
- Fit the image to the page by height and width
- Select the page
- Go to the next page
- Go to the previous page
- Go to the end of the page
- Go to the front page

The Job Preview function can be accessed by right clicking the job listed either in the Printer Manager or the Job Manager.

Using the PDF editor

The PDF editor allows the user to edit both FRF files for color systems and black and white systems. The PDF editor is a full page editor that allows the user to merge pages as long as they are in the same file format.

The PDF editor offers the user these features:

- Insert page
- Delete page
- Undo functions for the saved job
- Importing pages for other saved jobs

Printing hints

If you compress the resolution of an embedded bitmap object at the application level, you can produce smaller PDF files. This allows your job to transfer across the net faster and requires less Print Server spool/disk space, and may process faster.

Queue management

The Queue Manager window displays all the queues available on the printer. Think of each queue as a virtual printer with unique characteristics defined when the queue is created. The queue list displays the name, priority, and job acceptance and release status for any queues available on the system.

Queue management involves creating and enabling queues to receive jobs to help manage the flow of jobs through the printing system. Queues allow you to manage jobs by:

- Controlling when to accept jobs from the network or host.
- Controlling when to release jobs.
- Defining default parameters (like 1- or 2-sided) for jobs.
- Overriding job parameters.
- Feeding from a specific tray rather than specifying a paper stock (generally used for LCDS jobs).

Access Queue Manager by selecting [Queue: Queue Manager...] menu option, or the Queue Manager icon on the shortcut bar.

Refer to FreeFlow Print Server Help for more information on the Queue Manager.

Transaction printing

FreeFlow Print Server handles transactional data such as Xerox LCDS and IBM IPDS. This section briefly covers considerations for these types of data streams, and cites references for more detailed information.

IPDS (Intelligent Printer Data Stream)

IPDS, or Intelligent Printer Data Stream, is a print data stream defined by IBM.

IPDS is an optional feature for FreeFlow Print Server and is enabled by a single license called IPDS Interpreter License. If your system does not have the IPDS license, the FreeFlow Print Server IPDS dialogues and the FreeFlow Print Server IPS Manager menu do not display on your system.

IPDS data is a sequence of information transmitted by an IBM host computer as directed by a host print application, such as the Print Service Facility (PSF). In addition to delivering print information, the IPDS data stream performs printer control functions and shares job status information.

Note

Note PSF is an IBM software product that controls IPDS printers and forwards Advanced Function Presentation (AFP) data to the printers in the IPDS language used by IPDS printers.

FreeFlow Print Server IPDS supports the TCP/IP and online channel interfaces.

FreeFlow Print Server IPDS provides the ability to:

- Print the standard IBM IPDS data stream.
- Properly image all IPDS-required print resources and fonts.
- Support printing systems and feeding/finishing equipment supported by FreeFlow Print Server.
- Recognize and process all supported IPDS commands from the IBM channel and AFP software.

Note

Note AFP, or Advanced Function Presentation, is a collection of programs used to format and print documents by defining the exact placement of resources on a printer page.

IPDS Interpreter license

FreeFlow Print Server support for IPDS is enabled with an optional IPDS Interpreter License. When this license is active, the following features are enabled on the controller:

- The IPDS Interpreter
- An IPS menu selection on the System GUI. This enables IPDS to be invoked.
- An IPDS graphical user interface to apply settings.
- A TCP/IP socket to provide connectivity to a host system storing the IPDS print jobs.
- A Channel bus and tag or card.

IPS Manager

The IPS Manager selection on the FreeFlow Print Server System GUI enables an operator to access management functions and use them to configure IPDS options not otherwise available on the controller. The main IPS components are:

- File pull-down menu – Enables an operator to select and load an existing job setup, to create and save a new job setup, and to delete a job setup.
- System pull-down menu – Enables an operator to go online or offline, stop or continue jobs, cancel an incoming job, perform system configuration, manage resident fonts, and capture or playback an IPDS diagnostics trace.
- Job Settings tab – Enables an operator to set up the following for a specific job or class of jobs: Resource Resolution, GOCA Image Resolution, End of Set Criterion, Output Queue, Replicate and Trim, Enhanced Font Support, and Emulate Continuous Form.
- Tray/Bin Mappings tab – Enables an operator to map FreeFlow Print Server physical trays to virtual IPDS trays. The contents of the virtual IPDS trays are reported back to the host. The operator can view and modify stock attributes so that they meet the needs of the IPDS print jobs to be run.
- Operator Commands – Applicable to both the Job Settings and Tray/Bin Mappings tabs, these commands enable an operator to Go Online or Go Offline, Stop or Continue receiving IPDS data from the host, and Cancel an incoming IPDS job.

IPDS with AFP

IBM's Advanced Function Presentation (AFP) is a collection of programs that can be used to format and manage documents independently of printer hardware. It enables users to control formatting, paper output form, printing or viewing online, and document storage across multiple operating system platforms. AFP is implemented on various platforms by Print Service Facility (PSF) software. This software generates the device dependent IPDS. Some IBM systems, such as AIX, use InfoPrint Manager, rather than PSF to accomplish this translation. FreeFlow Print Server supports IPDS emitted by either PSF or InfoPrint Manager software.

In order to print IPDS jobs, the host system must transform the print job data into IPDS raster data and control data consistent with IBM publication S544-3417 Intelligent Printer Data Stream Reference. For host operating systems that support AFP, such as Z/OS (MVS) and OS/400, the host decomposes the AFP commands into appropriate IPDS commands and data. Some host systems, from vendors other than than IBM, emit IPDS directly rather than using AFP as an intermediary format.

Note that IPDS printers are centrally managed from the host system. Resources, such as fonts, usually reside on the host and are transferred to the printer when needed, rather than being stored permanently on the printer.

LCDS (Line Conditioned Data Stream)

LCDS (Line Conditioned Data Stream) jobs are accepted from a channel-attached mainframe, from networked workstations and from a tape client.

The Process of Printing an LCDS Job

Before LCDS data can be sent to the printer, the printer operator must perform the following tasks:

- Load all the resources on the printer. These resources include fonts, images, forms, and the printing instructions.
Every LCDS job requires resources such as fonts, images, forms, logos, and a JSL. These resources must be loaded at the workstation prior to running the job. You can view and print a list of LCDS resources on the system.
- Set up the trays
- Activate the queue
- Load the paper for the job to print properly

When the printer is set up for a job's requirements, the host operator can send the job data. When printing is complete, the printer operator performs procedures to end the data transfer. This can be done automatically by a timer or by a command in the data stream.

Note

Note Sometimes LCDS jobs are so large that they can fill or exceed the hard disk capacity of the system. The Job Partitioning feature enables the system to manage the internal disk capacity. Select [Setup: System Preferences] and select the Job Policy tab to make partitioning selections.

To view LCDS resources

1. Select [Administration > LCDS Resources...] menu option. The LCDS Resources window opens.
2. Determine where the resources are located and select one from the Source drop-down list:
 - System
 - Unix File System
 - CD-ROM
3. Select the [Types...] button to view the System Resource Types. Select one of the following:
 - User Specified
 - Library
4. Right-click on any resource and select [Properties] menu option to view the properties of that resource.

Printing LCDS Sample Resources

To print LCDS resources:

1. Right-click on a resource and select [Sample] menu option. The Sample Resources window allows you to specify how you want the sample resource to print.
2. For example, select:
 - A queue
 - Image Output
 - Scaling
 - Document Options
 - Quantity

Printing the LCDS Resource List

To print the LCDS resource list:

1. In the LCDS Resources field, right-click and select [Print List] menu option to print a list of LCDS resources on the system.
2. Specify how you want the list to print. For example, select:
 - A queue
 - Sides Imaged
 - Quantity
3. Select the [Print] command button.

LCDS Queue information

To set up queues for LCDS jobs, you should consider the following:

- The Destination Save property is not used for LCDS jobs.
- When you set up a queue for LCDS jobs, you must define whether the job will be printed in spooling or streaming mode:
 - Use Streaming if you want jobs to print while they are still in the process of being sent to the printer. This is useful for long jobs. Chunks of data are printed as they are received. Printing does not wait for the entire job to be received, and there is less chance of the disk becoming full.
 - In general, for on-line printing of large jobs, use a queue that has been set up for streaming mode.
 - When a job has been sent to the printer in streaming mode, END must be selected in the On-line Manager before RIPPING can begin.
 - Use Spooling only if you want jobs to print after the entire data stream has been received at the printer. This means you must enter a Drain command to complete each job.
- Use the LCDS tab to set up the Initial JDL, Initial JDE, and other properties associated with the LCDS job.

Note

Note Some LCDS jobs are very long and take hours or even days to complete. If you need to print another job before a long LCDS job has completed, you can use the Job Pause/Interrupt feature. This pauses the current job so you can print the other job. You may then resume the interrupted job.

LCDS Queue Options

Before starting a job, you must specify the initial job descriptor library (JDL) and job descriptor entry (JDE) that is used for the job and for all the reports within the job printed at that time. The JDL and JDE define the appearance of the printed job. These job options can be selected in Queue Manager.

To select LCDS queue options:

1. Open Queue Manager, by selecting [Queue > Queue Manager...] menu option or the Queue Manager Icon on the Shortcut bar.

2. Right-click a queue and select [Properties...] menu option
3. Select the [Queue Properties: PDL Settings] tab
4. Select the [LCDS] FAB (Feature Access Button)

IPDS and LCDS reference resources

For more information on IPDS and LCDS, the following resources are available:

- Xerox FreeFlow Print Server IBM IPDS User Guide
- Xerox FreeFlow Print Server Using LCDS Print Description Language
- Print Description Language for Xerox FreeFlow Print Server Users (see your analyst for information on this guide)

You may also contact your Xerox Customer Analyst for more information on both IPDS and LCDS.

Finishing

4

The following section contains information about how to use subset finishing and mixed stacking on a printing job.

The finishing information below does not apply to Continuous Feed (CF) systems. For CF systems, the finishing configuration is defined at the CF (STAMPA) Controller. CF imposition files are used to impose documents for printing in conjunction with specific CF finishing configurations.

Subset finishing

Subset finishing is the capability to use different types of finishing (or no finishing) within the same job. The ability to finish subsets independently is a critical feature for many variable data applications.

This product allows more than one type of finishing within a single PostScript job. The supported finishing options and the output locations that can be used vary depending upon the printer type. The finishing options and delivery locations are the following:

- Portrait Stitch
- Landscape Stitch
- Dual Stitch
- Right Portrait Stitch
- Right Landscape Stitch
- Right Dual Stitch
- Bind
- Right Bind

Note The DT 61xx printers allow Short Edge Feed (SEF) only in paper tray 3, 4, and 5. The short edges of the stocks range from approximately 10 inches to 14 inches (254mm to 300mm).

Creating jobs to use subset finishing

It is important that jobs intended to be printed using subset finishing be enabled with the following:

- PostScript code (using the “setpagedevice” operator)
- Variable Data Intelligent PostScript PrintWare (VIPP) version 2.0 or later.

Note Subset finishing can also be performed at the FreeFlow workstation through the Document Scan and Make Ready application.

Subset offset (Page Level Jog)

The printer has the ability to offset on a page level. This support allows VIPP to be utilized for offset type applications. This ability permits jobs to be sent as one larger file with page level offset commands.

The term “Jog” is used to initiate offset behavior.

- setpagedevice jog 0 (The offset command is “OFF”).
- setpagedevice jog 3 (The offset command is “ON”).

A job with a multiple copy count with a “jog 3” should force offsets between each distinct set. A job with a copy count of 1 can contain “jog 0” or “jog 3” on a page by page basis. The system will alternate offsets between each alternating jog 3 and jog 0 command.

The following information should be considered when using the “Jog” command:

- The first jog command on a page will be honored and all others will be ignored.
- Multiple cases of jog 3 without the corresponding job 0's will be ignored.

- The Printer Manager's setting of offset "ON" or "OFF" should not impact the action of the PDL level jog commands. For example, if the Printer Manager's offset is set to "OFF" and a job has a jog 3, then the sets should be offset from one another.
- The DT/DP 75/90 allows subset offsets to the top tray. However, the 61xx is not mechanically capable of jogging to the top tray.

PCL offset/separator/subset finishing command

The use of the PCL separator command, <ESC>&l1T, in combination with Xerox FreeFlow® Print Server queue defaults, enables subset finishing for PCL jobs. The PCL separator command defines offset segments of a job. PCL does not commonly support finishing. However, the use of the PCL separator command allows offset segments of a job to be finished based on the finishing default set on the queue. For example, if the queue default is portrait stitch, all segments of a job where the PCL separator command has been used will be stitched.

The placement guidelines are as follows:

- Current Page Offset: If the current page is to be offset from the previous page, then the PCL separator command must be placed on the current page before any image data. Placement should be within the job/page control section or before.
- Next Page Offset: If the next page in the document is to be offset from the current page, the PCL separator command must be placed at the end of the current page after any image items.

PCL Offset Stacking

Access the Offset stacking switch by opening Printer Manager and selecting the Stacking tab and then select [Offset Stacking].

To enable offset stacking for collated or uncollated jobs, select the enable checkbox. Both buttons are located under the collated stacking and uncollated stacking sections.

Using the PCS Separator

The following information should be considered when using the PCL separator command:

- The offset switch in Printer Manager in the Xerox FreeFlow Print Server software must be set to ON. If the offset switch is set to OFF and a job with the PCL separator command is received, the sets will not offset when the job is printed.
- Multiple uses of the PCL separator command within a job will be honored.
- Multiple uses of the PCL separator command on a page will be ignored.
- All finishing limitations and restrictions at the printer will apply to a subset segment.

PCL paper source command

Use the PCL Paper Source command `<esc & 1 # H>` to program a PCL print job to use a specific paper. The PCL decomposer on the Xerox FreeFlow Print Server Controller reads the paper source command and, using the PCL Paper Sources option in the Queue Properties and maps the command to the appropriate paper. The number code corresponds to the following PCL Paper Source programmed in Queue Properties.

To program the PCL Paper Source, use the following guidelines:

Standard: `<ESC>&11H`

Manual Paper Feed: `<ESC>&13H`

Manual Envelope Feed: `<ESC>&13H`

Lower: `<ESC>&14H`

Large Capacity: `<ESC>&15H`

Envelope Feed: `<ESC>&16H`

Tray programming

Tray confirmation

Tray confirmation selections control:

- whether a confirmation pop-up window appears on the screen after a tray has been opened and closed
- what attributes are assigned to that tray
- whether the action is automatic or requires user action to confirm the programming change

To set tray programming options, perform the following:

1. On the main menu select [Setup]
2. Select [System Preferences]
3. Select the [Stocks and Trays] tab

Settings are system-wide and are applied immediately. No restart of the Xerox FreeFlow Print Server software required.

Tray Confirmation options:

- **None** - No tray confirmation pop up. The system assumes tray refill, but if tray attributes change, the tray will fault. To clear the fault modify the programming to match the tray. In addition, the “New Stock has been Loaded” option must be selected.
- **When Tray Settings Change** - A tray confirmation pop up appears every time a stock attribute changes.
- **After Every Tray Cycle** - A tray confirmation pop up appears every time a tray is opened and closed, or the Printer reports a new stock attribute.
- **Auto Accept Settings Changes** - This mode will automatically update the tray programming on the Xerox FreeFlow Print Server to match what is reported by the Printer. This option is not available on Nuvera C/P.

Note Only System Administrators can set Tray Confirmation options.

Note Tray confirmation is not available on iGen3 with Xerox FreeFlow Print Server.

Tray mapping

The Xerox FreeFlow Print Server allows the operator to select and save tray mappings for recurring jobs or for jobs needing the same mapping.

From the Printer GUI, the operator selects [Save Mapping]. The dialog box [Save Settings] enables the user to either select an existing mapping or create a new mapping by assigning a name and entering a description in the Comments input area. The operator can also delete mappings.

To apply the saved mapping to another print run, the operator accesses the Save Settings dialog box, selects the desired saved setting and selects [OK]. This action reprograms all the trays to the values previously stored.

Mapping trays to media

On the Xerox FreeFlow Print Server printer, the media sources are set up for each queue on the printer interface. The user can map trays to media in the XPIF job ticket and then use the mapping with the embedded PCL paper source commands in the data stream.

Once the print job has been sent, the user cannot change media sources. However, the XPIF job ticket media source to tray mapping can be overridden for all the trays on the queue.

There are two ways in which an operator can specify the PCL tray to media mapping:

1. XPIF job ticket. This ticket must be pre-appended to the job.
2. IPP Attributes. The information in the XPIF ticket and IPP attributes become part of the job attributes sent to the system.

Stacking order

The user is able to specify the Output Set Stacking Order by the combination of Output Order (1 to N or N to 1) and the Output Delivery (Face Up/Face Down) selections.

These options can be set either at the Queue property level or at the Job property level as part of the job ticket output option.

Mixed stacking

Mixed stacking allows all completed jobs with different finishing to accumulate in the stacker until it is full or until the operator empties it.

The types of finishing that can be mixed include stitching, binding, and unfinished. The mixed stack can also include banner pages. The stacker can hold between 12 and 18 subsets of different types of finishing in the stacker before unloading.

Mixed stacking is enabled upon installation but can be disabled if you choose to do so. If you wish to have it enabled at a later date, a Xerox Service Representative must assist you.

Additional finishing information

The Xerox FreeFlow Print Server is unable to dual staple 3-hole punched stock. If dual staple is selected when using pre-drilled paper, improper registration will occur. Select to single staple the job, or print on non-drilled stock and manually punch the holes after finishing of dual staple is complete.

Gateway and Network Configuration

5

Gateway and network configuration is a set of features that allows administrators to integrate the Xerox FreeFlow Print Server operation with a variety of protocols and gateways through a common user interface. The Xerox FreeFlow Print Server gateway and network configuration also enables system administrators to select all the network configuration settings without having to work in the UNIX operating system.

Administrators have a wide range of network options available for configuration through the Xerox FreeFlow Print Server. IP settings, network speed, and name service among other settings can be handled easily and quickly.

This section of the guide describes how to use the Xerox FreeFlow Print Server interface for the following gateways:

- Simple Network Management Protocol (SNMP)
- AppleTalk
- Novell NetWare
- LPD

This section also addresses the Xerox FreeFlow Print Server support for the following network configuration settings:

- Host Name
- Internet Protocol Options
- IP address
 - IPv4
 - IPv6
- (IPv4) Name services
 - WINS
 - DNS
 - NIS/NIS+
- Dynamic DNS Updates (DDNS)
- Filing configuration - SMB
- Filing configuration - FTP/SFTP
- Dynamic (DHCP) and Static configuration
- Ethernet speed
- Restore network defaults

Gateways

SNMP gateway configuration

SNMP displays the status of network devices. Using the SNMP tab in the Xerox FreeFlow Print Server Gateways, the administrator can select among a number of features and settings for SNMP.

Note SNMP requires a standard license. The System Administrator must enable SNMP in License Manager.

Xerox recommends the following third-party SNMP software managers:

- IBM Network Printer Manager (XP)
- TNG Unicenter (XP)
- HP OpenView (UNIX, XP)
- Xerox CentreWare (UNIX, XP)

Note The SNMP manager (for example, HP OpenView) may have a number of requests into the Xerox FreeFlow Print Server for information. The requested information may not be among the supported data sets on the Print Server. When this occurs, the SNMP client/manager displays “no value...etc”.

Note You can have more than one SNMP manager running at the same time.

Additional features supported in SNMP

SNMP support for the following features are product dependent:

- The ability to ‘SET’ attributes.
- The ability to localize text and units of measure.
- The ability to support a number of MIBs related to finishing and printing.
- The ability to perform automatic meter reading.

The following table specifies which Xerox products have these SNMP supported features:

SNMP Supported Features by Product

Feature	DT 61XX and DP 1xx	EPS 1XX	iGen	Nuvera 1xx
Ability to SET Attributes	Y	Y	N	Y
Localization of Attributes	Y	Y	N	N
Finishing Capability for a Device MIB	Y	N	N	Y
Finishing Capability for a Supply MIB	Y	N	N	Y
Finishing Capability for Attributes	Y	N	N	Y
Print Working Group Job Monitor MIB	Y	Y	N	Y
Auto Meter Reading/Billing	Y	Y	N	Y
Enhancement to attributes	Y	Y	N	Y

Changing attributes support

These attributes can be changed via 'SET':

- prtGeneralServicePerson
- prtAuxillarySheetStartupPage
- prtGeneralPrinterName
- hrFSLastFullBackupDate
- hrFSLastPartialBackupDate
- sysContact
- sysLocalization

For additional information on attributes, MIBs, and localization, see device profiles.

SNMP MIB support

The Xerox FreeFlow Print Server SNMP MIB files use the Xerox Common Management Interface (XCMI) version 4.0. The following list indicates the MIB files included for this version of the Print Server software:

- rfc1213 - RFC1213-MIB (MIB-II) - specifically system, if numbers, at, ip, tcp, icmp, udp, snmp
- rfc2790/rfc1514 - HOST-RESOURCES-MIB (XCMI rev 000817) - rfc2790 is a later version of rfc1514. Specifically hrDeviceTable and hrPrinter Table: hrSystem, hrStorage, hrDeviceTable, hrPrinterTable, hrDiskStorageTable, hrPartitionTable
- rfc2790t - HOST-RESOURCES-TYPES (XCMI rev 000815) - same as 2.

- rfc1759 - Printer-MIB (XCMI rev 000818) - except fin tables
- 06gentc - XEROX-GENERAL-TC
- 07gen - XEROX-GENERAL-MIB
- 10 hosttc - XEROX-HOST-RESOURCES-EXT- TC - same as 2
- 11 hostx - XEROX-HOST-RESOURCES-EXT-MIB - same as 2
- 15prtrxtc - XEROX-PRINTER-EXT- TC
- 16prtx - XEROX-PRINTER-EXT-MIB
- rfc1215 - SNMP traps version 1

Additionally the following MIBs files are supported:

- RFC 1213 MIB file
 - The system Group
 - The Interface Group
 - The ip Group
 - The icmp Group
 - The tcp Group
 - The udp Group
 - The snmp Group
- Host Resource MIB file
 - The System Group
 - The Storage Group
 - The Device Group
- Printer MIB file
 - The General Printer Group
 - The Input Group
 - The Extended Input Group
 - The Input Media Group
 - The Output Group
 - The Extended Output Group
 - The Output Features Group
 - The Marker Group
 - The Marker Supplies Group
 - The Marker Colorant Group
 - The Media Path Group
 - The Interpreters Group
 - The Channels Group
 - The Console Group
 - The Alerts Groups
- Finishing MIB

- Finisher Device Group
- Finisher Supply Group
- Finisher Supply, Media Input Group
- Finisher Device Attribute Group
- PWG Job Monitor MIB
 - The General Group
 - The Job ID Group
 - The Job Group
 - The Attribute Group
- XCMII Host Extensions
 - Device Information Group
 - Device Detail Group
- XCMII Service Monitoring MIB, Service Group for Print, Copy and Scan
- Xerox General MIB file (uses only the 06gentc and 07gen files)
- The xcmGen Base Group

Note The other files in Xerox General MIB are not supported.

Automatic Meter Reading (AMR) support

Automatic Meter Reading (AMR) is a function that assists in the accounting and billing process. The feature can be supported using:

- xcmHrDevDetailIndex
- xcmHrDevDetailValue Integer
- xcmHrDevDetailValueString

Localization of text and units of measure

With the Xerox FreeFlow Print Server, SNMP text and units of measure can be independent of the locality selected as part of the Local User Interface (LUI).

Although the default is set so that the SNMP locality and unit of measure is the same as that of the LUI, the new feature allows the administrator to select a different locality or unit of measure for the SNMP gateway.

Remote SNMP clients **can** control the localization of text objects of syntax

LocalizedDescriptionStringTC by setting the MIB object:

prtGeneralCurrentLocalization

Access is changed from Read-only to Read/Write.

However, Remote SNMP clients **cannot** control the units of measure localization of numeric MIB objects. The localization of these objects can only be controlled from the LUI.

SNMP configuration variables

Of the many parameters that are available for SNMP configuration, only the ones of common interest to Xerox customers are shown in the following table:

Configuration Variables

Parameter Name	Description	Value Range	Default Value
CommandLine	Turn on/off the following flags: -l: logging to SNMP_DEBUG_LOG -w: logging to window		
Printer operator	The name of the printer operator	String (0...127)	<empty>
Printer administrator	The name of the printer administrator	String (0...127)	<empty>
Printer administrator location	The location of the office of the printer administrator	String (0...127)	<empty>
Printer administrator Phone	The telephone number for contacting the printer administrator	String (0...127)	<empty>
Printer location	The location of the printer	String (0...127)	<empty>

Local User Interface (LUI) mapping to MIB

The following table shows the mapping between the LUI and MIB:

Local User Interface	MIB
PrinterOperator	prtGeneralCurrentOperator
PrinterAdministrator	prtGeneralServicePersonsContact
PrinterAdmin, PrinterAdminURL PrinterAdminPhoneNumber	prtGeneralServicePersonsContact
PrinterLocation	sysLocation

Printer and job messages

SNMP can broadcast messages about the printer and the jobs on the system. Printer messages may announce that the printer is idle, printing, or out of paper. Job messages announce that jobs are pending, processing, or completed. Other job-related information may include the job owner's name, the job quantity, the job identifier, etc.

The information that is displayed at an SNMP Manager may not always reflect the exact status of a job or printer on the Xerox FreeFlow Print Server Controller. Those Managers that do not support loading of Management Information Bases (MIBs) only displays the printer and job status that they support.

Note "Forwarding" is not a job state that is broadcast by the controller; therefore, job forwarding information is not displayed by the SNMP job managers.

AppleTalk gateway configuration

In Gateways, using the AppleTalk tab the administrator can enable or disable the protocol. The administrator can specify the phase type and time zone in the AppleTalk tab.

Always refer to the online Help on the GUI for additional information.

NetWare gateway configuration

In Gateways using the NetWare tab, the administrator can configure the NetWare Network automatically or manually. When the automatic mode is selected, Ethernet Frame Type and Novell Net Number is automatically configured.

If the manual mode is selected, the interface enables manual entry for Ethernet Frame Type and Novell Net Number.

Always refer to the online Help on the GUI for additional information.

Queue server options

In Gateways using the Queue Server tab, the administrator has the option to enable or disable NetWare and to define a Preferred Server Name. This entry field allows the administrator an easy method to directly point to a replica or NDS server name.

Note It is recommended to set this after the first connect attempt has been made since the Preferred Server Name should be automatically available under normal conditions.

Always refer to the online Help on the GUI for additional information.

LPD gateway configuration

In Gateways using the LPD (Line Printer Daemon) tab, the administrator can enable or disable the LPD protocol, set the default queue, and set the LPD port. The default port is 515, the most commonly used port.

Note Here's a caveat concerning the default queue:

- *If LPD Default Queue is enabled and if the submitted job has not specified a queue, the job goes to the default queue.*
- *On the other hand, if LPD Default Queue is disabled and if the submitted job has not specified a queue, the job is rejected.*

Always refer to the online Help on the GUI for additional information.

Network configuration settings

Within the System Administration part of the user interface, Network configuration options are presented.

Always refer to the online Help on the GUI for additional information.

Host Name

In Network Configuration, the administrator can change the Host Name ID.

Internet Protocol Options

In Network Configuration, the administrator can change the Internet Protocol setting by selecting one of the following drop-down options:

- IPv4 Enabled
- IPv6 Enabled
- Dual Protocol; IPv4 Preferred (Manufacture Default)
- Dual Protocol; IPv6 Preferred
- Network Disabled

Note When IPv4 is enabled, all tabs are enabled except the IPv6 tab. When IPv6 is enabled, all tabs are enabled except the IPv4 tab. When the “Network Disabled” option is selected, the system is not configured with any available network options. All Network Configuration tabs are inactive. FFPS cannot send nor receive data via any network connection.

IP configuration

In Network Configuration, using the IPv4 and IPv6 Address tabs, the administrator can adjust or change the following settings:

- IPv4
 - IP Configuration Method
 - Static - Allows the user to specify the IP information
 - Automatic - allows an automatic generation of an IP address
 - IP Address
 - Default gateway
 - Subnet mask or prefix
- IPv6
 - IP Configuration Method
 - Static - Allows the user to specify the IP information
 - Automatic - allows an automatic generation of an IP address
 - IP Address

- Default Gateways

Note This information is supplied by the system administrator.

Note The user is prompted whenever a reboot is required.

Name services

The following IPv4 name services are supported by Xerox FreeFlow Print Server software.

Note IPv6 is not supported in any of the name services.

Windows Internet Name Service (WINS)

This network configuration option allows the administrator to enable/disable the WINS service. The Primary WINS server option, when left blank, samba will use system cache or broadcast to get a NetBIOS name resolved. Samba could also use host or lmhosts as well if it is configured in smb.conf, depending on the order of services configured in this file.

Domain Name Service (DNS)

The DNS service maintains host names to IPv4 Address mappings. DNS is also a Directory Service that stores arbitrary objects not necessarily related to name-to-IPv4 information.

In Network Configuration, using the DNS tab, the administrator can enable/disable DNS. If DNS is enabled, the user must provide the “Domain Name” and “DNS Server List” information in the text entry windows; the “Domain Search List” is optional.

Dynamic Domain Name Service (DDNS)

The DNS protocol has also been enhanced to allow for dynamic updating of DNS. The enhancement is referred to as Dynamic Domain Name Service (DDNS). To invoke this service the administrator enables it on the DNS tab.

Note For specific procedures see the Online Help.

Network Information Services (NIS/NIS+)

NIS and NIS+ are network lookup services that provide information that must be known throughout the network as well as all machines on the network.

The administrator can enable or disable either the NIS or NIS+ service. If either of these is enabled, the administrator must supply the information requested by the text fields or choose “Find NIS+ server” which will provide this same information.

Note The NIS/NIS+ server, by default, will accept the broadcast requests within the subnet, there is no specific configuration required on the server end. Select “Find NIS/NIS+ server”, NIS/NIS+ client(docusp system) to send broadcast message to locate any NIS/NIS+ server(s) configured within the same subnet, if there is one, it will reply and DocuSP will have the proper information configured.

In Network Configuration, the “Options” tab allows the administrator to configure ADS, SMNP/FTP, and Connections.

Active Directory Service (ADS)

The Xerox FreeFlow Print Server interface provides a “wizard” that enables the administrator to add ADS domains and permits Print Server integration into Windows ADS networks.

SMB/FTP network filing configuration

In Network Configuration, Options, the SMB/FTP tab allows the administrator to enable or disable filing using one of three different technologies:

1. SMB, the protocol behind WINS.
2. FTP, File Transfer Protocol.
3. SFTP, Secure File Transfer Protocol with encryption.

Network Filing via SMB or FTP/SFTP

The System Administrator can program the SMB or FTP/SFTP Server Login information that is required to gain network file access. If this information was not programmed by the System Administrator, perform the following:

1. If required, enter your User Name and Password.
2. Type the Domain Name or Select [Browse] to locate the Domain Name and then select [OK].
3. Type the Server Name or Select [Browse] to locate the Server Name and then select [OK].
4. If required, type the Share Path or Select [Browse] to locate the Share Path and then select [OK].
5. After entering all the required information, select [OK] to close the Save Location dialog window.
 - The Network Validation dialog opens if it takes longer than two seconds to validate the network connection information.
 - Select [OK] if validation is successful. If validation is not successful, follow the displayed instructions or contact the System Administrator.

Setting up SMB/FTP

In order to save jobs to an SMB/FTP location, it must be enabled on the system.

1. Log on as a System Administrator.
2. From the Setup menu, select [Network Configuration...].
3. Select the SMB/FTP tab.
4. Select any of the available options:
 - Enable SMB Filing
 - Enable FTP Filing
 - Enable SFTP Filing
 - Enter a NetBIOS name.

5. Select [OK].

LP/LPR compatibility with Xerox FreeFlow Print Server

Xerox FreeFlow Print Server-driven systems can now be targeted to existing NPS customers for both black and white, and highlight color. The Print Server now supports the following options.

NPS lp-o and lpr-c

There is support for NPS lp-o and lpr-c options; the lp/lpr options are received by the LPR gateway and mapped to Xerox FreeFlow Print Server attributes.

The following NPS lp/lpr options are supported:

1. NPS general options
 - C"(acct=<text>)" (account information)
 - C"(collated)"
 - C"(uncollated)"
 - C"(copies=<n>)"
 - C"(drilled)"
 - C"(format=<pdl>)" (document format)
 - C"(media=<n>x<m>)"
 - C"(pr=<n>-<m>)" (pages to print)
 - C"(size=<n>)"
 - C"(xshift)" (horizontal image shift)
 - C"(yshift)" (horizontal side 2 shift)
 - C"(xshiftback=<n>)" (vertical image shift)
 - C"(yshiftback=<n>)" (vertical side 2 shift)
 - C("<nostich>l nostaple l stich l staple>l
2. Page order override
 - C"(ton)"
 - C"(nto1")
3. Background forms
 - C"(bf=<background form>)" (background form)
 - C"(cf=<n>)" (cycle from start location)
 - C"(disposition=<savemaskG4 lsaveformG4>)"
4. Selectable halftone (not including full color)
 - C"(halftone=<defaultHalftone l course l medium l fine l extrafine>)"
5. Highlight color (highlight printing color)
 - C"(hc=<color>)" (highlight color mismatch action)
 - C"(hcm=<abort l ignore l operator>)" (highlight mapping color scheme)
 - C"(hrc=<pictorial l presentation l colorToHighlight l automatic>)" (highlight mapping color)
 - C"(mc= <color>)"

6. Hold job for manual release
 - C"(hold)"
7. Selectable resolution
 - C"(res=< | 300 | 600 |>)"
8. Other
 - C"(pcl5c)"

Note See "Printing" in this guide for further information on Highlight color options.

Ethernet connection speed

In Network Configuration, Options, using the Connections tab, the administrator can select the speed of the Ethernet. The default is set to automatic and the software/NIC card automatically detects and transmits at the highest speed available. However, the interface also offers 10 mb/sec, 100 mb/sec and 1000 mb/sec as the situation requires.

The need to set a specific speed may occur if a switch is set to a particular speed and does not support automatic negotiation. Under these conditions, the full Xerox FreeFlow Print Server controller may need to be set to the same speed as the switch.

Restore network factory settings

With the addition of several interface options as well as user settings, the administrator may want to restore factory settings. The interface provides a [Restore Defaults] button in Network Configuration that permits the administrator to restore all settings or to restore factory settings for only those of specific protocols.

Other resources

The **FreeFlow Print Server Security Guide** is a good resource providing in depth information on gateways and network configuration.

Accounting and Billing

6

The following section explains the various accounting log versions that are available for systems configured with accounting and billing capability. It also lists the billing meters for each region and an explanation of each meter.

Accounting

The Accounting function in the Xerox FreeFlow® Print Server software produces a number of reports that enable the administrator to accurately bill customers.

Auto exporting accounting log

The Accounting function will automatically export and purge the accounting data when the database reaches 80 % capacity. This will protect data from being overwritten before the log runs out of space. The export function is performed automatically and then the file is saved automatically to a designated directory. The default file directory where the accounting log is saved is: `/export/home/xrusr/accountingexportfiles`.

Note When purging, the oldest entry is purged first.

Accounting exported values

The Accounting feature tracks all jobs that have been processed and printed, enabling your site to charge for use of the Xerox printing system.

There are various versions of the accounting log supported by the Xerox FreeFlow Print Server for exporting. The following list describes each version. Refer to online Help for more details.

- **Version 2:** This is the most common version that is supported for the Xerox FreeFlow Print Server printing system. If this version is selected to be exported, it will not include any new accounting entries.
- **Version 3:** This version will export all entries that are new and old, having zero and non-zero values. Additionally, entries will be exported that are not viewable on the interface. These entries are: Channel Idle Time, Initial JDL, Initial JDE, DJDE Records Read, and Lines Printed.
- **Version 3.1:** This version is similar to Version 3 and includes the same exported values as Version 3, that is, all entries that are new and old having zero and non-zero values. But Version 3.1 also includes the following fields:
 - **Interrupt Status:** Options are Interrupt and Interrupted.
 - **Job Source:** Indicates the Gateway through which the job was submitted.
 - **RIP Interrupt Time:** Displays how long the job was suspended in the RIPing status if the job was interrupted by a “Print Now” job.
- **Version 4.0:** This version is similar to version 3.1 and includes all the same values as Version 3.1. However, it also includes the exported value for Trapping. The number displayed will be the total number of pages trapped within a job.
- **Version 5.x:** This version exports all entries including those for color attributes.
- **Version 6.x:** This version contains Account ID, User ID, and additional job data for the purpose of identifying who ran jobs and the account to which users are assigned.
- **Version 8.x:** This version contains LCDS information including Final JDL and Final JDE.

Accounting file fields

The following information will help you identify accounting fields when viewing the accounting and billing information.

Job ID

System assigned ID number. When a job is sent to be printed or saved, it is given a Job ID that the system uses to track the job. Job IDs are generated sequentially, but the numbers can be reset.

Container ID

System assigned ID number. The Container ID always has the same number as the Job ID.

Report ID

Report ID for the job.

Host Job Number

Host supplied job number, as extracted from the data stream.

Record status

This field will have one of the following values:

- Complete.
- Quantities shown may be less than actual.
- This is normally caused by the loss of marker data in the Accounting structure. For example, Copies Printed, Total Color Pages Printed, etc.
- Descriptive data was lost. Quantities shown are correct.

This is normally caused by the loss of job-related data in the Accounting structure that was later successfully recovered. For example, Job Number, Job Status, etc.

Descriptive data was lost. Quantities shown may be less than actual.

This is normally caused by the loss of job-related data in the Accounting structure that could not be recovered. For example, Job Number, Job Status, etc.

Document Name

The name of document or set to create.

Document Date

The date of the document or set to create date.

Sender Name

Specified at or by the submitting client.

Recipient

Specified at or by the submitting client.

Account

Specified at or by the submitting client.

Disposition

This field will have one of the following values:

- Print
- Save

Job Status

This field will have one of the following values:

- Completed
- Completed with warnings
- Completed with errors
- Undefined
- Faulted
- Cancelled by user
- Cancelled by operator
- Aborted
- Rejected
- Held by user
- Held by operator
- Save completed
- Save completed with warnings
- Save completed with errors

Interrupt Status

This field will have the following values:

- No Interruption
- Interrupted
- Interrupt
- Interrupt Interrupted

Print Server Name

This is the name of the Sun platform running the Print Server software; it is also the remote host name for the Print Server controller (e.g., adldp6135/6180).

Virtual Printer

Logical name for printer queue assigned at startup. (e.g., dp6135/6180).

Machine Type

Printer Type

This field will always be the type of printer.

Job Source

Source of the job being submitted.

Channel Idle Time (milliseconds)

Specifies the amount of time the Channel was idle in milliseconds.

Job Submission Date

Date and time job submitted in standard UNIX time format, i.e., in seconds past midnight GMT, on Jan 1, 1970. (e.g., 835709136 is June 25, 1996 09:25:36).

Input File Size (bytes)

Size of file in bytes. (e.g., 1751).

Job Format

PDL Format

The source Page Descriptor Language of this job. This field will be one of the following:

- Ascii
- Binary
- HPPCL
- Interpress
- LCDS
- PostScript

- PostScript2
- PostScript Query
- TIFF
- PDF
- IPDS
- HTML
- DocuJob
- Internal
- Native

Start RIP Time

Date and time Raster Input Processing (RIP) started.

Stop RIP Time

Date and time RIP completed.

Elapsed RIP Time (seconds)

Difference between Stop RIP Time and Start RIP Time, in seconds.

Account ID

User ID

Additional Job Data

RIP Interrupt Time (seconds)

Total amount of time RIP was suspended for the job, in seconds.

Initial JDL

Path to JDL for LCDS document submission.

Initial JDE

JDE selection. This is used in combo with the Initial JDL in the LCDS document submissions.

Records Read

The number of records read from a record data stream.

DJDE Records Read

The number of DJDE records recognized.

Data Blocks Processed

Number of blocks read processing the current job.

Data Blocks Skipped

Number of blocks skipped processing the current job.

Number Pages RIPed

Number of processed pages.

Total Pages Trapped

Number of pages trapped.

Total Anti Aliased Pages Processed

Total number of Anti Aliased pages processed.

Start Date

Date and time job printing started.

Completion Date

Date and time job printing completed.

Pages To Print

Can be a range (e.g. 5 - 8 or All). If not specified, this field (attribute = value pair) will not appear in the Exported File.

Collate Mode

Indicates whether to collate output (Yes/No).

Copies Requested

Number of copies the user wants to print. If the job is sent requesting 10 copies, and held when 5 are printed, Copies Requested will be 10 and Copies Printed will be 5.

Copies Printed

Number of copies actually printed.

Total Sheets Greater than 9" Wide Printed

Total number of sheets printed for which the job was greater than 9 inches wide.

Total Sheets Greater than 345mm Wide Printed

Total number of sheets printed for which the job was greater than 345 mm wide.

Total Sheets Printed

Total number of sheets printed for the job, including any banner or error pages.

Total Impressions Printed

Two-sided sheets (printed both sides) count as two impressions; single sided sheets count as one impression.

Pages to Bin

Total pages delivered to output bin for job.

Pages to Tray

Total pages delivered to tray for a job.

Number 1-Sided Sheets Printed

Number of single sided sheets printed.

Complexity Induced Skips

Number 2-Sided Sheets Printed

Number of double sided sheets printed.

Lines Printed

Number of lines printed for a job.

Pages Spaced

Number of pages spaced for a job.

Total Black Only Pages Printed

Total number of black-only pages printed in a job.

Total Color Pages Printed

Total number of color pages printed in a job.

Complexity induced Skips

Number of blocks skipped while processing the current job.

Finishing Applied X

Contains the finisher name (number X=1...10).

Medium X, Number Printed

A count of the quantity of sheets of medium (number X=1,2,...) (e.g., 25).

Medium X, Type

The type of medium (number X=1,2,...). Field will be one of the following:

- Plain
- Transparency
- Full Cut Tab
- Precut Tab
- Ordered Stock
- User defined

Medium X, Modulus

Indicates number of parts supported by the form associated with this medium (number X=1...10).

Medium X, Size

Page size for medium (number X=1...10). Field will be size of the paper stock (for example, 8.5 x 11.0 in., 8.5 x 14.0 in.,...).

Medium X, Color

Color of medium (number X=1,2,...). Field can be one of the following:

- White
- Clear
- Pink
- Red

- Yellow
- Blue
- Green
- Buff
- Goldenrod
- User defined

Medium X, Name

Text name of medium (number X=1...10).

Medium X, Opacity

Opacity of medium (number X=1...10).

Medium X, Holes count

Number of pre-punched holes in medium (number X=1...10).

Medium X, Grain

Grain of medium (number X=1...10).

Medium X, Finish

Finish of medium (number X=1...10).

Medium X, Weight

Density of medium (number X=1,2,...). nn.n g/m².

(e.g., 75.0 g/m²).

Job Notes window

The Job Notes window displays accounting information as well as user information. The following accounting and user fields have been added and displays, exported, and printed as part of the accounting log.

- Account Info
- Account ID.
- User ID.
- Additional Account Information: This field will accept up to 255 characters.

Note These attributes are support by IPP, Reprint, LP, LPR and XPIF.

Billing

The Xerox FreeFlow Print Server maintains a billing meter for a number of billable events for systems configured with billing capability. A meter is a measurement of how many billable events took place. A billable event is a transaction performed on the printer for which Xerox charges customers. System Administrators and Operators can view and print the billing report.

Specific customer information is retained upon system restarts. Retained information includes:

- Queue name for printing the Billing Report
- Customer ID (Customer Name)
- Machine ID (Printer Serial Number)

The Billing window displays the following information:

- The date and time that the meters were read
- Meter descriptions
- Value information for the meters

Customers print out the billing report and send it to Xerox. Xerox then generates a bill based on the customer's printer usage. This can be done automatically by using the Remote Services feature.

Note Meter names and what they measure vary by region. Refer to the Billing Meters section in this book.

View and Print the Billing Report

Do the following to view the billing report

1. Select [Administration: Billing...]
2. Select the [Print...] button
3. Select a queue from the Queue drop-down menu
4. Enter the Customer ID and Machine ID
5. Select [Close] when you are finished

Billable events

Note For CF systems, billing meters are maintained within the print engine. For additional information, contact a Xerox Service Representative.

Xerox billable events include the following:

- Waste sheets that are sent to a stacker as part of the process to resolve a condition in the system.
- Waste sheets that are manually removed from a stacker.
- Each impression or imaged side of a sheet.
- Administration pages, such as the banner page or error page.
- Internal reports, such as billing or accounting reports.
- All completed sets and stacks.

- Sample jobs.
- Any partial sets that are generated by a programming conflict, a PDL error, or a cancellation of a print job by the operator during printing.

Administration pages and sample jobs will be billed as 1-sided sheets.

Billable events do not include the following:

- Blank sides inserted by the system; for example, the last page of an odd-numbered 2-sided job.
- Any partial sets generated when the system fault recovery forces the job to be saved or cancelled during printing.
- Slip sheets.
- Blank sheets.
- Blank sides created as part of the job.
- Fuser cleanup sheets.
- Waste sheets that are manually removed from the feeders and print engine.
- Sheets purged by the system for fault recovery or image quality adjustment.

Billing meters

The Xerox Billing Meter window tracks the time and date of the last meter read and the following Print Billing Report options are retained between restarts:

- Queue name for printing the Billing Report.
- Customer ID (Customer Name)
- Machine ID (serial number).

The printing information is pre-loaded and only needs to be entered once in the system. The customer or service representative completes the entry and prints the Billing report. This stores the values. But if the values stored are in error in some way, they are editable.

Note Tables 6-1, 6-2, and 6-3 show all meters for all printers and for all market regions.

Table 6-1 Billing Meters for 61XX/41XX DocuTech/DocuPrint Series

Region	61XX Meter Label	41XX Meter Label
1	Meter A Meter B	Good Impressions Successfully Delivered Impressions Printed in IOT Diagnostic Mode Number of Purge sheets sent to Purge Tray Good Impressions Successfully Delivered in 3 Pitch Mode Good Impressions Successfully Delivered in 4 Pitch Mode Good Impressions Successfully Delivered in 5 Pitch Mode Good Impressions Successfully Delivered in 5 Pitch Mode Good Impressions Successfully Delivered in 6 Pitch Mode Good Impressions Successfully Delivered in 7 & 8 Pitch Mode Number of Duplex Sheets Successfully Delivered Percentage of Duplex Impressions
2	Meter 1 Meter 2 Meter 3	Good Impressions Successfully Delivered Impressions Printed in IOT Diagnostic Mode Number of Purge sheets sent to Purge Tray Good Impressions Successfully Delivered in 3 Pitch Mode Good Impressions Successfully Delivered in 4 Pitch Mode Good Impressions Successfully Delivered in 5 Pitch Mode Good Impressions Successfully Delivered in 5 Pitch Mode Good Impressions Successfully Delivered in 6 Pitch Mode Good Impressions Successfully Delivered in 7 & 8 Pitch Mode Number of Duplex Sheets Successfully Delivered Percentage of Duplex Impressions

Region	61XX Meter Label	41XX Meter Label
5	Meter A	Good Impressions Successfully Delivered Impressions Printed in IOT Diagnostic Mode Number of Purge sheets sent to Purge Tray Good Impressions Successfully Delivered in 3 Pitch Mode Good Impressions Successfully Delivered in 4 Pitch Mode Good Impressions Successfully Delivered in 5 Pitch Mode Good Impressions Successfully Delivered in 5 Pitch Mode Good Impressions Successfully Delivered in 6 Pitch Mode Good Impressions Successfully Delivered in 7 & 8 Pitch Mode Number of Duplex Sheets Successfully Delivered Percentage of Duplex Impressions
6	Meter 1 Meter 2	Good Impressions Successfully Delivered Impressions Printed in IOT Diagnostic Mode Number of Purge sheets sent to Purge Tray Good Impressions Successfully Delivered in 3 Pitch Mode Good Impressions Successfully Delivered in 4 Pitch Mode Good Impressions Successfully Delivered in 5 Pitch Mode Good Impressions Successfully Delivered in 5 Pitch Mode Good Impressions Successfully Delivered in 6 Pitch Mode Good Impressions Successfully Delivered in 7 & 8 Pitch Mode Number of Duplex Sheets Successfully Delivered Percentage of Duplex Impressions

Table 6-2 Billing Meters for Nuvera

Region	Nuvera EA 100/120/144 Meter Label	Nuvera 288 Meter Label
1	Meter A Meter B Meter C Meter C Breakpoint Limit Meter C Breakpoint Limit Last Modified Meter D Meter D Breakpoint Limit Meter D Breakpoint Limit Last Modified	Meter A Meter B Meter C Meter C Breakpoint Limit Meter C Breakpoint Limit Last Modified Meter D Meter D Breakpoint Limit Meter D Breakpoint Limit Last Modified Meter E
2	Meter 1 Meter 2 Meter 3	Meter 1 Meter 2 Meter 3

5	<p>Meter A Meter B Meter B Breakpoint Limit Meter B Breakpoint Limit Last Modified Meter C Meter C Breakpoint Limit Meter C Breakpoint Limit Last Modified</p>	<p>Meter A Meter B Meter B Breakpoint Limit Meter B Breakpoint Limit Last Modified Meter C Meter C Breakpoint Limit Meter C Breakpoint Limit Last Modified Meter D</p>
6	<p>Meter 1 Meter 2</p>	<p>Meter 1 Meter 2 Meter 3</p>

Table 6-3 Billing Meters for DocuColor 240/250/260

Note These meters do not appear on the FreeFlow Print Server GUI. These meters are displayed through Remote Services only.

Region	DocuColor 240/250 Meter Label	DocuColor 260 Meter Label
1	Total Impressions Color Impressions Black Impressions Large Color Impressions Large Black Impressions	Total Impressions Color Impressions Black Impressions Large Color Impressions Large Black Impressions
2	Total Impressions Color Impressions Black Impressions Large Color Impressions Large Black Impressions	Total Impressions Color Impressions Black Impressions Large Color Impressions Large Black Impressions
5	Total Impressions Color Impressions Black Impressions Large Color Impressions Large Black Impressions	Total Impressions Color Impressions Black Impressions Large Color Impressions Large Black Impressions
6	Total Impressions Color Impressions Black Impressions Large Color Impressions Large Black Impressions	Total Impressions Color Impressions Black Impressions Large Color Impressions Large Black Impressions

Backup and Restore

7

To ensure a smooth transition between Xerox FreeFlow® Print Server software versions and to maintain the Xerox FreeFlow Print Server system for the long term, backing up and restoring system and configuration information on a regular basis is part of a well-maintained printing environment.

This section presents the backup and restore capabilities of the Xerox FreeFlow Print Server controller. Refer to the documentation that accompanied your system for instructions specific to your product.

The capabilities are:

- Back up and restore the entire system
- Back up and restore user configuration information

System Backup and Restore

It is recommended that the system image be backed up on a regular basis. Having a current system image ensures that in the event of a failure of the system or the hard disks, the system can be easily restored.

- Backup System provides an image or copy of the hard disk, and places this copy into a protected partition on the Xerox FreeFlow Print Server hard drive, SCSI tape drive, or Unix file system. Backup System will copy everything on the disks that it supports.
 - Backup System provides a quick and efficient way to bring the system backup to a known installation.
 - Systems must have a minimum of 36Gbytes of disk space.

Note Additional partitions/drives installed by the customer are not backed up. These partitions/drives should be backed up on a regular basis or prior to modifying the Xerox FreeFlow Print Server controller.

- Restore System brings back the entire disk copy for the system, including the operating system, Xerox FreeFlow Print Server software, and user options. Only one version, at a time, of a Backup System is supported.
 - For new Xerox FreeFlow Print Server systems or systems that have had a clean installation, the Backup and Restore System capability is available through the Print Server interface.

When to Backup and Restore a System

The following items detail when to use the backup and restore system option.

It is recommended that the System Backup process be completed after the system has been running in production for a week or two.

The System Backup should be performed once a month, and it should be completed during a time when the printer is not in use, such as at night.

Restore System

- To restore the system disk copy after a catastrophic software, operating system, or other software failure.
- To restore the system when the Xerox FreeFlow Print Server or the operating system has been compromised i.e. from a storm or if corrupted by a power surge.
- To restore a known image of the entire system.
- Do **not** use when restoring after a hard disk failure.

Restore System is performed via the System Restore Disk within Xerox FreeFlow Print Server software kits. Before a restore is attempted a previous backup must have been completed.

1. Logon to the FreeFlow Print Server interface as administrator.
2. Retrieve the System Restore disk from the software kit and insert the CD into the CDROM drive. The CDROM contains a bootable OS and pointers to the /XRXbackup folder. It does not contain user data.

3. If the backup is on a tape, ensure that the tape drive is powered on and insert the tape into the tape drive.
4. From the System menu select [Shutdown].
5. Press the Interrupt button.
6. Wait for the print server to power down, then press the Power button to power the print server on.
7. When the message Gathering Restore Information displays, select [Continue].
8. From the Select a Restore Location window, select either [UFS (local drive)] or [TG (Tape Drive)], and select [Continue].
9. From the Select a Restore Dump window, select the appropriate dump file and select [Continue].
10. When the Performing System Restore screen displays, select [Continue]. Wait for the restore to complete. Files are automatically copied onto the main drive partitions.
11. When the Restore Completed prompt displays, select [Exit].
12. After the server powers off, press the Power button to power the server on.
13. Press the eject button immediately to remove the System Restore CD. Store the CD in a safe location.
14. Wait 30 seconds then power the print server on.

Note Refer to your product installation or upgrade guide for more detailed instructions.

Configuration Backup and Restore

The Backup Configuration option enables the Administrator to store some or all of the user-configurable settings on the Xerox FreeFlow Print Server. The Restore Configuration option enables the Administrator to select all or a subset of categories of user-configurable settings that are restorable from a configuration archive.

Note The Backup option is for back up ONLY; it is NOT for Restore. The Administrator must access a separate option for the restore operations.

The backup configuration allows for fast and efficient saving of user settings. XEROX recommends that you backup (save) your configuration under the following circumstances:

- Upon completion of the initial configuration
- Whenever user-configurable properties, such as queue or printer properties, change

The Configuration Backup option enables you to select among categories like the following:

- Queues
- User accounts
- Network Setups
- Stock Database/Tray mapping
- Stacker/Finisher settings
- LCDS Resources
- ICC Profiles/User TRCs

Ideally, you should minimally backup your configuration at weekly intervals. Jobs can be backed up using the Print From File feature.

CAUTION: The FreeFlow Print Server retains job ticket information as well as color information for each job.

Note See Online Help for detailed procedures.

When to Backup and Restore a Configuration

Xerox recommends that you backup your user-configurable settings at weekly or monthly intervals, and during a time when the FreeFlow Print Server is not active. You may save a configuration file to any storage device that is accessible to the server.

Restore Configuration

The Restore Configuration option

- To restore customer settings after a hardware or hard disk failure.
- For restoration after a software installation that included an installation of the operating system.

- When you only need to restore individual items, such as queue setups, custom security profiles, network and gateway settings, or paper stock or tray mappings.

Note If only a software upgrade is performed on the Xerox FreeFlow Print Server, the system configuration information is typically retained.

DocuSP 5.x to FreeFlow Print Server 6.x or higher

DocuSP 5.x to FreeFlow Print Server 6.x or higher requires a full reload of the Operating System. The recommended process is:

- In 5.x, perform a Backup Configuration (all options)
- Full load of the OS and Print Server software
- Restore Configuration of the DocuSP 5.x on the Xerox FreeFlow Print Server 6.x release. Items that cannot restore across major releases, such as license files, will not be available for restoration.
- Print several prints

Note See Online Help for detailed Restore Configuration procedures.

Frequently asked questions

System Backup and Restore

What is the basic purpose of System Backup and Restore?

The basic purpose of System Backup and Restore is to save a snapshot of the entire Solaris and Xerox FreeFlow Print Server disk for recovery at a later time. System Backup and Restore is useful for restoring the system quickly after the corruption of the software.

What does System Backup save?

System Backup makes a snapshot or image of the entire disk, including the operating system and Xerox FreeFlow Print Server software. The image is saved in a special protected/unmounted partition, /XRXBackup, on the Xerox FreeFlow Print Server hard disk, SCSI tape drive, or Unix file system.

How big are the files?

The System Backup partition varies based on the hard disk drive size and can be deselected at the time of installation. Size is automatically selected based on the size of the hard disk drive.

Where are the files saved?

System files can only be saved to the /XRXBackup partition on the Xerox FreeFlow Print Server hard drive.

How long does the process take?

A system backup may take over an hour to complete.

What schedule should be used?

System information should be backed up biweekly or monthly. Only one version of the system image can be maintained at a time.

Configuration Backup and Restore

What is the basic purpose of Configuration Backup and Restore?

The basic purpose of Configuration Backup and Restore is to save user settings for upgrade after an operating system reload. Configuration Backup and Restore is useful for restoring user configurations at a clean Solaris/Xerox FreeFlow Print Server installation or after a hard disk failure.

What does Configuration Backup and Restore actually save?

Configuration Backup saves user defined settings only. It does not save operating system or Xerox FreeFlow Print Server software. It does not fix software corruption failures.

How big are the files?

Configuration data can be very small, depending upon the options selected during the backup; an estimation of size is given before Backup occurs.

Where are the files saved?

Configuration data may be saved to any available Xerox FreeFlow Print Server location, including the local hard disk or a shared network drive.

How long does the process take?

A configuration backup can vary substantially depending upon the number and size of the items to be saved.

What schedule should be used?

Configuration information should be backed up weekly or more often as necessary. Multiple versions of the files may be maintained for future use. Saving a small set of very important items can make the process very fast.

System Backup Troubleshooting

Activity logging

The file **backup.log** is used to record backup activities. It is saved in the **/export/home/xrxusr** directory. The first line of the backup log contains the system name and the time and date the backup was initiated.

To prevent the log being overwritten by a subsequent backup, rename the log. You should give it a name that is somehow related the date that the backup was made (for example, **backup040402.log**).

To rename the log, perform the following steps:

1. Open a terminal window and logon as root user
2. Enter **pwd** to verify that **/export/home/xrxusr** is the current directory.
If it is not, enter **cd /export/home/xrxusr** to change to it.
3. Enter **ls** to display the contents of the directory. One of the files listed should be **backup.log**.
4. Change the log name to your desired name by entering the following command:

mv backup.log logname

where logname is the name you have selected for your backup log.

Troubleshooting



This section covers the various faults that you may encounter in using the Xerox FreeFlow Print Server. Declared faults are those that display a message to indicate a problem. Undeclared faults are problems that you may encounter that do not display a message or a visual indicator on the user interface.

Calling for service

Before calling the Customer Service Support Center, ensure you have read this information and have tried the corrective actions described in this document. If the problem persists, gather the necessary information and call the appropriate Customer Service Support Center phone number. Your site representative can supply you with the telephone number for the Customer Service Support Center in your area.

The Xerox Welcome Center number is (800-821-2797). The customer support direct TTY number for assistance is 1-800-735-2988.

Before calling for service, make note of the following:

- Print/job fault messages that appear on the system controller.
- Status messages that appear on the printer control console.
- Indicator lights that may or may not be lit.
- Status codes that appear in the message display of the tape drive control panel if there is a tape drive problem.

Your call is answered by a representative who asks you for your equipment serial number. Ensure that you have this available at the time of the call.

Declared faults

Declared faults that you may encounter on your system are categorized as printer faults or job faults.

Printer fault

An indicator appears on the Xerox FreeFlow Print Server user interface when a printer fault occurs and the Printer Faults window appears. The Printer Faults window displays all existing printer faults. Selecting a fault on the list opens the Fault Clearance window. Proceed to clear the fault by following the instructions in the Printer Faults Clearance window.

Note Closing the Printer Faults Clearance window does not clear the fault.

Disk Usage - example of a declared fault

If a machine has too much disk space used, a Disk Usage fault is declared by the Xerox FreeFlow Print Server. The user is instructed to click on the Disk Usage icon located on the main menu bar.

The System Administrator can free up disk space by moving data to another disk partition and by managing system resources and assets.

From the Disk Usage icon, users can navigate to:

- System Disk properties to view information for each partition such as disk size, used space, free space, normal disk usage, etc.
- Clean Disk screen to clean up disk partitions that are within the warning and error usage range. The clean up operation removes waste files created by system crashes.

Job fault

A job faults if a requirement of the job can not be met. All faulted jobs are displayed in the Faulted Jobs window. Selecting Jobs Faults displays the Job Fault Clearance window. Follow the instructions on the window to clear the job fault. To avoid common job faults, ensure that the paper that is programmed for the job is available and that the finishing programmed is acceptable and available.

Undeclared faults

The following list describes possible undeclared faults that you may encounter:

- **Client Problems:** Client problems include job submission problems with no message displayed at the client workstation.
- **Graphical User Interface (GUI) problems:** GUI icons or windows do not appear correctly, do not operate correctly, or disappear suddenly.
- **Print quality:** The output from the printer contains image defects such as deletions, problems with lines, missing images, smudges, shading, or text problems.
- **Font problems:** The output from the printer contains font defects, such as incorrect character spacing, jagged characters, text running off the page, or sentences running into each other.
- **Inoperable system:** The inoperable system has experienced an unrecoverable software error due to a job or operator action.
- **Job flow:** Jobs sent from the client are not received at a printer queue.
- **Job integrity:** The output from the printer is not as expected; it may have missing pages, missing data, incorrect page orientation, incorrectly ordered sets, or job attribute inconsistencies.
- **PDL problem:** To isolate these problems the system administrator may ask the job submitters when they are experiencing problems with printing.
- **Process problems:** A process was followed incorrectly or unintentionally.
- **Productivity and performance:** The job takes an excessive amount of time to complete.
- **Save problems:** A job is submitted from a client with a Save destination, but the job is not saved.

SNMP problems

If there is no response from the agent to the browser, one or all of the following steps can be taken:

1. Log in as root.

2. # prstat

This shows whether the agent is running or not. It may be that processes are consuming processor time. Normally you should see that the agent is taking up less than 1 %.

3. ps -ef | grep agent

This indicates if the agent is alive. The number 9252 is important for the pstack command below (the number varies).

```
root 9252 9221 0 16:36:00 consoler 0:08 /opt/XRX/XRX/snmp/agent
```

4. pstack **9252**

You should see the above since the agent should be inactive most of the time. If you see something other than the above, the agent is not functioning properly. You may take an outload or call Service.

Client problems

Client problems are handled differently depending on the client platform used.

Windows problems

A job is submitted from a Windows client and is not received by the printer queue.

If the Xerox Document Submission client application does not run properly or the job cannot be submitted to a queue, perform the following:

The user must exit the Xerox Document Submission and Windows applications

Verify the user is logged on to the appropriate file server.

Restart the Xerox Document Submission software at the client workstation.

Macintosh problems

A job is submitted from a Macintosh client and the printer queues cannot be viewed.

If the Macintosh client cannot view any printer queues from the Chooser, perform the following:

1. Verify that the AppleTalk network is up and that there is at least one router on the network.
2. If there is no router on the AppleTalk network, jobs cannot be submitted through the AppleTalk gateway. When a router becomes available, reboot the controller to submit jobs through the AppleTalk gateway.
3. If there is a router on the Apple Talk network, delete the “/opt/XRXnps/bin/atports” file at the controller and reboot.

Note You must be logged in as the root user to delete this file.

FreeFlow problems

A job is submitted from a FreeFlow client and does not print.

If the message, “**Warning: cannot open the file xdms/<filename>.gf/<filename>.tif. Select OK to continue or cancel to stop the print job.**” is displayed, perform the following:

1. Place the queue to which the DigiPath jobs are being sent on hold. Do this by changing the accept status to “no”.
2. Wait until all jobs have completed printing.
3. Purge the /var/spool/XRXnps/var/spool/data/xdms directory.

GUI problems

If any of the modules of the Xerox FreeFlow Print Server do not function or if you cannot use Exit to restart the system, perform the following:

- Xerox FreeFlow Print Server icons disappear or do not respond.
- If the GUI opens with a black, blank background and the label names of the modules do not appear correctly, perform the following:
 1. Determine if the /opt/XRXnps/XRXservui/data/locale/<locale*>/resources directory exists.
 2. Determine if the /opt/XRXnps/XRXservui/data/ui.mn.config file exists.

3. If the above files do not exist, set the XAPPLRESDIR environment variable by entering the following:

```
setenv XAPPLRESDIR/opt/XXnps/XXservui/data/locale/<locale>resources
```

Note The “Locale” is the locale of your server.

- **en_US** for U.S. English
- **in_UK** for U.K. English
- **fr** for French
- **es** for Spanish
- **de** for German
- **it** for Italian
- **ja** for Japanese

Tape Client problems

Verify that the `tcmrpsvc` process is alive:

```
ps -ef | grep tecmrpsvc
```

Isolate the problem by monitoring the `tcmrpsvc` process operations using the following procedure:

1. Log in as root.
2. Kill `tcmrpsvc` process
3. Restart `tcmrpsvc` process with
`/opt/XXnps/XXtpclnt/bin/tcmrpsvc`
from a terminal window to monitor its output message.
4. Start Tape Client user interface in stand-alone mode with
`opt/XXnps/XXtpclnt/bin/tapeclient`
from a terminal window to monitor its output message.

Print quality problems

An image quality problem exists if a job has been submitted successfully, but does not print correctly.

Note If Image Quality parameters are changed, the Xerox FreeFlow Print Server software must be restarted for the change to take affect.

Note The Image Quality default settings are optimized for the printer. If changes are made, the factory installed defaults can be restored by selecting [Defaults]. Selecting [Reset] sets the Image Quality parameters to the most recently applied setting.

To determine the print quality problem and possibly fix the problem, perform the following:

1. Retrieve the error page if one was printed.
2. Submit the job to a draft PostScript printer if one is available to determine if the master is valid.
3. Ensure that jobs are sent to the correct queue.
4. Ensure that a valid PDL is used.

5. If the problem still exists, recreate the job with a different print driver and resubmit the job to the printer.

Font problems

A font problem exists when incorrect printed fonts have character spacing, jagged characters, text running off the page, or sentences running into each other.

To determine and fix the font problem, perform the following:

1. Determine if the font is being downloaded with the job.

Note If a downloaded font is not found, font substitution occurs and an error page is printed.
2. If the font is not being downloaded with the job, determine if the font is loaded on the server by viewing the Fonts module of the Xerox FreeFlow Print Server.
3. If jagged characters are seen, determine if there is a scalable option available for that font and whether the user selected that option.
4. For incorrect characters or text that runs off the page, determine if the document was created with one driver and printed with another driver.
5. If you are comparing prints from a proof printer, ensure that the same PDL file was used to make the prints on both printers.
6. If small fonts are printing ragged, change the default font renderer in Print Manager from the “Adobe Type Manager” to the “Font Solution”.

Inoperable system problems

Determine which partition is full by opening a terminal window and perform the following:

1. Telnet using another system into the controller and use the `su` command to become the root user.
2. At the `#` prompt, type: `sync; sync; halt` and press `<Enter>`.
3. At the `ok` prompt, type `boot`

Note Pressing `<Stop>` and `<A>` may result in lost information if a job is currently being received by the system. Jobs would need to be resent.

Job flow problems

If a job is submitted to a printer but does not print, this is a job flow problem.

Determine the status of the printer, printer queue and ensure that the queue is set to release jobs.

Determine which partition is full by opening a terminal window and entering the following:

- `df -k`
- If the `/var/spool/XRXnps/outQ` partition is full, go to the Xerox FreeFlow Print Server user interface. Open [Preferences] and then [Job Policy]. Set the system to small partitions or large partitions to avoid saturating the outQ.
- If the `/opt` partition is full, delete unnecessary files and compress and move any core files that are in the `/opt/XRXnps/corefiles` directory.

- If the /var/spool partition is full, determine the size of the /var/spool/XXNps/inQ directory. If a job is larger than half the size of the directory, delete the job and restart the Xerox software.
If the job is small, store it on a server and resubmit the job from the client.
Delete any faulted, ineligible, or held jobs that are no longer needed. Also, delete any completed jobs in the /opt/XXNps/log/errorLogs directory.
- If any other partition is full, free space on the partition by deleting any unnecessary files.
- If only one job is in the printer queue, cancel the job and resubmit as smaller files.

If the job is in PostScript, ASCII, or TIFF format and the job status is “processing”, perform the following:

1. Hold the job.
2. Resubmit the job to a draft PostScript printer to determine if the master is corrupted. If the job prints without problems, contact the Customer Support Center.

Note If a job that is known to be without faults has been submitted and does not print, shut down and restart the Xerox FreeFlow Print Server software.

If an active job has a status of “printing” or “waiting for the printer” and does not print and there are no faults or messages displayed, perform the following:

1. Open the printer door. If a message appears in the faults and messages frame, then the communication with the printer is working.
2. Restart the Xerox FreeFlow Print Server software. If the problem still persists, contact the Customer Support Center.

Job integrity problems

If the job does not print as expected (missing pages, missing data, incorrect page orientation, incorrectly ordered sets, job attribute inconsistencies), perform the following:

1. Check the job properties to ensure proper programming.
2. Check for any queue override attributes that may be conflicting with the job programming.
3. If the job is PCL or PostScript, check for job ticket information that may have created a problem with the job. Make changes and resubmit the job.

Tray to media mapping problems

The JPM logs contain the job attributes that the XPIF library is setting. In cases where the tray to media mapping is not happening as expected, then this log can give clues on how the mapping is being translated into job attributes.

/opt/XXNps/log/JPM.Debug.Log

Gateway problems

Gateway logs reveal how the data is being received by the system.

/opt/XXNps/log/CGAPI.Debug.Log (for IPP gateway)

/opt/XXNps/log/XLP.Debug.Log

/opt/XXnps/log/Socket.Debug.Log

PDL problems

If a problem exists with a PDL job, the System Administrator can ask the job submitter specific questions to identify the problem. Possible questions that may help are the following:

- What printer driver was used to create the file?
- What application was used to create the file?
- Do all applications create this file format?
- Have you tried to use a different printer driver? If not, do so to conclude if it also creates problems.
- Has the file printed previously on a different printer?
- Was the file recreated and resubmitted?
- Have you checked to see if the destination queue is accepting files? Were the resources adequate?
- Did this file or a similar file print on a previously installed version of the system software?

PostScript problems

The following questions may be helpful to ask when trying to isolate a PostScript problem:

- What printer driver was used to create the file?
- What client/application was used to create the file?
- Was the file recreated and resubmitted with a different driver? What was the result?
- Is there a printed PostScript error page, and what errors were listed?
- Is the queue faulted, or is it accepting jobs?
- Did this file or a similar file print on a previously installed version of the system software?
- Will the job print on any other PostScript printers?
- Does the PostScript file distill properly using Acrobat Distiller?

TIFF problems

The following questions may be helpful to ask when trying to isolate a TIFF problem:

- Is the file a true TIFF, or is it a TIFF wrapped in a PostScript wrapper?
- Did the PostScript error page list the error as “Decomposition Task Failed” to indicate that the tags and compression formats of this file are not supported?
- What type of client and application were used to submit the file?
- Can the TIFF image be viewed using any software package?
- Does the error page list errors such as “image mask”, “Xeroximage” or “image” to indicate that the FTP transmission of the file has corrupted the TIFF image data?
- If the file has an orientation problem, has an attempt been made to change the orientation using the Xerox Client Software print command orientation switch?
- What compression format was used to compress the file?
- What dots per inch (dpi) resolution was used or intended for the file?

PDF problems

The following questions may be helpful to ask when trying to isolate a PDF problem:

- Was the PDF created from the original PostScript using the latest version of Adobe's PDF Distiller?
- Does the original PostScript file print correctly?
- Will all of the pages of the job open with Adobe Acrobat?
- What application and/or PDF software created the PDF file?
- With the printer's error pages turned on, does the printer produce a PostScript error page?
- Has the file been redistilled again using a newer PostScript?
- Are all of the document fonts downloaded and included within the job?
- What was used to create the PDF? PDF Writer or Adobe's PDF Distiller?

Editor problems

For problems with the Editor, diagnostic and troubleshooting should start with the Editor. The following is the command that validates that the Editor is "alive":

```
ps -eflgrep XRXuiEdit
```

The administrator may be able to isolate the problem by monitoring the XRXuiEdit process operations and following these steps:

1. Login as root.
2. Kill XRXuiEdit and GUI process.
3. Copy the updated executable class file over to the system:
4. `opt/XRXnps/XRXuiEdit/bin/pdfView Edit/*.class` files and
5. `opt/XRXnps/XRXuiEdit/bin/pdfParser/*.class` files.
6. Restart the Xerox FreeFlow Print Server GUI using `./startGUI` command.
7. Verify the `/opt/XRXnps/logs/ui_logs` from a terminal window to monitor its output message.

Restore password

To restore the default password if an operator or system administrator forgets the system password, perform the following:

1. Open a terminal window.
Logon as the root user by typing `su` and select <Enter>.
2. Enter the password and select <Enter>.
3. At the prompt (`#`), enter the following: `cd /opt/XRXnps/XRXui61XX/data` and select <Enter>.
4. Type: `ls -la` and select <enter>.
5. Delete the files ".npw" and ".sum" by typing `rm .npw .sum` and selecting <enter>.
6. Open the System menu and select [Logon]. Select the desired user type and enter the password. Select <OK>.

7. An error message displays, “A problem was detected in the password file.” Select <OK> and retype the default password again and select <OK>.
8. A message displays in the main window which reads, “Missing password file recreated.”
9. Select on the “missing password file” recreated message. A pop-up window displays the service code C03-501. Another message is displayed which reads, “The missing password file has been recreated. All current passwords are now valid. Contact the system administrator to install operator and system administrator passwords.”
10. Select [Reset].

Restart Xerox FreeFlow Print Server software without rebooting

If [Exit] is accidentally selected from the Xerox software, perform the following to start the software without rebooting the controller:

At the bottom of the GUI, select [Launch > Restart FreeFlow Print Server...]

Productivity and performance problems

If a job takes longer to process than anticipated and a performance problem is suspected, take the following steps to check the system:

1. Check the job status in the Job Manager window.
2. If the job status is Hold, select [Release] to process the job.
3. If the job is RIPing, check the performance meter. If the CPU activity is high, the decomposer is working. If this is not true, restart the Xerox FreeFlow Print Server software.
4. Submit the job to a draft printer to determine if the master is valid.
5. Check the time on the decomposer that is working on the job. For example, if the job is a PostScript job, type the following in a Terminal Window: `ps -aelgrep ps_cdf`
The system returns a time value along with the process ID of the PostScript decomposers that are running. Wait, then repeat the command. If the time displayed is increasing, then the job is RIPing.
For a PCL job, type: `ps -aelgrep pcl_cdf`
For a TIFF job, type: `ps -aelgrep tiff_cdf`
6. If problems still persist, contact the Customer Support Center.

Problems when saving a job

If a job was submitted from a client with a save destination, but is not saved, perform the following:

1. Ensure that the banner and error pages are enabled,
2. Submit the job for printing.
3. Check the error page for the words “OFFENDING COMMAND”. The words after this instruct what to do to fix the file.

If there is a problem with a job saved to CD, the administrator uses the following:

`#cdr -1` lists all the CD writers found in the system.

Troubleshooting

cdwr -M reports media status. CDRW reports if the media is blank or note its table of contents, the last session's start address, and the next writable address if the disk is open.

Printing system logs

System logs gather information to recover various system problems.

Logs are used to gather second level information on the operation of the system. These should only be used when directed by this guide or by the Customer Support Center. All logs are found in the /opt/XXnps/log directory. The most recent entry is at the bottom of the file.

all_jobs_log

The all_jobs_log contains information about the status of various tasks associated with processing a job, such as decomposing, marking, and printing.

The format of the file is as follows:

Logging Module /t# Absolute Time /t# Job ID /t# Message

system_log

The system_log contains information about general high level system events such as the initialization of software or the starting of a process.

The format of the file is as follows:

Logging Module /t# Absolute Time /t# Message

status_log

The status_log contains information about the attributes of a job once it has been accepted and tracked by the system.

The attribute information found in this file is as follows (the sequence and attributes displayed vary with the job):

Logging Module /t# Sender Name /t# Data Size /t# Document Name /t# Document Format /t# Job ID /t# Virtual Printer Name /t# Message /t# Time /t# Network Protocol /t# Assigned Physical Printer /t# Plex /t# Plex Requested /t# Disposition

ep_exception_log and ep_primary_log

These logs contain a list of faults. The ep_exception_log contains a listing of all logged faults. The ep_primary_log contains exceptions that are the primary cause of the problem.

The format of these files is as follows:

Logging Module /t# Absolute Time /t# Microseconds /t# Instance ID:Module TD /t# Exception ID /t# Service Code

LPR logs

The following logs are important for troubleshooting problems in mapping NPS and Xerox FreeFlow Print Server:

- LPR logs that contain information related to the LPR gateway such as missing jobs or communications problems.
Examples: `/opt/XRXnps/log/XLP/Debug.Log`
- JPM logs that contain information related to the Job Pool Manager (JPM). The attribute set by the LPR Gateway can be checked and verified by looking at this log:
`/opt/XRXnps/log/JPM.Debug.Log`.

Printing the accounting log

Print the Accounting log to gather information and recover from various accounting problems. Either the entire Accounting log or a portion of the log may be printed. This can be completed on the Xerox FreeFlow Print Server interface in the [Administration] section.

LP/LPR and the ASCII job tickets

The following procedure is used to verify that the attributes and options are correct:

1. Open a terminal and login as root
2. Enter: `setenv LD_LIBRARY_PATH/opt/XRXnps/lib`
3. Enter: `[/home/rlech/bin]getAttrstV`
4. The program executes and lists valid options.
5. Enter: `g j`, the job number from Job GUI>
6. The job attributes display.

Note For detailed procedures see the Online Help.

Rebooting and restarting

Recovery procedures throughout this guide instruct you to either reboot or restart the software.

To reboot the system and perform a file system check, perform the following:

1. Place your mouse cursor in the background outside of the Xerox FreeFlow Print Server Print Services window.
2. Right-click and select [Programs].
3. Select [Terminal].
4. Put your mouse cursor in the window and type: **su**
5. Select <Enter>.
6. Type in your root password.
7. Select <Enter>. A # symbol displays.

Note When entering text, do so in lower-case because UNIX is a case sensitive system.

8. Type: **sync; sync; halt**
9. Select <Enter>. The system reboots.
10. A Program Terminated message and an OK prompt display. Type **boot -s**
11. Select <Enter>. The system reboots.
12. When you receive the following message, "Type Ctrl-d to proceed with a normal startup, (or give root password for system maintenance)" type the root password again.
13. Select <Enter>.
14. Select the <Ctrl> and <d> keys on your keyboard at the same time to complete the boot.

Note This procedure performs the file check and takes about one minute. The # symbol appears again.

If there are problems starting the software, check the console window for messages.

Loading XJDC/Unix

The Xerox Job Description Compiler is loaded by entering the following on the command line:

```
/opt/XRXnps/bin/XJDC [-option[,option...]] <filename>.
```

The **filename** is the name of the JSL file that is to be compiled. The JSL filename is required to terminate with the suffix .jsl or .JSL. The filename may contain path information.

Many options may be specified and shown in the above example. The **options** may be specified in any order and are 3-character abbreviations. A list of the available options and their abbreviations are as follows:

- REPlace / NOReplace: Replace or backup existing PDL object files.
- DISplay / NODisplay: Display or suppress XJDC messages.
- PRInt / NOPrint Generate: JSL compilation listing always or only when errors/warnings occur.
- TRUn cate / NOTruncate: Truncate or accept JSL source lines after 72 characters.
- LABel / NOLabel: Generate or suppress 128-byte Xerox standard label.
- COMpile / SCAN: Compile with output or scan only.
- SINGlebyte / DOUBlebyte: Use singlebyte or doublebyte code and printer carriage control translation files.
- Vx: LPS PDL version number, x = 10, 2, 35, 3615, 37, 38, 39, 40, 50, 3A, M10.
- PAPersizes: Paper size to use for PDL VM10, s = USLEGAL / USLETTER / A4.
- DATed = d: Date format, d = US / EUROPEAN.
- PAGinate = p: Lines per page, n = 0, 5 to 999 (0 means no pagination).
- OUTpath=p: Base directory for output files, p = <path>, default is current directory (Note that ~ is not supported.).

Configuring XJDC/Unix

The configuration file, CONFIG.TXT found in the directory /opt/XRXnps/bin/, contains default parameters for the invocation of XJDC. The text file can be edited using any simple text editor.

The first line of the configuration file must not be edited; it contains XJDC version information. Each subsequent line contains a single option; any text following the first word, and any invalid options, are ignored. Options may be repeated or contradicted on following lines; the last option specified overrides previous options. The following sample configuration file is provided:

```
XJDC VM10 PDL Compiler  
REPLACE  
NODISPLAY  
PRINT  
TRUNCATE  
LABEL  
COMPILE  
SINGLEBYTE  
VM10  
PAPERSIZE=USLETTER  
DATE=US  
PAGINATE=60  
OUTPATH =/opt/XRXnps/resources/lcds
```

XJDC hints and tips

- If the config file needs to be changed, modify the `/opt/XRXnps/XRXXJDC/data/CONFIG.TXT` file. Otherwise, the default setting in the `CONFIG.TXT` file takes effect.
- An example for the syntax `/opt/XRXnps/bin/XJDC filename` would be: `/opt/XRXnps/bin/XJDC /home/XDJCtest/BASIC.JSL` where the filename is represented by `/home/XDJCtest/BASIC.JSL`
- The output files are stored under the `OUTPATH` directory which is specified in either `/opt/XRXnps/bin/CONFIG.TXT` file or command line. For example, if `OUTPATH` is `/opt/XRXnps/temp/`, then all the output files are put in the directory of `/opt/XRXnps/temp`.
- JSL source files can be edited using the `textedit` command or `UNIX vi` command. The `textedit` utility is available with the sun operating system. To invoke the editor, bring up a Terminal window and type **textedit**. For example, open a terminal shell and on the command line, type: `textedit BASIC.JSL` or `vi BASIC.JSL`
- During the XJDC compilation, if an error is encountered, the compiler prints the error report to the printer. Ensure the first available queue is a PostScript queue.

Output files

Upon compilation of a JSL source file, the XJDC generates the following:

- JSL source listing file

<filename>.lst or <filename>.LST

The filename is the name of the JSL file, excluding path information. The case of the file extension corresponds with the case of the file extension of the JSL source file.

- Resource listing file

<filename>.rsc or <filename>.RSC

The filename is the name of the JSL file, excluding path information. The case of the file extension corresponds with the case of the file extension of the JSL source file.

- Zero or more PDL object files of types

.JDL .CME .IDR .LIB .PDE .STK .TST

All filenames are in upper case and are written to the directory <outpath>/VM10 where outpath is the output path specified. Files are overwritten if the REPLACE option is selected; otherwise they are renamed to \$xx where xx is the first two characters of the file type.

- A log file containing messages displayed to the screen

XJDC.LOG

The log file is written to the directory in which XJDC/Unix is installed and is appended at each invocation of XJDC.

Ejecting a CD/DVD on a Print Server station

If pressing the eject button on the front of the CD/DVD-ROM drive does not eject the disc, then use the following procedure:

1. Select [System - Eject CD/DVD].
 - a. If the CD/DVD ejects, remove the CD/DVD and close the drive.
 - b. If the CD/DVD still does not eject, continue to the next step.
2. Select [Setup] and then [System Configuration]. The System Configuration window displays.
3. Select the Peripherals tab.
4. Right-click on the drive entitled "CD-RW 0/DVD-RW 0."
5. From the right-click menu, select [Eject/Unload]. This dismounts the disc, and protects the platform from damage caused by attempting to eject the media manually.
6. Select [OK] to close the "Removable Media Manager" window.
7. Now use the disc drive [Eject] button to eject the disc.

Remote Services

The Xerox FreeFlow Print Server family provides a host of remote services via Print Server Remote Services Software. There are several key components to this service suite along with future capabilities:

- Problem Reporting allows administrators to send problem data to Xerox Service teams for analysis. This service can also be extended to provide analysis of problems over time to help the customer optimize system use.
- Service Requests allow Xerox service personnel to proactively push automated actions that the Xerox devices would perform to optimize the customer's system.
- Support Access will enable customers to collaborate in problem solving and share desktops with Xerox Service and Support teams. This would occur in real time by enabling an observe/control view of the system.
- Billing (future capability) will enable Xerox to manage system meter reads in a consistent and timely manner.

Note Refer to the Remote Services Installation Guide for more information.

Hints and Tips

9

This section describes methods for handling workstation issues, optimizing job performance, and enhancing image quality.

General

These procedures address workstation display.

Disabling the Solaris Screen Saver

To disable the Solaris Screen Saver:

1. Open a Terminal window.
2. Type the following path: **cd /usr/openwin/bin.**
3. Type **dtpower**.
4. Select Yes from the Scheme Confirmation window that opens. The Power Saver screen is displayed.
5. From the Current Power Saver Scheme pull-down menu, select Disable.
6. Select OK, and close the Terminal window.

Color Systems

The Xerox FreeFlow® Print Server software takes advantage of new laser technology and other hardware advances.

Settings for enhanced color output

Set the 200 Line on Queue and calibrate. The 200 Line produces dramatically better results. Also the level of noise in the new 200 Line is negligible and produces benchmark results.

Set SWOP Plus Output for CMYK. This simulates the SWOP press while taking advantage of the digital press gamut.

Note An additional way to improve color output is to use the profile overrides in Job Properties. This option is available to systems with override capability.

Color job processing efficiencies

The time required to process a job can depend primarily on four variables:

- Time for a client workstation to generate the Page Description Language (PDL, i.e. PostScript, HP-PCL, TIFF, etc.).
- Time to transfer the job PDL across the net and be marked as received by the Xerox FreeFlow Print Server.
- Time required to RIP the PDL to produce the bit maps that the print engine can use.
- Time required to write the RIPped bit maps to the print engine and generate paper.

Time used to generate the PDL

This variable is strongly influenced by the speed of the client workstation, the print driver being used by the application, and the complexity of the pages to be printed.

Time used to transfer PDL

This variable is influenced by the speed of the network connection between the client workstation and the Xerox FreeFlow Print Server. It is also impacted by the number of workstations on the network, by the configuration of the network (that is, the number and speed of the gateways and routers and by the number of simultaneous network connections that the Xerox FreeFlow Print Server has to manage). Finally it is impacted by the complexity of the pages being printed (i.e. the size of the PDL files being transferred).

Time required to RIP PDL

This variable is influenced by the efficiency of the PDL to be RIPped, the complexity of the pages being RIPped, the number and resolution of images included, and the media/color space transforms being performed on the data before imaging/printing.

Time required to print PDL

This variable is influenced by the media being used and the paper path through the printer. Whether the printing is face up or down, simplex or duplex, all one size or a mix of sizes to be drawn from different trays all make a difference. In addition, the complexity of the pages and therefore the number of Image Quality adjustments that the print engine makes during a job also impact the final performance of the printer as it generates paper.

Job submission hints

There are a number of ways to analyze the nature of the job being submitted to optimize performance and maintain image quality.

Number of images

The number and resolution of the images that are embedded within a job is a big driver of the PDL size and therefore PDL generation time, data transfer, spool, and RIP performance. Minimizing the number and/or resolution of embedded images improve performance.

PostScript preScan and full scan

Under PDL settings the operator has the option to prescan the first page of the job for DSC comments or to scan the full job before scheduling.

Normally the operator would click the [Basic] button, that is to scan the first page, when submitting a PostScript job. However, if the PostScript files are concatenated, the [Full] button should be used. This allows all the DSC comments to be scanned before the job is submitted.

PostScript factory settings

The Adobe factory settings have been updated to better reflect current technology and performance needs. The new settings have the greatest impact on VI workflow for the DT75, DT90, DT61xx and EPS printer families. The impact on the operator is that they no longer have to manually modify these parameters for their PS files.

Resolution	61XX Family	Highlight Color	Nuvera 100/120	DT75/90	Entry Color (DocuColor 2045/2060/ 5252/6060/ 8000/7000/ 5000)	iGen3
300 X 300						
VM	32 to 48	32 to 48	NA	32 to 48	32 to 96	32 to 96
MaxFormCache	100,000 to 16,000,000	100,000 to 16,000,000	NA	100,000 to 16,000,000	100,000 to 32,000,000	100,000 to 32,000,000

Resolution	61XX Family	Highlight Color	Nuvera 100/120	DT75/90	Entry Color (DocuColor 2045/2060/5252/6060/8000/7000/5000)	iGen3
MaxFormItem	100,000 to 16,000,000	100,000 to 16,000,000	NA	100,000 to 16,000,000	100,000 to 32,000,000	100,000 to 32,000,000
600 X 600						
VM	48 to 64	48 to 64	48 to 64	32 to 64	48 to 96	48 to 96
MaxFormCache	100,000 to 16,000,000	100,000 to 16,000,000	100,000 to 16,000,000	100,000 to 16,000,000	100,000 to 32,000,000	100,000 to 32,000,000
MaxForm Item	100,000 to 16,000,000	100,000 to 16,000,000	100,000 to 16,000,000	100,000 to 16,000,000	100,000 to 32,000,000	100,000 to 32,000,000
1200 X 600						
VM	64 to 64	NA	64 to 64	32 to 64	NA	NA
MaxFormCache	100,000 to 16,000,000	NA	100,000 to 16,000,000	100,000 to 16,000,000	NA	NA
MaxFormItem	100,000 to 16,000,000	NA	100,000 to 16,000,000	100,000 to 16,000,000	NA	NA
1200 X 1200						
VM	NA	NA	64 to 64	NA	NA	NA
MaxFormCache	NA	NA	100,000 to 16,000,000	NA	NA	NA
MaxFormItem	NA	NA	100,000 to 16,000,000	NA	NA	NA

Ethernet

To keep the network from becoming over loaded with jobs when several clients are simultaneously submitting and printing, it is important to have a fairly fast ethernet (100BaseT or faster).

Gateways

If a user has all of the Xerox FreeFlow Print Server gateways installed and active, performance are less than expected because the work required to monitor each added gateway and potential client

connection consumes a small portion of the available CPU time. If this is a problem, you may wish to remove gateways not being used (i.e. lpr, IPP, SNMP, HTTP, Novell, Appletalk or Token Ring), keeping only those that are needed.

Job submission order

Job submission order can impact performance. It is suggested that a job with many pages to be RIPped and a large number of copies should be submitted at the end of the day if possible. With the printer paused, the job can then RIP over night. The job then starts printing at the beginning of the next day and while it is printing, the Xerox FreeFlow Print Server can process a complex/difficult job that takes a long time to RIP. As long as the previous job is still printing when the next job finishes RIPping, the Print Server can RIP still another job to get even further ahead. In this way, the print engine itself is never idle waiting for a hard job to finish RIP.

Job RIP hints

If using the default media/color settings that are pre-loaded on the controller, the Xerox FreeFlow Print Server process built in color space transformations to accelerate RIP performance. If you do any of the following, the color space transformation probably takes more time and the RIP is slower:

- Define own media
- Include input or output ICC color profiles in the PDL file
- Change any of the system color settings (that is, saturation, lightness, color adjustments for C,M,Y or K, emulation mode, etc.)

Note In general, RGB and LAB color space transformations are slower than CMYK transformations. If the input images of a job can be created in CMYK color space, then the Xerox FreeFlow Print Server are able to process the job more efficiently.

Variable data

Variable data job construction is also an important driver of RIP performance. Jobs that are constructed with a single underlay or background plane and a small number of variable text or image overlays run very efficiently. If the same job is constructed with the underlay constructed from several distinct objects which the Xerox FreeFlow Print Server is asked to compose on the fly, then the job is not able to take advantage of the Print Server variable data performance enhancement. In that case, the job may RIP significantly slower than the more efficiently constructed job.

For cases where the background/underlay of the variable data job is composed of 2 or 3 relatively static objects, it is suggested to have the application create each static combination of objects as a different underlay. This is more efficient than having the Xerox FreeFlow Print Server perform the composition. When creating variable objects to be overlaid on fixed underlays or backgrounds, it is also important to ensure that the objects are properly cropped or bounded and at the lowest acceptable resolution. The Print Server can compose 2 variable data objects of 2 inches by 2 inches and 300 dots/inch resolution about 10-20 times faster than it could if the same objects were 600 dpi and 8.5x11 inches.

Image Quality (IQ)

Generally the image quality of a base printing system is above average, and the Image Quality (IQ) enhancements filters provided within the Xerox FreeFlow Print Server are unnecessary. If you wish to improve output IQ, the Print Server provides separate controls for enabling Anti Aliasing, Trapping, and Intelligent Black Overprint.

Disabling all three of these IQ filters improves performance. If you are printing only a small number of copies, the expected increase in RIP time is visible as a significant fraction of the total job processing time.

When printing documents with a large a number of copies, then the majority of the processing time is devoted to the actual printing and the RIP performance decrease is less visible (a smaller fraction of the total job time). You should examine the Xerox FreeFlow Print Server printed output with the IQ enhancing filters enabled and disabled and decide whether the IQ improvement is worth the performance drop for this particular job.

On the DocuColor 2045/2060/6060/5252/7000/8000/5000 there are certain scenarios in which the printer will cycle down and do an Image Quality (IQ) adjustment. The percent area coverage of the page (that is, amount of image/text written on the page) also effects the number of IQ adjustments that the printer makes. A standard letter size page (8.5x11 inches) is about 21.6x27.9 cm or about 603.5 square cm.

If the text and images written to a page cover more than about 250 square cm (about 40 % of the page), then the print engine automatically generates IQ adjustments.

If you find that a particular document seems to take a long time to print because of IQ adjustments, improve performance by simplifying the page. For example, the text and images on the page might be downsized to cover less than 40 % of the viewable area of the paper and the performance may improve because the printer does fewer IQ adjustments.

The DocuColor 2045/2060/6060/5252/7000/8000/5000 print engine also performs IQ adjustments if a difficult job is being processed and RIP falls behind the print output. If this occurs, the print engine will cycle down for a few seconds while the RIP catches up and then it performs an IQ adjustment which takes anywhere from 5-95 seconds. During the IQ adjustment, the printer does not print anything. However, the RIP continues and be slightly ahead. As soon as the printer finishes the IQ adjustment it prints all of the RIPped pages and catches up with the printer.

Job printing hints

The DC 6060 print engine cycles down on certain operations such as on tray/bank switches or between jobs. Each cycle may take 10-40 seconds to complete before the print engine is ready to print again.

To avoid unnecessary print engine cycling, you can perform the following steps:

- Disable finishing, slip-sheets and offset stacking.
- Disable banner sheets when making multiple copies of a job.
- Avoid media tray switches by constructing the job to use only a single size, color, and weight of paper and by ensuring before running a job that the currently active tray has enough media loaded to print the entire job.

Skipped pitches

To stop the cycle of skipped pitches and cycle the print engine down, perform one of the following to improve the overall job performance:

1. Process the job in N-1 order rather than 1-N order. This forces the job to be completely RIPed before the print engine is started up. When the print engine starts it consumes pages at 60 ppm until all pages are printed.
2. The user could pause the printer (the green button on the Xerox FreeFlow Print Server interface) until a large number of pages in the job have been RIPed. If the user then resumes the printer at the right time (some time before the whole job is RIPed), the print engine prints all of the queued pages and the controller simultaneously finishes RIPing the remainder of the job. To do this successfully, the user needs to watch and compute the rate that the Xerox FreeFlow Print Server is RIPing at. If you know how many pages are in the job, then knowing that the printer generates paper at 60 ppm, you can compute how far from the end of the job to release the printer so that RIP and print finish at the same time.

PCI channel interface PWB trace capture

Load the PCI Channel Interface PWB Trace command when software is installed and the PCI Channel Interface PWB is detected. This procedure is usually performed at the request of Software Engineering or as part of a SPAR package.

Perform a trace

To start the trace, perform the following:

1. Login as Administrator.
2. Select [System - Online Manager].
3. Select:
4. Channel Gateway - Enable
5. Input Device - Online
6. Input Control - Start
7. Submit a job from the host.
8. After the job is completely received by the Controller, select Input Control - End.
9. Open a Terminal window.
10. Type `cd /opt/XXNps/XXGrpset/bin` and press <Enter>.
11. Type `./dspTrc > FileName.txt` and press <Enter>.
12. Type `ls -l` and press <Enter> to see the new file and the file size.
13. If the file size is greater than 1.44 MB, type `compress FileName.txt` and press <Enter>. If the file size is less than 1.44 MB, go to “Export the trace file to CD/DVD”.

Export the trace file to CD/DVD

To export the trace file to a CD/DVD, perform the following:

1. Insert a blank, formatted CD/DVD into the CD/DVD drive.
2. Type `volrmount -i` and press <Enter>.
3. Type `eject` and press <Enter>.

Command Line Utilities

Utility	Change Description	Focus
/opt/XRXnps/bin/setascii decomposer	Forced ASCII files through designated decomposer (that is, ASCII through PCL). Implemented in queue manager in 2.1	Black and white
/opt/XRXnps/bin/setfifomode	Enables FIFO job reception mode in front end of system.	Both
/opt/XRXnps/bin/setFontSize	In 3.1, allows user to set the font size on the main GUI to a larger and more visible size.	Both
/opt/XRXnps/bin/setimagepath	Disables/Enables Xerox Image Path. any problems that necessitate using this utility should be reported to Xerox development ASAP.	Color
/opt/XRXnps/bin/setlcddsDJDEsemicolon	Allows for correct printing of a DJDE that has the incorrect termination of;END; instead of,END, (J11 patch compatibility).	Both
/opt/XRXnps/bin/setlcddsDJDEspimm	Enables the system to ignore 0x)b in between DJHDE begin records (J11 patch compatibility).	LCDS
/opt/XRXnps/bin/setlcddsPmodeSwop	Disables/enables swopping of BEGIN values when there was a page orientation switch (J11 patch compatibility).	LCDS
/opt/XRXnps/bin/setlpcopycount	Default is to ignore an LPR Copy Count of 1. Utility to set lpr to accept a copy count of 1.	LCDS
/opt/XRXnps/bin/setpapdbootswitch	Sets Appletalk behavior for AdboePS8.6 foreground job problem if font list is large.	Both
/opt/XRXnps/bin/setsetlineterm /opt/XRXnps/bin/setsetpclcontrol (Option1)	Sets the default PCL decomposer line termination mode (that is, CR.LF). Use "setpclcontrol" tool in 3.1.	Black and white
/opt/XRXnps/bin/setpclcontrol (Option2)	PCL custom size factory default script allows the Xerox FreeFlow Print Server to better match HP's variations on customer size imaging.	Black and white

Utility	Change Description	Focus
/opt/XRXnps/bin/setpclcontrol (Option3)	PCL saves resources function. Gives capability to save pcl resource from memory to disk on a job by job basis.	Black and white
/opt/XRXnps/bin/setVPSoption	On the socket gateway mainframe echo commands are stripped by default. If non VPS streaming clients are being used, this utility must be run to avoid data loss.	Black and white
/opt/XRXnps/bin/setBind128	Enables you to bind 128 pages.	Black and white
/opt/XRXnps/bin/setpdfsuppresscsa	When PDF files are created with Adobe Acrobat Distiller 5.0 and above, the output may have color management applied by default. This results in text printing as halftoned images. The Xerox FreeFlow Print Server is rendering the file correctly, however, this is often not a desired output.	Black and white
/opt/XRXnps/bin/setpantonetoprocess	This script determines how pantone calls are handled by the Xerox FreeFlow Print Server.	Color
/opt/XRXnps/bin/setpdfbinarycheck	Enables/Disables PDF binary check. System default is enabled. If you disable it, PDF performance may be impacted.	Both
/opt/XRXnps/bin/setsweepdither	Enables/Disables sweep dither level. Customer jobs that contain Sweeps that are created with PS Level 3 Printer Driver using the SmoothSHading PostScript operator may exhibit Contours when printed on the Xerox FreeFlow Print Server. Default is on and set to 1.	Color

Utility	Change Description	Focus
/opt/XRXnps/bin/setonesideduplexat devicedeact	<p>This utility command allows a combination of duplex and simplex subset finishing.</p> <p>Disabling the utility causes the Xerox FreeFlow Print Server PostScript decomposer to ignore the commands to eject a duplex page as a one-sided page. The entered job prints in duplex mode. This is the current default behavior of the decomposer.</p> <p>Enabling the utility, the decomposer prints in simplex when it encounters the appropriate PostScript command that deactivates duplex mode. The resulting output is a combination of duplex and simplex pages.</p>	Both
/opt/XRXnps/bin/setobjectonwhitetagging	Enables/Disables tagging of stroke objects on a white background.	Color
/opt/XRXnps/bin/set6060streaming	<p>This option enables 6060 job streaming.</p> <p>Option 0 - Jobs are not streamed to 6060 (fast).</p> <p>Option 1 - Jobs are streamed to 6060 (slow).</p>	6060

