RICOH

RICOH InfoPrint Manager™ for Linux

Planning Guide

Version 4.13.1

For information not in this manual, refer to the Help System in your product.

TABLE OF CONTENTS

1 Introducing InfoPrint Manager for Linux

Introduction

Important

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- Throughout this publication, references to directory paths indicate the default paths only. If you install InfoPrint Manager or any of its components in a different location, including a different drive, you must adjust the paths accordingly.
  For example, if you install InfoPrint Manager on the D: drive of a computer running a Windows operating system, replace C: with D: in the directory paths.

Guides for this application

This publication provides information about RICOH InfoPrint Manager™ for AIX, Linux, and Windows, Version 4.13 (Program Number 5648-F40).

This publication includes an overview of InfoPrint Manager and installation and configuration information about the product.

Instruction manuals

These instruction manuals are included:

For information about InfoPrint Manager, see these documents:

- *RICOH InfoPrint Manager for Windows: Planning Guide* , G550-1071
- *RICOH InfoPrint Manager for Windows: Getting Started* , G550-1072
- *RICOH InfoPrint Manager for Windows: Procedures* , G550-1073
- *RICOH InfoPrint Manager for Linux: Planning Guide*, G550-20262
- *RICOH InfoPrint Manager for Linux: Getting Started*, G550-20263
- *RICOH InfoPrint Manager for Linux: Procedures* , G550-20264
- *RICOH InfoPrint Manager for AIX and Linux: Configuring and Tuning Guide*, S550-1062

- *RICOH InfoPrint Manager for AIX: Planning Guide*, G550-1060

- *RICOH InfoPrint Manager for AIX: Getting Started*, G550-1061

- *RICOH InfoPrint Manager for AIX: Procedures*, G550-1066

- *RICOH InfoPrint Manager: High Availability Guidelines*, G550-20261

- *RICOH InfoPrint Manager: Reference*, S550-1052

- *RICOH InfoPrint Manager: PSF, Server, and Transform Messages*, G550-1053

- *RICOH InfoPrint Manager: Secure Print: Installing and Configuring*, G550-20129

- *RICOH InfoPrint Manager: SAP R/3 Planning and Configuring Guide*, S550-1051

- *RICOH InfoPrint Manager: Dictionary of Keywords*, S550-1188

- *AFP Conversion and Indexing Facility: User's Guide*, G550-1342

- *Page Printer Formatting Aid for Windows: User's Guide and Reference*, S550-0801

- *RICOH InfoPrint Manager AFP2PDF Transform Feature: Installing and Using* , G550-1057

- *RICOH InfoPrint Manager: Installing InfoPrint Manager Transform Feature*, G550-20160

Help

Property help is available on many screens to provide information for specific tasks and settings.

In addition, the **Help** menu provides access to the HTML version of the instruction manual directly from the user interface.

⬇ Note

- A PDF reader, such as Adobe Reader, must be installed to view the PDF documentation.

For more information about RICOH printing products, see:

RICOH Commercial and Industrial Printing website at https://www.ricoh-usa.com/en/products/commercial-industrial-printing.

RICOH Software Information Center at https://help.ricohsoftware.com/swinfocenter.

How to read the documentation

Displaying the instruction manual

Use this procedure to view the instruction manuals.

Displaying the instruction manual in PDF format

- InfoPrint Manager includes publications in PDF format on the DVD-ROM supplied with the product.

Displaying the instruction manual in HTML format

- The HTML version of the instruction manual is available directly from the user interface. Start the application, and then click ⟨ ? ⟩ button at the right of the banner and select **Help**.

Displaying property help

Click the ? button next to a property on the user interface to display the property help for that item.

Symbols

The following symbols are used in this manual to help you to identify content quickly.

⭐ Important

- This symbol indicates points to pay attention to when using the product. Be sure to read these explanations.

🔽 Note

- This symbol indicates helpful supplementary information that is not essential to completing a task.

Bold

Bold type indicates the names of dialogs, menus, menu items, settings, field labels, buttons, and keys.

Italic

Italic type indicates the titles of manuals and variables that you must replace with your own information.

`Monospace`

`Monospace type` indicates computer input and output.

Abbreviations

AFP

Advanced Function Presentation

IP

Internet Protocol

PDF

Portable Document Format

PCL

Printer Command Language

GIF

Graphical Interchange Format

JPEG

Joint Photographic Experts Group

TIFF

Tagged Image File Format

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1. Introducing InfoPrint Manager for Linux

- InfoPrint Manager Electronic Software Distribution
- Optimizing your print resources
- Understanding the InfoPrint Manager server
- Understanding server configuration options
- InfoPrint Manager interfaces
- Comparing InfoPrint Manager on different platforms
- Supported printers
- Supported data streams

InfoPrint Manager for Linux is a flexible and scalable print management solution, providing you with many choices of how to expand and manage your print environment. Your print environment might be simple with a few high-speed devices located together, or you might support hundreds of printers dispersed across your enterprise. In either case, InfoPrint Manager helps you make the most of your printing resources.

🔽 Note

RICOH InfoPrint Manager™ for Linux and RICOH ProcessDirector™ cannot be installed on the same server.

InfoPrint Manager Electronic Software Distribution

InfoPrint Manager implemented Electronic Software Distribution (ESD), a solution intended to facilitate the product entitlement and distribution flow while allowing you to try the product before purchasing it, preventing unauthorized use. There are other benefits of electronic software distribution, such as faster delivery and better control and management of your InfoPrint Manager licenses. The product can run now in one of the two ways: either as trial or a registered version.

Obtaining a trial version of InfoPrint Manager has never been easier. To download your installation kit for one of the supported platforms (AIX, Linux, or Windows), go to https://dl.ricohsoftware.com/trial_request. You can try the product for a period of 60 days, after which the product stops functioning. Converting InfoPrint Manager from a trial version to a registered version is possible at any time, without requiring reinstallation of the product, even after the evaluation period has ended.

You can install InfoPrint Manager in trial mode on multiple machines from the same installation kit. Once the trial period expires, you cannot reinstall InfoPrint Manager in trial mode on the same machine.

The InfoPrint Manager Base Server and the following features are available for your evaluation:

- InfoPrint Manager AFP2PDF Feature

- InfoPrint Manager Pull Print Feature

- InfoPrint Manager SAP Print Feature

- InfoPrint Transform Manager Feature

For more details about the evaluation license, go to https://global.ricohsoftware.com/products/ricoh-infoprint-manager/.

If you decided to register your InfoPrint Manager product, you must purchase a valid license key specific for the base server and optionally for the separately priced features available. You can purchase either a **subscription** license or a **perpetual** license for the base server and for the optional features you have chosen.

There are several types of registration license keys:

1

Subscription

The subscription license has a defined period of usage.

Perpetual

The perpetual license has an unlimited period of usage and insures your Infoprint Manager software continues to run, even if the maintenance license expired.

Maintenance

The maintenance license expires after 1, 2, 3, 4, or 5 years, depending on which license you purchased.

🔽 Note

InfoPrint Manager does not check for feature maintenance keys during runtime.

Cold backup

The cold backup license is a special perpetual license available for an unlimited period of usage, for backup purposes of a production license. For more details about this type of license, contact your Ricoh sales representative.

⭐ Important

The **perpetual**, **maintenance**, **and cold backup** license keys are generated using the fingerprint (hardware signature) of the server where InfoPrint Manager will run. In other words, you cannot use a perpetual, maintenance, or cold backup license key on different servers than the one it was intended for. Also, modifying hardware components or the hostname of the server alters the fingerprint, and as a consequence, the license becomes invalid, causing InfoPrint Manager to run in grace mode for a period of 7 days. You must contact your local representative to receive a new license key before the grace period expires. Otherwise the InfoPrint Manager software will stop running on your system when the grace period ends.

Enterprise

The enterprise license allows you to make multiple installations on different machines using the same perpetual, maintenance, and cold backup license key, regardless of the fingerprint of the server. To find out if you are eligible for the enterprise license, contact your Ricoh sales representative.

After purchasing the **subscription** license, you need to use the RICOH Account Administration interface and set up the RICOH Cloud Connector to install the license and register your InfoPrint Manager software. RICOH Cloud Connector is automatically installed together with the product. For more information about RICOH Account Administration and how to set up the RICOH Cloud Connector, see https://help.ricohsoftware.com/swinfocenter/ricoh-account-administration/en-us/raa_AccountAdminstration_project.ditamap/$/raa_HelpTitle. For more information about the installation of the **subscription** license and the registration of your InfoPrint Manager software, see the "Managing subscription licensing" section in *RICOH InfoPrint Manager for Linux: Getting Started*.

After purchasing the **perpetual**, **maintenance**, **or cold backup** license, Ricoh sends an email with EMS - Entitlement Certificate in the subject line to the email address provided when the order was placed. This email contains your Entitlement ID (EID). Generate and download the license keys needed for product registration at the self-service website https://dl.ricohsoftware.com using the EID and the fingerprint of the machine you intend to run InfoPrint Manager on. The EID is only used to identify what you have purchased. To get the machine fingerprint, run the **getfingerprint** utility available on the root of the base DVD-ROM or ISO of the product on a command shell terminal.

To register your product, if you have not installed it yet, during the installation process of the InfoPrint Manager software, choose the path to register the product "**I have purchased this product and I want to register it**". You can register manually providing the path to your license key file downloaded from the self-service website.

To register your product from an existing trial installation, start the License Key Management Application (LKMA) available with the base server and choose the path to register the product "**I have purchased this product and I want to register it**". You can register manually providing the path to your license key file downloaded from the self-service website.

For more information about the License Key Management Application or how to register your InfoPrint Manager software using the LKMA, see *RICOH InfoPrint Manager for Linux: Getting Started*.

The InfoPrint Manager Base Server and the following features are available for your purchase using the electronic software distribution license keys:

- InfoPrint Manager AFP2PDF Feature
- InfoPrint Manager Japanese PostScript Fonts Feature
- InfoPrint Manager PPFA Feature
- InfoPrint Manager Pull Print Feature
- InfoPrint Manager SAP Print Feature
- InfoPrint Manager Workgroup Printer Feature
- InfoPrint Manager Low Speed Printer Feature
- InfoPrint Manager Medium Speed Printer Feature
- InfoPrint Manager High Speed Printer Feature
- InfoPrint Manager Ultra High Speed Printer Feature
- InfoPrint Manager InfoPrint 4247 Feature
- InfoPrint Transform Manager Feature

To understand the use of the features, see .

Optimizing your print resources

Your print resources are the applications that generate print jobs, your printer devices, and the InfoPrint Manager objects that control the jobs as they process and print. Your default InfoPrint Manager configuration includes one InfoPrint Manager server, a queue, a logical destination, and an actual destination (physical printer). Before adding more InfoPrint Manager objects, consider how InfoPrint Manager can help you:

- Manage your printer devices and distribute your printing workload

  Many print environments have a significant investment in printer devices and a significant printing workload. InfoPrint Manager gives you the ability to manage all of your printer hardware centrally. You can establish a configuration that lets you route jobs with common requirements to a particular printer or set of printers that support those types of jobs. This lets you mitigate situations where some printers are idle while others have a backlog of jobs waiting to print. By optimizing the use of each printer, you can distribute your print demands among all available printers.

- Balance the use of Linux operating systems

1

1

By balancing the printing work load, you can also optimize the use of your Linux systems that support printing. These systems can use a significant amount of their resources to accept, schedule, and process jobs, and to manage the printers they control. System usage includes processing time, memory, and fixed disk capacity. If you use several InfoPrint Manager servers running on several AIX, Linux, or Windows systems, you distribute the printing demands of your organization and produce output more efficiently.

- Control print jobs

  InfoPrint Manager provides you with flexibility in specifying defaults for your print jobs. You might want to use different job defaults for specific output devices or for specific types of jobs. When you configure your system, you should consider when and how you plan to use defaults and how to use them most effectively. Effective use of defaults can influence other configuration decisions you make.

- See significant events when they happen

  InfoPrint Manager supports event notification to inform job submitters, operators, and administrators of conditions that require their attention. For example, InfoPrint Manager can notify operators when queues have a backlog of jobs or when the printers they operate are out of paper. Your job submitters can receive notification if InfoPrint Manager cannot schedule their jobs at the requested destination. Notifications include event messages to help your personnel diagnose and isolate the cause of the problem. When you configure InfoPrint Manager, you select the types of notification you want, thus ensuring that the appropriate people are alerted when significant events occur. The most common form of notification is that a job has completed successfully. For example, when a set of payroll checks has finished printing, someone in the Payroll department can be notified that they are ready.

Continue with the next section that describes the different InfoPrint Manager objects and basic configuration considerations for each.

Understanding the InfoPrint Manager server

The InfoPrint Manager server contains a number of "objects" that are used to control the processing of submitted jobs. Objects include queues, logical destinations, actual destinations, and any defaults for job and document characteristics. The server administrator creates, deletes, and modifies these software objects to optimize the management and performance of the InfoPrint Manager environment.

The InfoPrint Manager server can also contain auxiliary sheets, media, resource-context, and transform objects. You can use auxiliary sheets to separate jobs and to print job identification information. Resource-context objects point to the directory locations of Advanced Function Presentation (AFP) resources, such as fonts and overlays, that some jobs require.

Basic print flow

You can submit print jobs to the InfoPrint Manager server in a variety of ways. Various print submission methods are described in Planning to print with host systems, p. 55 and Planning to share printers, p. 61. No matter which method you use, your jobs will travel similar paths once they get to the server.

In the most common configuration, you submit jobs to an InfoPrint Logical Destination (LD). The LD forwards the job to a print queue, and the print queue forwards the job to an InfoPrint Actual Destination (AD). The AD then sends the job to the printer. See **Job B** in Figure 1. InfoPrint Manager print flow, p. 13 for an illustration. This configuration is especially useful if you have multiple printers and want to balance the workload between them.

Another common configuration is to submit jobs directly to the AD. The AD then forwards the job to the LD that is associated with it. The LD sends the job to a print queue, and the print queue sends the job back to the AD where it started. Then, the AD sends the job to the printer. See **Job A** in for an illustration. This configuration is particularly useful when you need to make sure jobs are sent to a specific printer.

InfoPrint Manager print flow.

Job B is submitted directly to a logical destination, while Job A is submitted to an actual destination
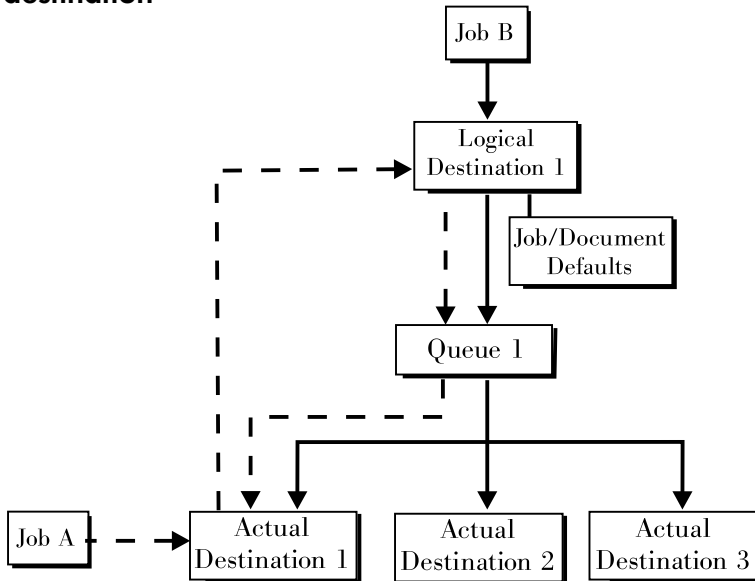
The following sections provide more information about the different kinds of InfoPrint objects and what happens to your print job at each step of the process.

Logical destinations

Logical destinations are objects in your InfoPrint Manager system that you can submit jobs to. In the simple print model shown in , the InfoPrint Manager environment has one default logical destination. You might want to add more logical destinations to support specific types of jobs and specific groups of job submitters. When you create an additional logical destination, you specify a name for the logical destination and associate it with a specific queue. The logical destination and the queue must reside in the same InfoPrint Manager server.

You can specify default job and document attributes for a logical destination, so that all jobs submitted to that logical destination are automatically assigned certain default values. This saves time for the job submitter, and helps make sure that jobs submitted will not fail because of missing resources. If necessary, the submitter can override the default values by explicitly setting the attributes at submission time.

Printer pooling (or clustering) is a powerful feature of InfoPrint Manager. Pooling allows jobs to be submitted to a single logical destination and then routed to appropriate physical devices. This feature enables you to distribute your work load evenly among available printing devices and to optimize printer utilization. It prevents bottlenecks where a large number of jobs are queued for a few printers

1

while other equally capable printers sit idle. In short, printer pooling lets you see your output faster, and logical destinations make printer pooling possible.

Queues

A queue receives jobs from one or more logical destinations and routes jobs to one or more actual destinations. The queue holds a job until an actual destination capable of processing the job becomes available. In the simple print model shown in Basic print flow, p. 12, the InfoPrint Manager environment has one default queue. The queue and the actual destination that it sends jobs to do not have to be in the same server. The actual destination can be in an InfoPrint Manager server on a different AIX, Linux, or Windows system.

Actual destinations

An actual destination represents an output device, such as a printer, or electronic mailing system. In general, you create one actual destination for each physical output device that you use with InfoPrint Manager. It is possible to create more than one actual destination for a device, but that configuration is not common. You configure the actual destination to mirror the features and capabilities of the output device, such as the output resolution of a printer. You also configure the actual destination to control the order in which it processes jobs, for example, by job size or by submission time.

If you do not specify values for all of the attributes when you create an actual destination, InfoPrint Manager provides default values for many of them or obtains those values by using Simple Network Management Protocol (SNMP) requests. You can make modifications, as required, at a later time.

Host receivers

A host receiver provides the point of connection between InfoPrint Manager and a host system. The host system connects with the host receiver and downloads print jobs.

The MVS Download Receiver receives print jobs from MVS systems and submits them to InfoPrint Manager.

Note

Within InfoPrint Manager, the term Download for z/OS refers to both the Download for z/OS feature of PSF for z/OS or the AFP Download Plus for z/OS feature of PSF for z/OS.

See Planning to print with host systems, p. 55 for additional information about host printing.

Documents and jobs

A job is a unit of work you send to InfoPrint Manager for processing. A job can consist of a single file or many files. (To submit multiple files in a single job you must use the **pdpr** command, the InfoPrint Submit

Express). In InfoPrint Manager terminology, each file in the job and its accompanying attributes is called a document. (Both jobs and documents include attributes that define their respective requirements.)

Job validation is the process of ensuring that there is an actual destination capable of processing the requirements of the job. The values of job and document attributes determine the requirements (such as duplex printing or card-stock media) that the actual destination printing the job must support.

A job can include a complete description of its requirements, or the job submission process can be streamlined through the use of defaults. See Logical destinations, p. 13 for details.

Auxiliary sheets

An auxiliary sheet is a sheet of paper that can print at any or all of the these points during a job:

- At the beginning
- At the end
- Between sections

The auxiliary sheet can have information printed on it, or it can be blank. InfoPrint Manager provides five default types of auxiliary sheets, but you can customize your own sheets if necessary. You can also apply a *user-exit program* to control the information printed on an auxiliary sheet.

Media

A medium represents the type of media, that is, paper, envelopes, transparencies, or multi-part forms, that an actual destination prints on. You can configure a medium to describe its dimensions, color, purpose, or any other useful information.

InfoPrint Manager uses the names of media as values for actual destination attributes, such as **media-supported**. Actual destination attributes that reference media can use any name as long as the name is in syntax limits.

Resource contexts

When properly configured, InfoPrint Manager automatically locates the AFP resources (fonts, overlays, form definitions, page definitions, and page segments) that print jobs require. You can store the resources in a centrally available location and then use InfoPrint Manager resource contexts to identify the location. After you have configured the resource contexts, InfoPrint Manager automatically locates the AFP resources required by a job and then uses them for processing.

Transforms

Transforms are InfoPrint objects (like queues and destinations) that you create and configure in InfoPrint Manager. Transforms receive data in a particular format or formats, process the data in some way, and

output the changed data. When you create a transform, you have complete control over what data format or formats it operates on and what type of processing it does. The processing that the transform performs can be anything from simply copying the data to a different place on disk, to filtering the data stream that the transform receives (for example, to remove a particular PostScript order), to transforming the data to a completely different format (for example, converting PCL to AFP).

In addition, you can specify whether you want the file that the transform produces to be printed. If the transform does not submit the file to be printed (for example, if the transform completes its processing and saves the file to a different location), it is called a *terminating transform*.

Sizing your InfoPrint Manager environment

The number of InfoPrint Manager servers you need depends on many factors. In this section, we provide only an overview of the most important performance issues that can influence your server purchase plans. To begin, the features and configurations of each InfoPrint Manager server system are extremely important. Important server factors that affect printing system performance include these:

- Processor speed
- Number of processors
- Available RAM
- Available hard disk space
- Hard disk speed
- Number of hard disk drives
- Balance of InfoPrint Manager filesystems across available disk drives
- Tuning specifications for hard disk drivers
- Paging space allocations (drive locations and size)
- Number of data paths (single or dual)

The output devices that InfoPrint Manager drives are also important:

- Speed and resolution of printers or other output devices
- Number of concurrent processes for each actual destination
- Number of output devices per actual destination

Finally, how you submit print jobs to each InfoPrint Manager server is important:

- Number of client systems submitting jobs
- Frequency of job submission from client systems
- Speed of network data transfer
- Size (density) of jobs to be printed
- Complexity of jobs to be printed
- Number and types of input data streams
- Overall network traffic

Sizing your InfoPrint Manager environment is a complex task. It might be impossible to determine in advance precisely how many AIX systems, Linux systems, and Windows systems will adequately serve your printing needs.

⬇ Note

You can run multiple InfoPrint Manager servers on one AIX system or Linux system, but you can run only one InfoPrint Manager server on a Windows system.

Your Ricoh sales representative can help you determine if you have enough physical printing devices to address the printing needs of your enterprise. Essentially, this is a question of how many pages of output must be produced in how much time. Your estimate of printed output, combined with the rated speeds of your print devices, should give you the information you require to guide printer purchases.

Determining how many servers you need to drive your printing devices, however, requires experimentation and patience. Consult with your Ricoh sales representative to agree on a reasonable number to start with.

Finally, it is important to monitor the performance of your printing environment regularly to see how the system reacts to actual usage and the changing needs of your business. InfoPrint Manager provides useful tools to make such monitoring easy. You can use standard accounting and audit logs to collect statistical data on jobs processed by any printing device in your environment. You can even customize these logging activities to suit the needs of your business. These logs provide invaluable information on workload balancing. You can also use these logs to determine billing procedures or simply to determine how resources are being used at your installation.

⬇ Note

The InfoPrint Manager server provides standard accounting logs, and you can also get customized accounting and audit logs with printers that use the PSF DSS.

Understanding server configuration options

Because InfoPrint Manager for Linux provides print management for many different environments, it provides two different types of installation on the InfoPrint server: *standard* and *basic* installations. Once you have decided to use InfoPrint Manager, the next decision you must make is whether to use the standard server environment or the basic server option.

The following sections describe how each server runs and should give you an idea of which installation you need.

⬇ Note

If you read over this following information and are unsure about which server configuration is best for you, consult with your Ricoh representative to make sure that you create the environment that meets your needs.

Standard server environment

When you install the InfoPrint Manager server, a standard printing environment is created. This environment is generally appropriate for data center printing or distributed printing of many different types of data (including ASCII, line data, ditroff, GIF, JPEG, PCL, PDF, PostScript, XML, and TIFF data). Print jobs in the standard environment often consist of billing statements, payroll statements, and

1

application forms. Users submit these jobs from a command line, a workstation application (such as a word processor), or an InfoPrint client (such as InfoPrint Select).

In a standard printing environment, InfoPrint Manager assigns jobs to printers through late binding. Late binding is much like going to a crowded restaurant and being put on a waiting list for the next available table: you are not "bound" to a particular table until one becomes available. You might have special requirements, such as a non-smoking table with six places (much like a print job that requires document finishing capabilities or a particular paper size), but the hostess (much like the scheduler on the InfoPrint server) handles these qualifications for you.

Basic server option

The basic printing environment is generally appropriate for commercial print shops printing large runs of image data (usually in PostScript or TIFF format). Users submit these jobs from a client (Windows or Mac OS X) personal computer using InfoPrint Submit Express.

In a basic printing environment, InfoPrint Manager assigns jobs to printers through early binding. Early binding is much like standing in a checkout line at a supermarket. Once you pick the line, you "bind" yourself to it, no matter what happens. Whether the cashier has a problem with the cash register (much like a paper jam occurring in the physical printer) or a customer in front of you requires a few price checks (much like adding new forms to the server), the only way to change your position is to physically move to another line (much like manually moving a print job from one print queue to another).

🡇 Note

To use the basic view of the GUI instead of the standard view, see "Using the basic view of the GUI" in the *RICOH Infoprint Manager for Linux: Getting Started.*

InfoPrint Manager interfaces

The main InfoPrint Manager interfaces are the InfoPrint Manager Administration GUI, InfoPrint Manager Operations GUI, the InfoPrint Manager Web Administration Interface, and InfoPrint Manager Web Management Interface, collectively known as the InfoPrint Manager GUIs. To administer your InfoPrint Manager environment, you primarily use the InfoPrint Manager Administration GUI or the Web Administration Interface. The InfoPrint Manager Web Administration Interface includes all functions (administration and operation) available in the InfoPrint Manager Administration GUI. You can use this Java-based interface to create, delete, or modify most InfoPrint Manager objects. Printer creation wizards make it easy for you to create InfoPrint Manager actual destinations.

To oversee the day-to-day operation of your InfoPrint Manager environment, use the InfoPrint Manager Operations GUI. This interface includes a subset of the functions available in the InfoPrint Manager Administration GUI. In the InfoPrint Manager Operations GUI, you can release jobs for printing and disable actual destinations. You cannot, however, modify the fundamental configuration of the InfoPrint Manager environment; you cannot delete or add logical destinations, for example.

The InfoPrint Manager Web Administration Interface supports the same security features as the InfoPrint Administration and Operations GUIs and any existing FST security settings apply to the Web Administration Interface as well. However, the read operations taken to display the objects in the InfoPrint Manager Web Administration Interface web application are performed by a special user wsClient. This user must be a member of the WebServices group. The WebServices group needs read access for the List/Query (pdls) operations on each InfoPrint Manager system the InfoPrint Manager Web Administration Interface connects to. Any other operations are performed with the specific

user@hostname user connecting to the web application. For more information about the FST security, see *RICOH InfoPrint Manager for Linux: Procedures*.

The InfoPrint Manager Web Management Interface lets you perform some of the administrative tasks on the server. You can use the InfoPrint Manager Web Management Interface to configure and administer your print environment. InfoPrint Manager Web Management Interface supports various tasks, such as enabling the LDAP security, configuring federated authentication, or managing the Web Server, the Web Administration Interface, or the Pull Print environment.

All the InfoPrint Manager GUIs are installed on the Linux system that the InfoPrint Manager server is installed on. In addition, they can all be installed on remote Linux or Windows systems. As a result, administrators and operators can manage the InfoPrint Manager system without going to the Linux system that InfoPrint Manager is installed on.

⬇ Note

Mixing different levels of the interfaces, servers, or both might cause unexpected results with the Printer Details. Keep all of the clients and servers in the same namespace at the same level.

The InfoPrint Manager Web Administration Interface is installed on the Linux system that the InfoPrint Manager server is installed on. You can access the InfoPrint Manager Web Administration Interface from other machines through a web browser.

The third interface that you can use with InfoPrint Manager is called the InfoPrint Manager Management Interface. You use the InfoPrint Manager Management Interface to:

- Start and stop InfoPrint Manager servers
- Perform troubleshooting procedures
- Perform miscellaneous configuration tasks
- Manage security functions (FST and LDAP)
- Manage federated authentication
- Use the InfoPrint Manager utilities

Comparing InfoPrint Manager on different platforms

If you are trying to choose a platform (AIX, Linux, or Windows) on which to run your InfoPrint Manager server, be advised that while InfoPrint Manager for AIX, InfoPrint Manager for Linux, and InfoPrint Manager for Windows support many of the same features and functions, each product has unique features not available in the other.

Understanding common features

These InfoPrint Manager features are available on platforms:

Features	AIX	Linux	Windows
Interoperability with other InfoPrint Manager servers	Supported	Supported	Supported

Impositioning, that is, arranging pages so they will appear in proper sequence after press sheets are folded and bound	Supported	Supported	Supported
BSD and PSF device support systems	Supported	Supported	Supported
FST and LDAP security methods	Supported	Supported	Supported
• InfoPrint Submit Express client support	Supported	Supported	Supported
AFP	Supported	Supported	Supported
ASCII	Supported	Supported	Supported
DBCS ASCII	Supported	Supported	Supported
GIF	Supported	Supported	Supported
JPEG	Supported	Supported	Supported
Line data (EBCDIC)	Supported	Supported	Supported
PCL (PCL 6 and earlier)	Supported	Supported	Supported
PDF Version 1.7 and earlier	Supported	Supported	Supported
PostScript Level 3 and earlier	Supported	Supported	Supported
TIFF	Supported	Supported	Supported
SAP ABAP and OTF	Supported	Supported	Supported
XML	Supported	Supported	Supported
DITROFF	Supported	Supported	Supported
Adobe PostScript transform	Supported	Supported	Supported
PCL transform	Supported	Supported	Supported
XML transform	Supported	Supported	Supported
Full event notification	Supported	Supported	Supported
InfoPrint Manager Notifications to enable client systems to receive messages from InfoPrint Manager server systems	Supported	Supported	Supported

The InfoPrint Manager Administration GUI for performing most administrative tasks	Supported	Supported	Supported
The InfoPrint Manager Operations GUI for performing operator tasks	Supported	Supported	Supported
InfoPrint Manager Web Interface	Supported	Supported	Supported
InfoPrint Select client for job submission	Supported	Supported	Supported
A powerful command-line interface to all InfoPrint Manager features	Supported	Supported	Supported
Simple Network Management Protocol (SNMP) support	Supported	Supported	Supported
MVS Download Receiver for job submission from z/OS, OS/390, and MVS host systems	Supported	Supported	Supported
InfoPrint Page Printer Formatting Aid (PPFA)	Supported	Supported ⬇ Note The InfoPrint Manager Page Printer Formatting Aid feature runs only on Windows operating system. However, the resulted form definitions and page definitions can be used on InfoPrint Manager for Linux as well. All resources created with PPFA on Windows need to be copied on Linux.	Supported
The **pdaccount** command, which you can use to generate comma-delimited reports of print server data to be fed into spreadsheets	Supported	Supported	Supported

1

Configurable transform support (through transform objects)	Supported	Supported	Supported
InfoPrint SAP Print Feature, which includes the SAP Output Management Support (OMS) and the **sap2afp** transform.	Supported	Supported	Supported
The IPP Gateway to allow you to print from an IPP client system to printers that are not IPP-enabled	Supported	Supported	Supported
E-Mail DSS	Supported	Supported	Supported
Support for printers that use standard AIX printer backend programs (**piobe** and some versions of **rembak**)	Supported	Not available	Not available
PSF Upload TCP/IP	Supported	Supported	Not available
SMIT interface for performing tasks not Supported by the InfoPrint Manager Administration GUI, including PPO and security administration	Supported	Not available	Not available
Support for printers that use InfoPrint Manager **pioinfo** CUPS backend, InfoPrint Manager **piorpdm** CUPS backend for Ricoh printers and other CUPS backends (**socket**, **ipp**, and **lpd**).	Not available	Supported	Not available
InfoPrint Manager Management interface for performing tasks not Supported by the InfoPrint Manager Administration GUI, including security administration	Not available	Supported	Not available
The InfoPrint Manager Management Console interface for performing administrative tasks not Supported by the InfoPrint	Not available	Not available	Supported

Manager Administration GUI. The InfoPrint Manager Management Console also features graphical administration of the security Groups and Access Control List (ACL)			
Interaction between InfoPrint Manager and the Windows print spool to expand InfoPrint capabilities	Not available	Not available	Supported
Distributed Print Facility (DPF) for host printing	Not available	Not available	Supported
Support for the Internet Print Protocol (IPP) to allow InfoPrint Manager to access a printer using a Uniform Resource Indicator (URI) string	Not available	Not available	Supported
The Windows gateway printer to allow job submission to without using an InfoPrint Manager client (The destinations appear as shared printers on the Windows network)	Not available	Not available	Supported
Customization of MVS Download Receiver without programming	Not available	Not available	Supported

Understanding InfoPrint Manager for AIX features

These features are currently available only in InfoPrint Manager for AIX:

- Support for printers that use standard AIX printer back-end programs (**piobe** and some versions of **rembak**)

- PSF Upload TCP/IP

- SMIT interface for performing tasks not supported by the InfoPrint Manager Administration GUI, including PPO and security administration

If you require the features currently only available on InfoPrint Manager for AIX, but prefer the Windows platform, consider a mixed environment of AIX systems and Windows systems. In many cases, a mixed environment provides you with immediate access to all InfoPrint Manager features.

Understanding InfoPrint Manager for Linux features

These features are currently only available in InfoPrint Manager for Linux:

- Support for printers that use CUPS printer backend programs (InfoPrint Manager **pioinfo** backend , InfoPrint Manager **piorpdm** backend for Ricoh printers, **socket**, **ipp**, **lpd**, and other CUPS backends).

- PSF Upload TCP/IP

- InfoPrint Manager Management interface for performing tasks not supported by the InfoPrint Manager Administration GUI, including security administration

If you require the features currently only available on InfoPrint Manager for Linux, but prefer the AIX or Windows platform, consider a mixed environment of AIX systems, Linux systems, and Windows systems. In many cases, a mixed environment provides you with immediate access to all InfoPrint Manager features.

Understanding InfoPrint Manager for Windows features

This release of InfoPrint Manager for Windows includes these features that are unique to the Windows platform:

- The InfoPrint Manager Management Console interface for performing administrative tasks not supported by the InfoPrint Manager Administration GUI. The InfoPrint Manager Management Console also features graphical administration of the security Groups and Access Control List (ACL).

- Interaction between InfoPrint Manager and the Windows print spool to expand InfoPrint capabilities

- Distributed Print Facility (DPF) for host printing

- Support for the Internet Print Protocol (IPP) to allow InfoPrint Manager to access a printer using a Uniform Resource Indicator (URI) string

- The Windows gateway printer to allow job submission to without using an InfoPrint Manager client. (The destinations appear as shared printers on the Windows network.)

- Customization of MVS Download without programming

Supported printers

Infoprint Manager for Linux supports a wide range of printers from InfoPrint and other vendors.

PCL printers

InfoPrint Manager for Linux supports all compatible printers capable of interpreting the Hewlett-Packard Printer Control Languages (PCL4, PCL5, PCL5c, PCL5e, and PCL6). InfoPrint Manager is capable of converting all kinds of datastreams to PCL4, PCL5, PCL5c, PCL6, or passing through any version of PCL to your PCL printer.

PostScript printers

InfoPrint Manager for Linux supports printing to PostScript printers by passing your PostScript directly to your PostScript printer.

Note

The CUPS DSS supports sending PDF files to printers. However, this feature is not turned on by default. If your printer supports PDF input, you have to add PDF to the actual destination **document-formats-supported** attribute.

PPDS printers

In addition, InfoPrint Manager is capable of driving any printer that accepts the Personal Printer Data Stream (PPDS). InfoPrint Manager is capable of converting all kinds of datastreams, except formatted ASCII, to PPDS, or passing through any version of PPDS to your PPDS printer.

Note

InfoPrint Manager only supports non-impact PPDS printers as PSF Other-driver and PSF Command devices.

IPDS printers

InfoPrint Manager for Linux supports IPDS printers including but not limited to:

- InfoPrint 75
- InfoPrint 100
- InfoPrint Color 130 Plus
- InfoPrint EMP156
- InfoPrint Pro C900AFP
- InfoPrint Pro C901
- InfoPrint Pro C901S
- InfoPrint Pro 907

1

- InfoPrint Pro 907EX
- InfoPrint Pro 1107
- InfoPrint Pro 1107EX
- InfoPrint Pro 1357
- InfoPrint Pro 1357EX
- InfoPrint 1145 (no MFP support)
- InfoPrint 1422
- InfoPrint 1532
- InfoPrint 1540 MFP
- InfoPrint 1552
- InfoPrint 1560 MFP
- InfoPrint Color 1567
- InfoPrint 1570 MFP
- InfoPrint 1572
- InfoPrint 1572 MFP
- InfoPrint 1580 MFP
- InfoPrint 1585
- InfoPrint Color 1654
- InfoPrint Color 1664
- InfoPrint Color 1754 Express
- InfoPrint Color 1759 MFP
- InfoPrint Color 1764
- InfoPrint Color 1764 MFP
- InfoPrint Color 1767
- InfoPrint Color 1769 MFP
- InfoPrint 1823
- InfoPrint 1832
- InfoPrint 1834
- InfoPrint 1846 MFP
- InfoPrint 1850 MFP
- InfoPrint 1852
- InfoPrint 1854
- InfoPrint 1856 MFP
- InfoPrint 1860 MFP
- InfoPrint 1866 MFP
- InfoPrint 1870 MFP

- InfoPrint 1872

- InfoPrint 1880 MFP

- InfoPrint 1892

- InfoPrint 1930 MFP

- InfoPrint 1940 MFP

- InfoPrint 1948 MFP

- InfoPrint 1968 MFP

- InfoPrint 1985 MFP

- InfoPrint 1988 MFP

- InfoPrint Color 2047

- InfoPrint Color 2057 MFP

- InfoPrint 2060ES

- InfoPrint Color 2065

- InfoPrint 2075ES

- InfoPrint Color 2075 MFP

- InfoPrint 2085

- InfoPrint 2090ES

- InfoPrint 2105

- InfoPrint 2105ES

- InfoPrint 2190

- InfoPrint 2210

- InfoPrint 2235

- InfoPrint 3000

- 3160 Advanced Function Printer with Feature 4120, 4161, 4162, or 4163

- 3900 Advanced Function Printer Models 001, D01, D02, 0W1, 0W3, DW1, and DW2 (including support for the MICR Post-Processing Interface Feature, the Set Media Modifications command to drive post-processing devices, such as Beste Bunch spot color printers, and the Interface Feature 4720)

- 3930 Page Printer Models 03D and 03S

- 3935 Advanced Function Printer with Feature 4020, 4121, or 4161

- InfoPrint 4000

- InfoPrint 4000 Model ID5/ID6

- InfoPrint 4000 Model IR3/IR4

- InfoPrint 4100 MD1/MD2

- InfoPrint 4100 Model HD1/HD2

- InfoPrint 4100 Model HD3/HD4

- InfoPrint 4100 Model HD5/HD6

- InfoPrint 4100 Model HS1
- InfoPrint 4100 Model HS2
- InfoPrint 4100 Model HS3
- InfoPrint 4100 Model PD1/PD2
- InfoPrint 4100 Model PS1
- InfoPrint 4100 Model TS1
- InfoPrint 4100 Model TS2
- InfoPrint 4100 Model TS3
- InfoPrint 4100 Model TD1/TD2
- InfoPrint 4100 Model TD3/TD4
- InfoPrint 4100 Model TD5/TD6
- InfoPrint 4100 MS1
- 4312 Network Printer 12. OS Code Release Level 2.23 or later is required. For IPDS printing, the IPDS feature with IPDS Code Level 1.25 or later is required.
- 4317 Network Printer 17. OS Code Release Level 2.23 or later is required. For IPDS printing, the IPDS feature with IPDS Code Level 1.25 or later is required.
- 4324 Network Printer 24. OS Code Release Level 2.35 or later is required. For IPDS printing, the IPDS feature with IPDS Code Level 1.25 or later is required.
- 4400 Thermal Printer
- InfoPrint 5000 Model AD1/AD2
- InfoPrint 5000 Model AD3/AD4
- InfoPrint 5000 Model AD3/AD4-XR3
- InfoPrint 5000 Model AS1
- InfoPrint 5000 Model AS3
- InfoPrint 5000 Model KM3
- InfoPrint 5000 Model KM3/MD4
- InfoPrint 5000 Model MP MC1/MC2
- InfoPrint 5000 Model MP MD1/MD2
- InfoPrint 5000 Model MP MD3/MD4
- InfoPrint 6500
- InfoPrint 6700
- InfoPrint SP 8200 DN1
- RICOH Pro 8100S
- RICOH Pro 8110S
- RICOH Pro 8120S
- RICOH Pro C5100S
- RICOH Pro C5110S

- RICOH Pro C5200S
- RICOH Pro C5210S
- RICOH Pro C5300S
- RICOH Pro C5310S
- RICOH Pro C7100
- RICOH Pro C7100X
- RICOH Pro C7110
- RICOH Pro C7110X
- RICOH Pro C7100S
- RICOH Pro C7100SX
- RICOH Pro C7110S
- RICOH Pro C7110SX
- RICOH Pro C7200
- RICOH Pro C7200S
- RICOH Pro C7200SL
- RICOH Pro C7200SX
- RICOH Pro C7200X
- RICOH Pro C7210
- RICOH Pro C7210S
- RICOH Pro C7210SX
- RICOH Pro C7210X
- RICOH Pro C7500
- RICOH Pro C9200
- RICOH Pro C9210
- RICOH Pro C9500
- RICOH Pro F2120
- RICOH Pro F2120Y
- RICOH Pro F2130
- RICOH Pro F2130Y
- RICOH Pro VC40000
- RICOH Pro VC60000
- RICOH Pro VC70000
- RICOH Pro VC80000
- RICOH Pro 8200S
- RICOH Pro 8210S
- RICOH Pro 8220S

- RICOH Pro 8210

- RICOH Pro 8220

- RICOH Pro 8300S

- RICOH Pro 8310

- RICOH Pro 8310S

- RICOH Pro 8320

- RICOH Pro 8320S

DFE printers

InfoPrint Manager for Linux supports these DFE printers:

- Fiery Color Controller N-50A for RICOH Pro C7500

- Fiery Color Controller N-70A for RICOH Pro C7510

- Fiery Color Controller N-50 for RICOH Pro C9500

- Fiery Color Controller N-70 for RICOH Pro C9510

- Fiery Color Controller N-500 for RICOH Pro Z75

For technical support related to the Fiery Color Controller, contact your Fiery supplier. For additional help on Fiery software, go to the Fiery website.

Supported data streams

InfoPrint Manager for Linux is capable of converting these data streams to IPDS, PCL4, PCL5, PCL5c, PCL6, or PPDS:

- Advanced Function Presentation (AFP)

- ASCII

- DBCS ASCII

- CompuServe Graphics Interchange format (GIF)

- Device-independent troff (ditroff)

- EBCDIC

- Joint Photographic Experts Group image (JPEG)

- PCL (PCL6 and earlier)

- PDF (1.7 and earlier)

- PostScript (level 3 and earlier)

- SAP ABAP and OTF (with purchase of the InfoPrint Manager: SAP Print Feature)

- Tagged Image File Format (TIFF)

- XML

In addition, InfoPrint Manager will pass through any data stream including PDF, PostScript, PPDS, PCL5e, PCL6, and PPDS.

⬇Note

If you send PostScript data generated by an InfoPrint 17xx PS printer driver to an IPDS printer via InfoPrint Manager, specific controls inserted in the data stream are lost. To avoid this, you can use the generic PostScript driver.

To provide optimal system performance, the InfoPrint Manager server can transform input data and drive printers concurrently. InfoPrint Manager can support multiple document formats on the same printer.

For AIX, CUPS, and PSF-Other DSS actual destinations, you must have the correct driver for the datastream format you want to output to the printer device.

2. Verifying prerequisites

- Understanding hardware requirements
- Understanding Linux software requirements

Before installing InfoPrint Manager for Linux, you should verify that you have satisfied the hardware and software requirements in this chapter.

Understanding hardware requirements

This section defines the minimum hardware requirements for the InfoPrint Manager solution.

🔽 Note

- The installed system creates the `/usr/lpp` directory, with a size of 2 GB. If you prefer to provide dedicated disk space for this directory, do so before you start the installation.
- For an appropriate print speed, we recommend Gigabit network or fiber optic.

Linux hardware requirements for print load light

Minimum configuration:

- 2 compute cores
- 4 GB of memory
- 10 GB for `/var/pd`
- 5 GB for `/var/psf`
- 10 GB for `/var/psf/segments`

Linux hardware requirements for print load heavy

Minimum configuration:

- 8 compute cores
- 32 GB of memory
- 60 GB for `/var/pd`
- 30 GB for `/var/psf`
- 30 GB for `/var/psf/segments`

Linux hardware requirements for print load high performance

Minimum configuration:

- 16 compute cores
- 32 GB of memory

- 60 GB for `/var/pd` (SSD)
- 30 GB for `/var/psf` (SSD)
- 60 GB for `/var/psf/segments` (SSD)

⬇Note

To install this product, your system must have a greater than standard VGA driver.

Client hardware requirements

We recommend these minimum Windows configuration for all InfoPrint clients:

- 1.0 GHz Pentium 4 processor
- 2 GB RAM or more
- 500 MB available hard disk space or more
- LAN connection (Ethernet)
- Access to at least one InfoPrint Manager server (either on a local system or remotely over a LAN)

To communicate with other systems across a LAN (including InfoPrint Manager server systems), you must install a suitable Ethernet adapter card and connect the appropriate cabling.

Printer attachment requirements

TCP/IP-attached printer requirements

Printers must be TCP/IP-attached to the Linux server using their Ethernet attachments.

Understanding Linux software requirements

To ensure correct operation, InfoPrint Manager requires that certain components of the Linux operating system be installed on your system. It is up to you to install the base level of these components from your Linux operating system before starting the installation process (see *RICOH InfoPrint Manager for Linux: Getting Started* for more information about using the InfoPrint Manager Installer).

The InfoPrint Manager Installer installs all the required dependencies (rpm packages) automatically. Make sure that **dnf** (Red Hat Enterprise Linux) or **zypper** (SUSE Linux Enterprise Server) can access the operating system repository before starting the InfoPrint Manager installation.

InfoPrint Manager for Linux is a 64-bit application that an authorized user can run only on 64-bit (x86_64) operating systems. For more information, see the "Verifying Linux rpm packages" section.

InfoPrint Manager for Linux needs to be installed using the root user, but during the installation process you have the possibility to configure the product to run as a non-root authorized user. You can still use root if you want to. If you are running InfoPrint Manager with a user other than root, make sure that all custom paths needed by the product have read and write permissions for that specific user. Also, the user you are running InfoPrint Manager with, might need specific access to resources. For more

information, see the "Determining ulimit segment settings" section within the *RICOH InfoPrint Manager for AIX and Linux: Configuring and Tuning Guide*.

The default user is ipm1, which is created by the installer automatically. Custom users can be used when the primary group for that user is sys group.

◉ Note

InfoPrint Manager installs the version of Java that it requires, and that Java can be used only by InfoPrint Manager. Any Java update is done by the InfoPrint Manager Installer.

2

2

⭐ **Important**

1. If the user validation fails, user does not exist or primary group is not `sys`, the installation does not continue. The user can be either a local or a remote user. For remote user, the system administration must assure that the user has `sys` group as primary group. The shell for the custom user must be bash (`/bin/bash` or `/usr/bin/bash`).

2. InfoPrint Manager for Linux uses the Common Unix Printing System (CUPS), which needs to be installed and running on your Linux server. Most of the Linux printer drivers (PPDs) might require to be configured with the "foomatic-rip" backend filter script of Foomatic. Check your PPD prolog section for Foomatic requirements.

3. The default shell for InfoPrint Manager for Linux is bash. Do not use Kornshell 93 with InfoPrint Manager for Linux.

4. InfoPrint Manager for Linux supports only LVM (Logical Volume Management) disk partitioning, which provides a number of advantages over the standard partitioning scheme.

5. If the user already exists, no other changes should be made to the group.

6. If the user does not exist, and there is no group specified by the person installing (i.e. ipm1), check if the `sys` group exists and create it if it does not exist. When you create the `sys` group, specify -r (system group).

7. If the user does not exist, and the group is specified (i.e. ipm1:ipm1group), check if the `ipm1group` exists and create it if it does not exist without specifying system group. Then, create the user using the `ipm1group` group.

8. OpenJDK, used by InfoPrint Manager for Linux as a fully open Java implementation, does not use GTK2 as a default look and feel. For this reason, there are some visible differences between OpenJDK using GTK3 and other Java providers.

   InfoPrint Manager for Linux displays the Java desktop applications (InfoPrint Manager Administration and Operation GUI, InfoPrint Manager Management Interface, License Key Management Application, and Notification Client) using Metal look and feel. If the Java applications do not look readable, you might consider changing the Metal Java look and feel.

   To do this, set the environment variable JAVA_TOOL_OPTIONS to the desired Java look and feel and start the Java application again.

   Example: `JAVA_TOOL_OPTIONS='-Dswing.defaultlaf=com.sun.java.swing.plaf.gtk.GTKLookAndFeel'`

   🔽 **Note**

   Changing the Java look and feel using the JAVA_TOOL_OPTIONS environment variable might result in unexpected behavior of the Java applications.

9. To start or stop any InfoPrint Manager service using command line or InfoPrint Manager Management Interface under Gnome, enable lingering for the root user and the user running InfoPrint Manager.

   As root user, run the following commands to enable lingering:

   - **loginctl enable-linger root**
   - **loginctl enable-linger $IPM_USER**

Server software prerequisites

InfoPrint Manager for Linux requires the 64-bit Linux (x86_64) operating system to be installed at one of these distributions:

- AlmaLinux 8 x86_64 (version 8.6 or later)
- AlmaLinux 9 x86_64
- Red Hat Enterprise Linux 8 x86_64
- Red Hat Enterprise Linux 9 x86_64
- SUSE Linux Enterprise Server 15 x86_64

2

⭐**Important**

- If `tuned` daemon is running on RHEL, it must not be allowed to modify the kernel parameter `kernel.sched_min_granularity_ns`.

- If you run InfoPrint Manager as root, you must set: `ROOT_USES_LANG` variable from **/etc/sysconfig/language** file is set to **yes**.

- The authorized user must be able to run the `ping` command. The package that provides this command is **iputils**. If the `ping` command is restricted to a certain group for security reasons, the authorized user must be a member of that certain group.

- If you run InfoPrint Manager on RHEL or SLES 15, before you run the installation, if the SystemGroup directive in the `/etc/cups/cups-files.conf` CUPS file does not contain the group of the InfoPrint Manager user, you must add it.

- If the user does not exist and there is no group specified by the person installing (that is, ipm1), check if the `sys` group exists and create it if it does not exist. When you create the `sys` group, specify -r (system group). If the user does not exist and the group is specified (that is, ipm1: ipm1group), check if the `ipm1group` exists and create it if it does not exist without specifying system group. Then, create the user using the `ipm1group` group.

- InfoPrint Manager needs `/var/pd`, `/var/pddir`, `/var/psf`, `/var/psm`, `/tmp`, and `/var/tmp` to be on a partition that permits execution of binaries. If any of those partitions is mounted with `noexec` mount option, it is impossible to install or run InfoPrint Manager.

  For greater flexibility, the InfoPrint Manager Installer does not create the file systems for `/var/pd`, `/var/psf`, and `/var/psf/segments` anymore. If a file system is found in the above locations, it will be used as is. Otherwise, a directory is created for each of the above locations. To create a file system for each of the above locations, use the `allocfs.sh` script from the root directory of your installation media.

  The `allocfs.sh` syntax is:

```
allocfs.sh -c <lv-name> -s <lv-size> -v <vg-name>
```

  where:

  – `vg-name` is the volume group where the logical volumes will reside

  – `lv-name` is one of the following logical volumes names:

Mount point	Logical volume	Minimum size
/var/pd	lvpd	10240 MiB
/var/psf	lvpsf	5120 MiB
/var/psf/segmnets	lvpsfs	10240 MiB
/ipdata	lvipd	5120 MiB

  – `lv-size` is the size allocated to the logical volume. It cannot be less than the minimum size in the previous table.

  The available volume groups can be listed with this command:

```
allocfs.sh -l
```

  and the list of logical volumes for a specific volume group can be listed like this:

```
allocfs.sh -l -v <vg-name>
```

Verifying Linux rpm packages

InfoPrint Manager for Linux requires the Linux operating system to be installed at the supported version. It also requires that GNU Object Model Environment (GNOME) desktop environment is installed on the system. InfoPrint Manager for Linux has specific dependencies on the base-level Red Hat Package Manager (RPMs or rpms) listed below. The required rpms are installed automatically during InfoPrint Manager for Linux installation.

Verifying requirements for all InfoPrint Manager installations

AlmaLinux 8 (version 8.6 or later), **AlmaLinux 9**, **Red Hat Enterprise Linux 8 (version 8.6 or later)**, or **Red Hat Enterprise Linux 9**.

- bzip2
- cups
- cups-libs
- cyrus-sasl-md5
- glibc
- glibc-gconv-extra
- glibc-langpack-de
- glibc-langpack-en
- glibc-langpack-es
- glibc-langpack-fr
- glibc-langpack-it
- glib-langpack-ja
- glibc-locale-source
- libgcc
- libICE
- libSM
- libXau
- libxcb
- libXext
- libXi
- libXmu
- libXrender
- libXt
- libXtst
- lvm2

2

- net-tools
- nfs-utils
- openldap-compat (Red Hat Enterprise Linux 9 or AlmaLinux 9 only)
- perl
- perl-Encode
- polkit
- uuidd
- xfsprogs

SUSE Linux Enterprise Server 15 (SLES-15)

- bzip2
- cups
- cups-libs
- cyrus-sasl-digestmd5
- eject
- glibc
- glibc-locale
- glibc-locale-source
- glibc-i18ndata
- libgcc_s1
- libICE6
- libldap-legacy
- libSM6
- libstdc++6
- libXext6
- libXmu6
- libXrender1
- libXt6
- lvm2
- net-tools-deprecated
- nfs-kernel-server
- perl
- polkit
- uuid-runtime
- xfsprogs

Displaying currently installed Linux rpm packages

You can verify if the prerequisite rpm packages are already installed on the Linux system by using the Linux **rpm** command. For example, you can check the Linux kernel rpm package by entering the following at the command line:

```
rpm -qi cups-libs
```

If the rpm package is installed, the Linux operating system displays the name, version, release, and description of the rpm package. If the rpm package is not installed, the Linux operating system issues a message that the package is not installed. For a missing rpm package, use the Linux **rpm** command or the Add/Remove Software graphical interface utility to install the appropriate files from the Linux operating system distribution.

Locating missing required rpm packages

If any required rpm packages are missing from your system, the InfoPrint Installer identifies them for you. Any rpm packages that are required by InfoPrint Manager for Linux and are not installed can be found on one of the Linux operating system DVD-ROMs. Linux rpm packages prerequisites must be obtained from the operating system distribution.

Internet protocol prerequisites

InfoPrint Manager supports both IPv4 and IPv6 communication protocols. Inbound and outbound connections between InfoPrint Manager server instances, server and clients, or server and output devices are supported.

AFP Download Plus prerequisites

These are the prerequisites for AFP Download Plus:

- For the AFP Download Plus multiple dataset function, you must install AFP Download Plus APAR OA 15317.

- For the compression between AFP Download Plus and InfoPrint Manager, you must install AFP Download Plus APAR OA 16693.

- For the AFP Download Plus for z/OS version 4.1 or 4.2, you must install APAR OA28035 on AFP Download Plus for z/OS. Otherwise, the systems will not work with InfoPrint Manager even if the multiple dataset function is not used.

Client software prerequisites

To run InfoPrint Select on a Windows client system, you must have a 64-bit operating system installed.

These are the supported 64-bit operating systems:

41

2

- Windows 10 Pro
- Windows 10 Enterprise
- Windows 11
- Windows Server 2016 Standard
- Windows Server 2019 Standard
- Windows Server 2022 Standard

To run InfoPrint Select on a Linux client system, make sure that AlmaLinux 8.6 or later, AlmaLinux 9, Red Hat Enterprise Linux 8, Red Hat Enterprise Linux 9, or SUSE Linux Enterprise Server 15 is installed.

↓Note

- If you use Digest as an authentication method for LDAP, you must install these rpm packages:
  - For RHEL, use this rpm package: cyrus-sasl-md5
  - For SUSE, use this rpm package: cyrus-sasl-digestmd5

To run InfoPrint Select on a Mac OS X client system, make sure OS X Version 10.14 or later is installed.

These are the supported operating systems required to run the InfoPrint Manager Command Line Clients:

InfoPrint Manager Windows client	64-bit OS
	Windows 10 Pro
	Windows 10 Enterprise
	Windows 11
	Windows Server 2016 Standard
	Windows Server 2019 Standard
	Windows Server 2022 Standard
InfoPrint Manager AIX client	AIX 7.2 TL3
	AIX 7.3 TL0 SP1
InfoPrint Manager Linux client	AlmaLinux 8 x86_64 (version 8.6 or later)
	AlmaLinux 9 x86_64
	Red Hat Enterprise Linux 8 x86_64
	Red Hat Enterprise Linux 9 x86_64
	SUSE Linux Enterprise Server 15 x86_64
InfoPrint Manager Mac OS X client	Mac OS X 10.14 or later

To run an InfoPrint Manager GUI and InfoPrint Manager Notifications Client on a client system, you must have a 64-bit operating system installed.

These are the supported 64-bit operating systems:

- Windows 10 Pro

- Windows 10 Enterprise

- Windows 11

- Windows Server 2016 Standard

- Windows Server 2019 Standard

- Windows Server 2022 Standard

To run an InfoPrint Manager GUI and InfoPrint Manager Notifications Client on a Linux client system, make sure that AlmaLinux 8.6 or later, AlmaLinux 9, Red Hat Enterprise Linux 8, Red Hat Enterprise Linux 9, or SUSE Linux Enterprise Server 15 is installed.

These are the supported browsers and required plug-ins for the Web Interface client:

- Most recent version of Mozilla Firefox

- Most recent version of Microsoft Edge

The minimum display resolution for the Web Interface client is 1280x760 pixels.

You must enable JavaScript in the web browser. If you use a different or earlier version of a browser, the pages might format differently, and some functions might not work correctly.

InfoPrint Submit Express software prerequisites

Windows System Requirements

To run InfoPrint Submit Express, you must have a 64-bit operating system installed.

These are the supported Windows 64-bit operating systems:

- Windows 10 Pro

- Windows 10 Enterprise

- Windows 11

- Windows Server 2016 Standard

- Windows Server 2019 Standard

- Windows Server 2022 Standard

Mac OS X System Requirements

Submit Express for Mac OS X systems has these requirements:

- Mac OS X Version 10.14 or later

- Oracle JRE Version 8.0 update 60 or later

Supported virtualized system

InfoPrint Manager for Linux is supported on VMWare System ESXi 5.0 and higher.

Customers should select the server size appropriate to their environment using information at the VMWare website: http://www.vmware.com/products/vsphere/buy/editions_comparison.

InfoPrint Manager Administration and Operation GUI, InfoPrint Select, and Command Line Client Windows clients are supported on Citrix Virtual Apps and Desktops. For more information related to Citrix Virtual Apps and Desktops, go to https://www.citrix.com/products/citrix-daas/citrix-virtual-apps-and-desktops.html.

2. High Availability

InfoPrint Manager for Linux supports High Availability configuration on the supported Linux operating systems.

High Availability provides an environment that ensures a fast and reliable recovery of important applications from hardware and software failures. For more information about Linux High Availability, refer to the supported Linux operating system documentation.

For more information about running InfoPrint Manager for Linux in High Availability configuration, see *RICOH InfoPrint Manager: High Availability Guidelines*, G550-20261.

3. Planning for configuration

- Default model
- Desktop destination configuration model
- Pool destination configuration model
- Funnel destination configuration model
- Hourglass destination configuration model
- Recommended distributed configuration model
- Cloud considerations
- Running InfoPrint Manager for Linux in a Docker container

Destination configuration models show the relationships among logical destinations, job- and document-attribute defaults, queues, and actual destinations. Your standard InfoPrint destination configuration, the one created during installation, has a one-to-one relationship between a logical destination and an actual destination, and provides minimal job- and document-attribute default setting. As you customize your InfoPrint environment to support your printing needs, you might want to consider a more complex destination configuration model.

For any of the configuration models, while the logical destination and the queue that it sends jobs to must reside in the same InfoPrint server, the actual destination can be running in a different InfoPrint server running on a different AIX, Linux, or Windows system. However, to submit jobs directly to the actual destination, the actual destination must reside in the same server as the logical destination and queue.

Default model

The default model has a one-to-many relationship between a logical destination and two or more actual destinations. It also lets you submit jobs directly to properly configured actual destinations. (In this way, the default model is similar to Figure 3. Desktop destination configuration model, p. 46, but it requires you to create and manage fewer objects.) To support direct submission to actual destinations, the default model requires the actual destination to be associated with a logical destination. A job submitted to an actual destination is rerouted to the associated logical destination. At the logical destination, the job derives its job and document defaults. The job is then routed through the associated queue and back to the actual destination.

InfoPrint Manager uses this destination configuration model by default. (A single queue and a single logical destination are created automatically when you install InfoPrint Manager.) You must configure the actual destinations to enable direct submission.

Default destination configuration model

Job A (submitted to an actual destination) prints on that actual destination. Job B (submitted to the logical destination) prints on the first actual destination that can support it.

3
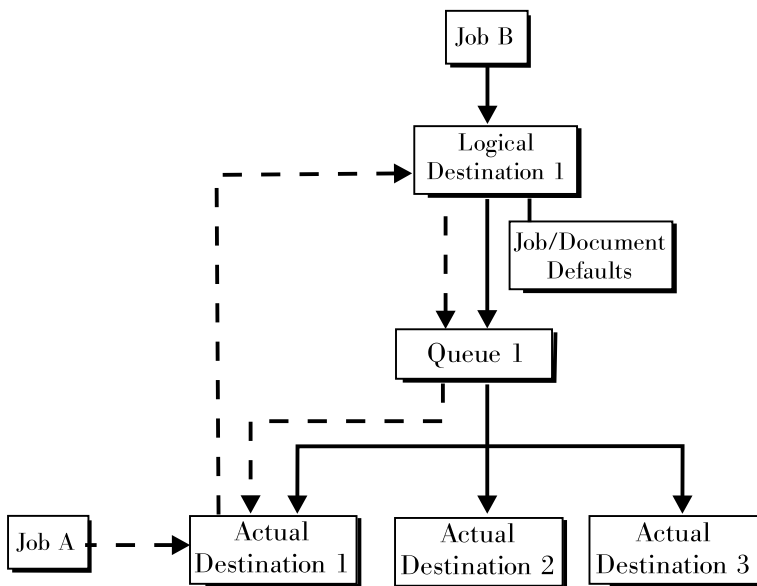
This is a very flexible model that lets you enjoy the benefits of printer pooling, while retaining complete control over where certain jobs print.

Desktop destination configuration model

The desktop destination configuration model, as shown in Figure 3. Desktop destination configuration model, p. 46, has a one-to-one relationship between a logical destination and an actual destination. The desktop model represents the way you typically manage and use a workstation printer. This model should be familiar to you if you have an existing printing system that you are adding InfoPrint to. The capabilities of the actual destination directly control the types of jobs that your users can print, or send by electronic mail with this destination configuration.

Desktop destination configuration model
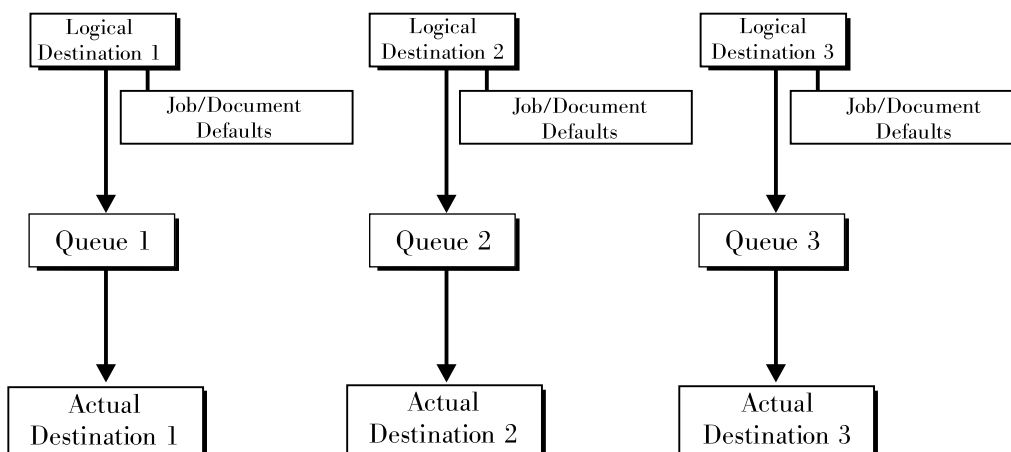
Pool destination configuration model

Like the default destination configuration model, the pool destination configuration model has a one-to-many relationship between a logical destination and two or more actual destinations.

The pool destination configuration model, as shown in Figure 4. Pool destination configuration model, p. 47, has a one-to-many relationship between a logical destination and two or more actual destinations.

Pool destination configuration model

```
                    ┌──────────────┐
                    │   Logical    │
                    │ Destination 1│
                    └──────┬───────┘
                           │      ┌──────────────┐
                           │      │ Job/Document │
                           │      │   Defaults   │
                           │      └──────────────┘
                           ▼
                    ┌──────────────┐
                    │   Queue 1    │
                    └──────┬───────┘
            ┌──────────────┼──────────────┐
            ▼              ▼              ▼
    ┌──────────────┐┌──────────────┐┌──────────────┐
    │    Actual    ││    Actual    ││    Actual    │
    │ Destination 1││ Destination 2││ Destination 3│
    └──────────────┘└──────────────┘└──────────────┘
```
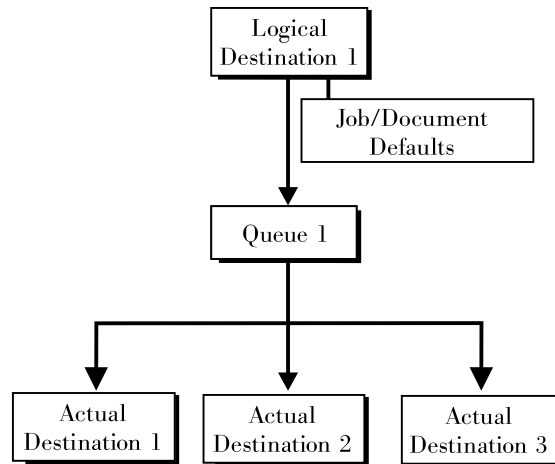
This model is very effective when you have output devices that you want to group together based on things such as location, capability, speed, and capacity. You might also want to group them based on who uses them or who manages the output they generate. For example, all jobs sent to a specific group of printers come from the department that generates monthly statements for your customers. The jobs use the same set of job- and document-attribute defaults, including the form that they print on and the overlay they require. The printer operators responsible for the printers direct all of the output to a mail room for distribution. The pool model is also very beneficial in workload balancing.

🡇 Note

You can submit a job directly to an actual destination with the Pool destination configuration model, but you won't achieve a pooling effect; the job will only be scheduled to the actual destination you submitted it to.

Funnel destination configuration model

The funnel destination configuration model has a many-to-one relationship between two or more logical destinations and one actual destination. Figure 5. Funnel destination configuration model, p. 48 shows the funnel configuration.

Funnel destination configuration model
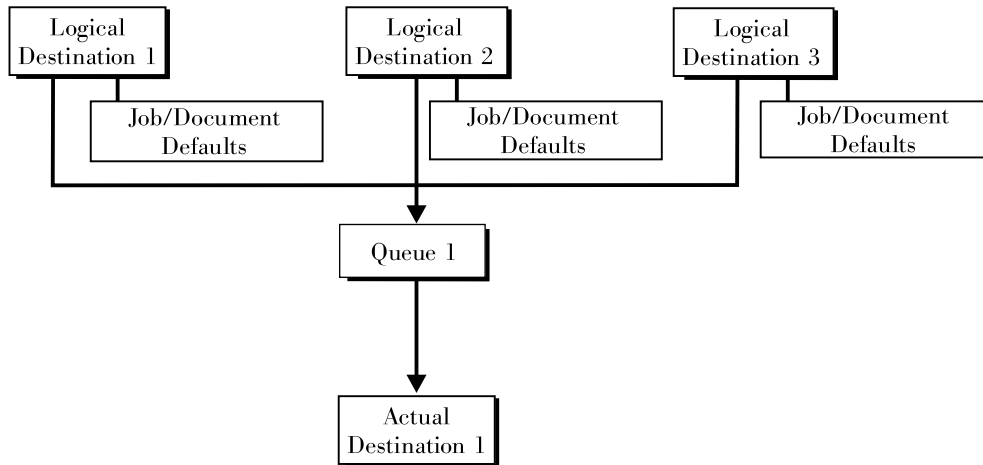
This is a flexible configuration model that provides you with the ability to more closely control setting job and document defaults for jobs. For example, you can configure one logical destination to provide job and document defaults for PostScript jobs and another logical destination to support jobs using AFP resources.

Hourglass destination configuration model

The hourglass destination configuration model, shown in Figure 6. Hourglass destination configuration model, p. 48, has a many-to-many relationship between logical destinations and actual destinations. The hourglass model provides both the workload balancing benefit of the pool model and the flexible job- and document-defaulting benefits provided by the funnel model. The hourglass model is the most flexible of the destination configuration models.

Hourglass destination configuration model
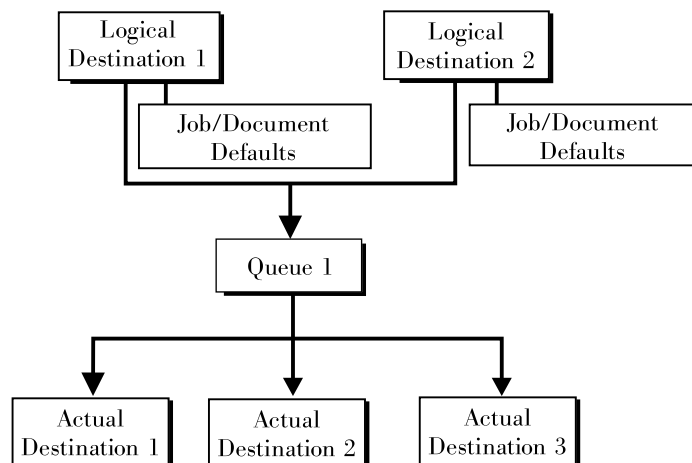
Recommended distributed configuration model

To manage your print environment efficiently in a distributed environment (as shown in Figure 7. Distributed configuration model, p. 49), we recommend organizing your destinations using the

hourglass configuration model and using multiple queues and default jobs to control the work flow through your InfoPrint Manager for Linux servers. Define queues based upon operators, rather than based upon the number of devices defined in your installation. Whether your installation has one operator for every ten printers at your site or an operator managing all the printers on a particular floor, grouping printers by queue makes management of all printers and print jobs much easier because one person can monitor a single queue.

Having one person monitor a single queue is highly efficient. An operator can use the **InfoPrint Manager Administration GUI** to view a particular queue. Because InfoPrint uses queue authorization to manage the security settings on print jobs, an operator has a much easier job overseeing this support without having to switch from one queue to another. You can create default jobs and associate them with different logical destinations to make sure that the queue schedules these jobs on the correct actual destinations. For example, the initial-value-job associated with LogDest1 can default **actual-destination-requested** to ActDest1, so that jobs submitted to LogDest1 are scheduled to ActDest1. Since **actual-destination-requested** is a multiple-valued attribute, you can also specify more than one actual destination on the initial value job's **actual-destination-requested** attribute and let other job and document attributes (such as **document-format**) determine which actual destination is selected.

Distributed configuration model

With this model, you can have different actual destinations associated with different logical destinations through the job and document defaults you specify.
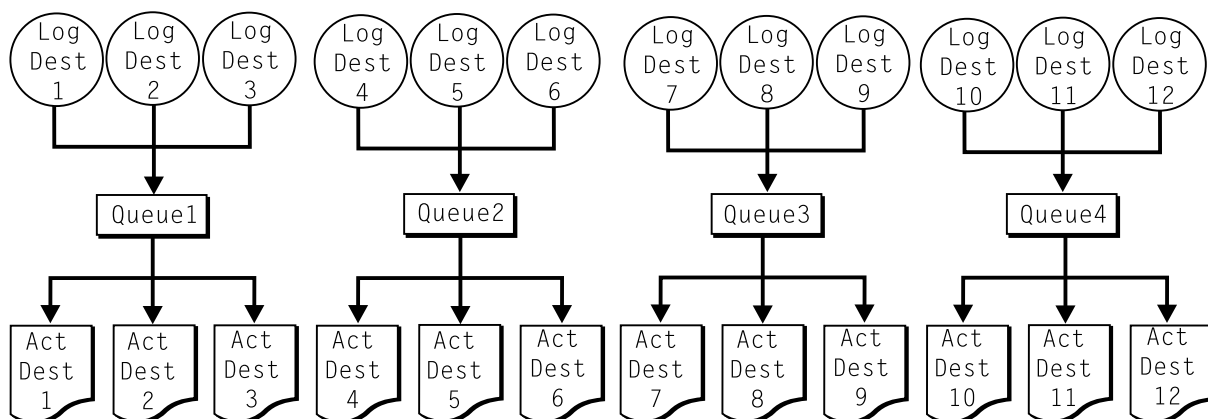
Cloud considerations

When you configure a virtual operating system in the cloud, make sure that you follow the same considerations as when you configure the system on the ground.

Recommendations:

- Enable SSL/TLS encryption at the InfoPrint Manager level to increase the communication security between InfoPrint Manager components.

- Make sure that you use a static IP address for the public part of the InfoPrint Manager infrastructure.

- Configure your cloud solution for persistent MAC address of the network card used for the InfoPrint Manager instance.

- Store the data in a persistent storage, to ensure that it is not lost across operating system reboots.

- Make sure that the InfoPrint Manager system runs in a secured virtual network in the cloud, so that the communication and data cannot be accessed from the Internet.

- Back up your data regularly to maintain data integrity.

- High availability can be ensured by multiple virtual systems that are configured identically and use the same storage area.

- The InfoPrint Manager architecture lets the customer split the work between cloud and ground. The InfoPrint Manager supervisor can run on the ground, while the command processor and spooler can run in the cloud. For more information on InfoPrint Manager architecture, see the "Parts of the server" section in the *RICOH InfoPrint Manager for AIX and Linux: Configuring and Tuning Guide*.

  ⭐ **Important**

  - This is recommended only for transaction customers because of the print speed requirements. Distributed print customers can print directly from cloud.

  - To allow for satisfactory print speeds, the printer server(s) running the InfoPrint Manager supervisor pdserver should be on the ground in the same location(s) as the printers and connected to them via the local LAN.

  - The cloud + ground model is not viable for continuous form printing, unless there is a dedicated high-speed, low-latency channel from cloud to ground.

  - Other recommendations for driving continuous form printers:

    ◆ Use a direct Gigabit connection whenever possible.

    ◆ Run the job locally with InfoPrint Manager, bypassing the network.

    ◆ The network latency (ACK time interval) can greatly influence printing performance. Buffer the data at the printer when sending data over a longer period of time.

    ◆ Even if there is a network pipeline dedicated for continuous form printers, the network should be viewed as a potential single point of failure. Make redundant high-speed pathways available.

    ◆ Use the **Save page** mode, invoked by activating the **optimize-for-multiple-copies** attribute for the Ricoh printers that support it. Thus the job can be spooled onto the printer before printing begins.

To see which ports you must open so that InfoPrint Manager can run and communicate with the ground devices, go to Ports used by InfoPrint Manager for AIX, Linux, and Windows, p. 75.

For security purposes, you must start using a VPN between the cloud and the ground network. The InfoPrint Manager communication with the clients and printers is not encrypted.

Running InfoPrint Manager for Linux in a Docker container

When you configure a virtual operating system to run in a Docker container, make sure that you follow the same considerations as when you configure it on a physical system. InfoPrint Manager can run using the following base Docker containers:

- Red Hat Universal Base Images

- AlmaLinux Base Images.

File system configuration planning

Ricoh recommends that the file systems be mounted as volumes in the Docker container. You must create these volumes before installing InfoPrint Manager. InfoPrint Manager mounted file systems include:

- `/var/lib/pd`
- `/var/pd`
- `/var/pddir`
- `/var/psf`
- `/var/psf/segments`
- `/var/RICOH/Cloud Connector`

⭐ **Important**

- Since during initial system installation (docker compose create command) the Docker container does not have access to the external volumes, a manual step is needed in order to copy the folder structure created by the InfoPrint Manager installer to a temporary local folder.

- When the container is started for the first time with the above-mentioned volumes mounted, the backed-up folder structure must be restored to the mounted volumes.

- This procedure must be run every time an InfoPrint Manager update is applied to the system.

If your InfoPrint Manager installation drives printers that use either the CUPS, BSD, or PSFOther device support systems (DSSs), make sure that you synchronize the `/etc/cups` directory with a separate Docker image. Even though these are Linux system files and not InfoPrint Manager files, InfoPrint Manager uses data to these files that is critical to ensuring that certain printers appear after the container re-initialization. If this directory is not persistent, certain InfoPrint Manager actual destination objects may have to be deleted and redefined each time you upgrade the container.

Installing InfoPrint Manager for Linux in a Docker container

To install InfoPrint Manager for Linux in a Docker container:

1. Create all the images InfoPrint Manager requires.

2. Generate your `ipin_response` file.

3. Create the InfoPrint Manager Docker container. The `docker-compose.yml` and `ipm.dockerfile` sample files are listed below. Make any changes needed for your configuration or create your own build files.

    ⭐ **Important**

    Do not start the container yet.

4. Copy the `/var/lib/pd`, `/var/pd`, `/var/pddir`, `/var/psf`, `/var/psf/segments`, and `/var/RICOH/Cloud Connector` contents to the appropriate volumes.

5. Start the container and mount the volumes.

Make sure that any configuration files are specified as Docker configuration files. The file list includes, but is not limited to:

- rc.pd.servers
- rc.ippgw.daemons
- rc.lpd.daemons

- rc.mvsd.daemons

- rc.ipmws.daemons

- rc.iprsap.daemons.

These files can be found in the /etc folder.

🔽Note

In order to enable the job viewer in the Docker container, make sure you add this setting to the InfoPrint Manager Web Administration Interface (Web GUI) configuration (/var/pd/ipwebgui/ipm.ini): jobviewer-same-url-host=1.

docker-compose.yml sample

```
services:
  ipm-app:
    container_name: ipm-app
    image: ipm
    privileged: true
    hostname: "ipm-host"
    build:
      context: .
      dockerfile: ipm.dockerfile
    environment:
      - PATH=/usr/bin:/usr/sbin:/usr/lpp/pd/bin
    ports:
      - "14080:14080"
      - "6874:6874"
      - "6875:6875"
    networks:
      - ipm-network
    volumes:
      - pd:/var/pd
      - psf:/var/psf
      - segments:/var/psf/segments
      - pddir:/var/pddir

networks:
  ipm-network:
    driver: bridge

volumes:
  pd:
  pddir:
  psf:
  segments:
```

ipm.dockerfile sample

```
FROM almalinux

ARG VERSION=4.13.0-0

###################### Install dependencies ######################
COPY ${VERSION}/Packages/ipr-base-prereqs-${VERSION}.x86_64.rpm /home/install/
RUN yum localinstall -y /home/install/ipr-base-prereqs-${VERSION}.x86_64.rpm

###################### Install net-tools ######################
RUN yum install -y net-tools

###################### Install RPD-related code ######################
COPY $VERSION/. /home/install
RUN chmod 755 /home/install/remote_install
```

```
RUN mkdir /var/pd
RUN mkdir /var/psf
RUN mkdir /var/psf/segments

COPY response_file/ipin_response /tmp/

RUN /home/install/remote_install -s /home/install -a /tmp/ipin_response

# update ipm.ini to support job viewer in a Docker container
RUN grep -qxF 'jobviewer-same-url-host=1' /var/pd/ipwebgui/ipm.ini || echo
# 'jobviewer-same-url-host=1' >> /var/pd/ipwebgui/ipm.ini

ENTRYPOINT ["/sbin/init"]
```

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4. Planning to print with host systems

- Print shop scenarios
- Managing resources with Download for z/OS
- Managing resources with AFP Upload

InfoPrint Manager provides several options for printing to or from host systems, depending on how many functions you need and where you want to control printing from (the host system or InfoPrint Manager). All of the options allow you to share printers between host and LAN applications, though some require more configuration than others. Available host printing options include:

- **Download for z/OS**

    The MVS Download Receiver daemon in InfoPrint Manager supports both Download for z/OS or AFP Download Plus for z/OS. If you use the Download for z/OS feature of PSF for z/OS or AFP Download Plus feature of PSF for z/OS, you can spool jobs to remote locations, so that the remote print operator can control printing.

    🔽 Note

    Within InfoPrint Manager, the term Download for z/OS refers to both the Download for z/OS feature of PSF for z/OS or the AFP Download Plus for z/OS feature of PSF for z/OS.

- **InfoPrint Server on z/OS**

    If you use InfoPrint Server on z/OS, you can submit jobs on the host for spooling to a remote InfoPrint Manager server. The IP PrintWay component of InfoPrint Server, which contains an LPR, and the InfoPrint Manager LPD must be running. When you submit a job on the host, you can specify advanced InfoPrint options, such as form definitions and page definitions. The remote print operator controls printing after InfoPrint Manager receives the job.

- **LPR**

    Remote systems that support LPR (RFC 1179) can also submit output to InfoPrint Manager for Linux through its LPD gateway using the TCP/IP protocol. The Linux line printer daemon (**LPD**) works with the InfoPrint LPD Gateway to route incoming jobs from remote clients to InfoPrint destinations. Some LPR clients, such as the Linux LPR or the **lprafp** utility supplied with InfoPrint Manager for Linux, can pass print parameters to InfoPrint Manager (using the **-o** flag). However, not all LPR clients support optional parameters.

- **AFP Upload**

    AFP Upload allows InfoPrint Manager users to print AFP data via PSF Upload TCP/IP DSS from the Linux platform on their existing MVS Host system printers.

Print shop scenarios

To see how InfoPrint Manager can best manage your particular print environment, consider these sample scenarios.

A black box shop

A data center located on the East coast of the United States provides billing statements to five regional offices around the country, submitting output to a set group of printers. Because these users want to keep all resource management on their MVS systems, they can use the MVS Download Receiver in InfoPrint Manager with AFP Download Plus for z/OS as a black box solution. They never have to move

resources, and they can send jobs to their remote offices to print immediately. All print job and resource management takes place at the central host.

Printing from the LAN and the host

This print shop wants to spend the day shift printing staff reports from the local LAN. On the night shift, it wants to use the same InfoPrint 4100 printer to print billing statements from the pSeries server. By creating the destination through the InfoPrint Manager Administration GUI, the print administrator can make sure that the same destination can print jobs from both the LAN and the host.

Distributed print shop using remote spooling

A data center prints a monthly series of in-house reports. The jobs that generate the output are run during the evening off-shift (so they do not interrupt other work during the day), then held on the system. The shop saves bandwidth costs by sending the print files once, then printing them at rated speed as many times as needed. Although this data center only has a 56 KB link, MVS Download Receiver prevents performance problems caused by inefficient line speed. MVS Download Receiver waits for the entire job to be spooled before starting to print it on a high-speed continuous forms printer. Because this shop wants to integrate all their print servers while retaining the ability to send jobs once and print them many times, the MVS Download Receiver feature of InfoPrint Manager best meets their needs by allowing them to control all jobs locally.

Managing resources with Download for z/OS

When you use the Download for z/OS function, all print resources must reside on the Linux system where the InfoPrint Manager server is installed. You can manage these resources in one of these ways:

- Download these resources to InfoPrint Manager through a standard file transfer protocol (FTP) in binary format. This method works best when resources do not change often.

- Use the Network File System (NFS) **mount** command to make OS/390 or MVS systems containing resources accessible to the Linux server that InfoPrint Manager is running on. Because this solution can cause a great deal of network traffic, you should be careful when choosing this solution if your resources change frequently.

- Use Download for z/OS to submit a resource instead of a print job and send it to all print resource libraries defined on your InfoPrint Manager server. This method requires you to customize your MVS Download Receiver exits and configuration.

When you use the MVS Download Receiver function in InfoPrint Manager with AFP Download Plus for z/OS, the resources for the print jobs are normally sent with the print job as inline resources used for that job and the resources do not need to reside on the InfoPrint Manager server. However, if AFP Download Plus is configured to not send all resources as inline resources, then the resources that are not sent inline must reside on and be managed by the InfoPrint Manager server.

Managing resources with AFP Upload

If a data center has migrated its applications to Linux platforms, but still has its printers attached to the MVS system, they can use AFP Upload. By using PSF Upload TCP/IP, InfoPrint Manager for Linux acts

as a passthrough point for sending AFP files (or files it can convert to AFP) to the MVS server, which places them on the JES spool. PSF Upload TCP/IP communicates through the TCP/IP protocol from the Linux system to the PSF host. AFP resources must be resident on the PSF host. By submitting jobs to the MVS host, a data center performs resource management at the PSF host, so they can use SMF accounting records and take advantage of their operators' familiarity with host systems. Resource names and other parameters can be passed as attributes from the Linux client to the MVS system.

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5. Using AFP resources

After creating the text for your document, you will probably want to format it to make it more readable and interesting. You can use images—such as charts, graphs, logos, boxes, and lines—to illustrate or to separate various sections. You can also use fonts to emphasize different areas of text. You might like to draw from a catalog of predefined graphic and text elements created for your enterprise. You might like to combine text and graphic elements into segments (such as footers, headers, or side bars) that you can position as single units on the page. To ensure consistency, you can specify common elements and layout for documents of the same type.

Advanced Function Presentation (AFP) resources provide powerful tools for controlling the appearance of your documents. InfoPrint Manager includes a number of AFP resources. The different types of AFP resources follow:

Color management resource

Color management resource (CMR) is an architected resource that is used to carry all of the color management information required to render a print file, document, group of pages or sheets, page, or data object with color fidelity.

Data object resources

Data object resources are a type of AFP resource; they can be an IOCA file or a type of file natively supported by a particular model of printer (for example, an EPS file on an InfoPrint Color 130 plus). In addition, if you use the transforms that come with InfoPrint Manager to convert objects into AFP first, these non-native types of files can be used as data object resources as well. In InfoPrint Manager, data object resources are grouped with BCOCA and GOCA objects, and they are collectively known as presentation object containers.

Fonts

A font is a single size and typeface in a particular type family, including letters, numerals, punctuation marks, special characters, and ligatures.

Form definitions

Form definitions provide instructions on how output devices position data on the page. Form definitions can specify overlays, a paper source for cut-sheet printer devices, duplexed printing, text suppression, data position, and the number and modifications of pages.

Page definitions

Page definitions contain the formatting controls for line data. Page definitions can include controls for the number of lines per logical page, font selection, print direction, and the mapping of individual fields to positions on the logical page.

Page segments

Page segments contain text and images that you can include at any addressable point on a page or an electronic overlay.

Overlays

Overlays are collections of predefined data—such as lines, shading, text boxes, or logos—that can merge with variable data on a page or a form during printing or transmission.

InfoPrint Manager provides several methods for accessing AFP resources. If the only AFP resources available are those that shipped with InfoPrint Manager, they are accessed automatically when a job needs them. If, however, you are using other AFP resources, you must specify the location of these resources. There are also ways to specify resource locations through job submission parameters and environment variables. Finally, each document in a job can specify the path to each of the AFP resource

types it requires. You can elect to handle these specifications with a default document associated with a logical destination.

⭐Important

Do not store custom AFP resources in the same directory with the AFP resources included with InfoPrint Manager. If you ever need to reinstall or update InfoPrint Manager, your custom resource files could be corrupted or deleted.

You can use resource-context objects to access your AFP resources. Resource-context objects identify the locations of different types of AFP resources that jobs sent to PSF actual destinations can reference. Resource-context objects let you encapsulate the directory path name in one place. You then specify the resource-context object name rather than a directory name when specifying where to find resources. Later, if the location of a resource changes, you only need to modify the path name specified in the corresponding resource-context object.

You must use the **pdcreate** command (at an Linux command prompt) to create a resource-context object. You then reference this object when you create or modify a PSF actual destination in the InfoPrint Manager Administration GUI or the Web Interface. Jobs can also reference resource-context objects through their contained documents. Both the actual destination and the resource-context objects that are referenced must reside in the same InfoPrint Manager server.

5

6. Planning to share printers

- Methods for sharing printers
- Sharing printers between host and LAN applications

In many environments, sharing printers lets you get the most benefit from your printers. One of the primary benefits of using InfoPrint Manager is the ability to have various host and client systems share printing resources at a variety of levels. The level of sharing used depends on the requirements of the environment.

Sharing printers
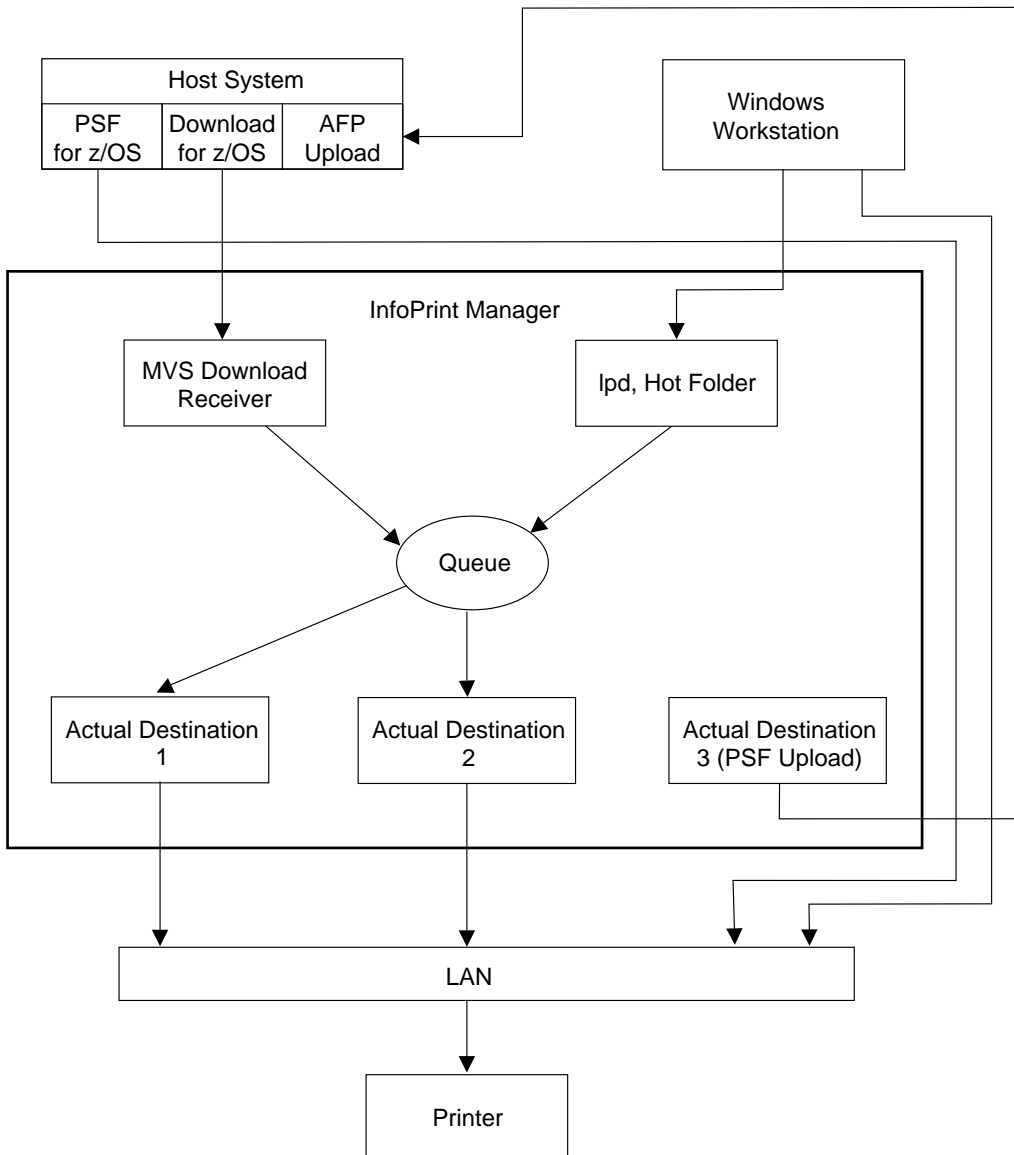
Methods for sharing printers

You can share printers by having the print drivers share the communication link with the printer or by having various clients submit jobs to the same print queue. Print drivers communicate directly to printers. Print drivers include host PSF printers and InfoPrint Manager actual destinations.

Sharing the communication link with IPDS printers

Since only one print driver can have an open communication link with an IPDS printer at a time, management of multiple print drivers is necessary. This can be done in one of two ways:

- Manually start and stop the InfoPrint Manager actual destinations and Host PSF printers to control the print driver operating the printer

- Configure the print drivers to wait for the printer to become available and to release the communication link when the print drivers have nothing to print.

The **connection** timer identifies how long to wait for the printer to become available. The **release** or **inactivity** timer identifies how long the print driver should maintain the communication link when it has no work to do. When a print driver is actively feeding jobs to the printer, the print driver continues to do so as long as the interval between job submissions is not longer than the specified release or inactivity time. The print driver controls the printer until the flow of jobs sufficiently slows. The release or inactivity time values make sure that the destination is shared equally between the printer drivers, which is important. For detailed information about setting these values in InfoPrint Manager, see "Sharing actual destinations with a host" in *RICOH InfoPrint Manager for Linux: Procedures*.

You must configure the print drivers when one or more of these are configured to drive the same printer:

6

- InfoPrint Manager actual destinations

- Host PSF printers

When you configure the print drivers, these conditions apply:

- There is no single point of control and auditing for all jobs printed. Multiple interfaces must be used to determine all pending jobs for a printer.

- There is no automated job prioritization between jobs from different print drivers. Manual actions are required to force an active print driver to release the printer to allow another waiting print driver to use it.

- Aside from the printer and network, there is not a single point of failure.

Sharing the communication link with PostScript, PCL, or PPDS printers

When InfoPrint Manager sends PostScript, PCL, or PPDS to a printer, no configuration is necessary to allow print sharing between:

- InfoPrint Manager actual destinations

- Windows workstations

- LPR clients submitting directly to the printer

Most printers will automatically print jobs in the order that the jobs are received. Some configuration options might be available on some printers.

Submitting jobs to the same print queue

When you submit jobs to the same print queue, only one print driver communicates with the printer. The print driver can either be an InfoPrint Manager actual destination or a PSF for OS/390 defined printer. All jobs are managed on either one InfoPrint Manager queue or one PSF for OS/390 defined printer.

Using an InfoPrint Manager actual destination

You can use these methods to submit jobs to one InfoPrint Manager queue:

- MVS Download Receivers when jobs are received from Host MVS Download drivers

- LPD when jobs are received from LPR clients on any platform

- Hot Folder when jobs are received from a mapped network directory

- InfoPrint Manager Select, Submit Express and IPP clients when jobs are received directly from the Windows client

- Command line using a **pdpr** command

- IP Printway if you do not use Download for z/OS to submit jobs

When you submit print jobs to the same queue, these apply:

- There is a single point of control and auditing for all jobs printed. A single InfoPrint Manager interface can be used to determine all pending jobs for the printer.

- There is automated job prioritization between jobs. Several methods of prioritization are available.

- There is a single point of failure.

Using a PSF for z/OS or OS/390 defined printer

InfoPrint Manager for Linux provides the ability to upload AFP jobs to the JES spool through a TCP/IP communications link. Jobs can be submitted to InfoPrint Manager using any of the methods described in . When the jobs are directed to a PSF Upload actual destination, the jobs are placed on the JES spool with existing host print jobs. Final control of the print jobs is performed on the z/OS or OS/390 system. You use the InfoPrint Manager system to control jobs that it sends to the z/OS or OS/390 system.

When you upload jobs to the JES spool, these apply:

- There is a single point of control and auditing for all jobs printed. An z/OS or OS/390 interface can be used to determine all pending jobs for the printer.

- There is automated job prioritization between jobs.

- There is a single point of failure.

Sharing printers between host and LAN applications

To get the most out of your printers, you can share them among your host and LAN applications.

Printing from existing host applications

There are several ways you can submit jobs from host applications to InfoPrint Manager:

- Download for z/OS sends jobs to an MVS Download Receiver.

- The LPR client sends jobs to the LPD utility on the InfoPrint Manager server.

- If you use InfoPrint Server on z/OS, you can submit jobs on the host for spooling to a remote InfoPrint Manager server. The IP PrintWay component of InfoPrint Server, which contains an LPR, and the InfoPrint Manager LPD must be running. When you submit a job on the host, you can specify advanced InfoPrint options, such as form definitions and page definitions. The remote print operator controls printing after InfoPrint Manager receives the job.

⬇Note

As described in , the method used affects how the printer is shared.

For more information, see .

Printing from existing LAN applications

It is extremely important in many networked environments to allow existing applications to submit print jobs. PC users expect to be able to select **Print** from the **File** menu when they want to produce printed output. There are five ways that users can submit print jobs to InfoPrint Manager for Linux destinations from their workstations. Choose the one that best suits your environment.

- on all Windows, Linux, or Mac OS X workstations

- on Windows or Mac OS X workstations

- on the InfoPrint Manager server and create IPP client printers on client workstations

- that automatically submits files that are stored in it to an InfoPrint Manager destination

Using InfoPrint Select

To use InfoPrint Select (available for Windows, Linux, and Mac OS X) to enable job submission from applications, you must install and configure InfoPrint Select on the workstation. During this configuration, you must make a destination controlled by InfoPrint Manager known to the client system.

On Windows clients, you use the Windows **Add Printer Wizard** to add a local printer, load the appropriate driver, and assign a unique port to each InfoPrint Manager destination.

On Linux and Mac OS X clients, you use the CUPS **Add Printer Wizard** to add an InfoPrint Select printer, load the appropriate PPD, and assign a unique Device URI to each InfoPrint Manager destination. The Device URI format is: `selpms://server_hostname[:port]/destination`.

⬇ Note

If no port is specified, the default port number is 6874.

The InfoPrint Select client is available on the *RICOH InfoPrint Manager: Common Clients* DVD-ROM, LCD4-5642. The LDAP Select supports InfoPrint Manager socket authentication. For more information about installation and configuration, see *RICOH InfoPrint Manager for Linux: Getting Started*.

With InfoPrint Select in place, the user receives relevant event notifications generated by InfoPrint Manager. Typically, this notification simply informs the user that a job has completed successfully. If, however, an error occurs in the processing of a job, the event notifications include information to help you diagnose the problem. With InfoPrint Select, you are also provided access to the InfoPrint Manager command-line interface, including the **pdpr** command. This provides client-application access to all the AFP print attributes that can control such jobs. Finally, the InfoPrint Select user can submit jobs to destinations controlled by either InfoPrint Manager for AIX, InfoPrint Manager for Linux, or InfoPrint Manager for Windows.

Your enhanced InfoPrint Select client allows you to:

- Specify InfoPrint job attributes when submitting a job to the server

- Support the canceling, holding, and releasing of jobs in a queue

For more information about these specific enhancements, consult the help system.

Using InfoPrint Submit Express

To use InfoPrint Submit Express, you must install and configure InfoPrint Submit Express on the workstation. The InfoPrint Submit Express client is available with the Common Client DVD.

With InfoPrint Submit Express in place, commercial print shops can create job tickets, submit print jobs to the InfoPrint Manager server, and track the progress of those jobs. A job ticket contains all the specifications for a job (including layout and finishing options), as well as the files that are associated with that job. The job ticket refers to the customer's job data and pulls them together in a job bundle. InfoPrint Submit Express allows client users to make use of all the data stream transforms (PCL, PostScript, TIFF, GIF, and JPEG) that are available from the InfoPrint Manager server. Finally, the InfoPrint Submit Express user can submit jobs to destinations controlled by InfoPrint Manager.

Using an IPP Gateway

InfoPrint Manager includes an IPP gateway that allows users anywhere in the network to submit jobs through InfoPrint Manager, even to printers that are not IPP-enabled. Users install IPP client software on their workstations, then follow the instructions provided with the IPP client to access a printer managed by a remote printer server.

The IPP gateway provides the InfoPrint Manager administrator with straightforward control over which destinations are accessible to applications. This feature does not provide detailed event notification from InfoPrint Manager, but users can receive detailed notification if they install InfoPrint Manager Notifications on their workstations.

Using InfoPrint Manager hot folders

An InfoPrint Manager *hot folder* is a directory that is associated with a logical destination. When you copy or move a file to the hot folder, InfoPrint Manager automatically submits the job to that logical destination. The hot folder directory can be created on any system that the InfoPrint Manager server and all job submitters can access, including the system that the InfoPrint Manager server is installed on. The directory should then be shared so that all of the users who need to copy files to it can access it. To submit files to the hot folder, users copy their files to that directory from their local systems.

If you set the **notification-profile** attribute in an attributes file and submit that file along with your print file, you can receive notification messages about the print jobs you submit using hot folders.

🡇 Note

Additional information about using hot folders, including creating attribute files, is available in the *RICOH InfoPrint Manager for Linux: Getting Started* and the *RICOH InfoPrint Manager for Linux: Procedures*.

Otherwise, this feature does not provide detailed event notification from InfoPrint Manager.

6

7. Migrating to InfoPrint Manager for Linux Version 4.13

- **Preparing to migrate to InfoPrint Manager for Linux Version 4.13**
- **Considerations when migrating to InfoPrint Manager for Linux Release 4.13**

For detailed information about migrating InfoPrint Manager for Linux from Version 4.12 to Version 4.13, see *RICOH InfoPrint Manager for Linux: Getting Started*.

⭐**Important**

Migrating to InfoPrint Manager for Linux Version 4.13 requires environment-wide updates. If you plan to migrate a server, be sure to allocate time and resource to make these upgrades:

- Upgrade all client applications (management and submission) on all networked workstations to 4.13 levels

- Upgrade all interoperating InfoPrint Manager for Linux servers to 4.13

- If you plan to interoperate with InfoPrint Manager for Linux or InfoPrint Manager for Windows, upgrade to InfoPrint Manager for Linux or InfoPrint Manager for Windows Version 4.13

The InfoPrint Installer will automatically migrate your predecessor product configuration to InfoPrint Manager for Linux Version 4.13.

🔽**Note**

1. Refer to *RICOH InfoPrint Manager for Linux: Getting Started* for detailed instructions on backing up your InfoPrint Manager for Linux previous version and restoring configuration files after the migration.

2. Any optional features of previous versions of InfoPrint Manager for Linux that are installed on the system will be removed when the base server software is migrated to Version 4.13. This is done because optional features at previous versions might be incompatible with the Version 4.13 server.

Preparing to migrate to InfoPrint Manager for Linux Version 4.13

Before running the InfoPrint Manager Installer to migrate to InfoPrint Manager for Linux Version 4.13, it is extremely important to make a complete backup of your current printing system. Consult the product documentation for details on how to back up your system. To be completely safe, it is recommended that you make a backup of each volume group before proceeding.

The only foolproof way to reverse the migration process (or to recover from a migration failure) is to restore your system from a backup.

The migration process will interrupt any active print jobs that have been submitted. You should take steps to delete all active and pending jobs before migrating.

During the process of installing the InfoPrint Manager software, your Linux software might be updated to make sure that InfoPrint Manager will function properly. If you are missing any required Linux rpm packages, the installer will direct you to install them from your Linux product media.

Considerations when migrating to InfoPrint Manager for Linux Release 4.13

When migrating from an older Release of InfoPrint Manager to Release 4.13, the installer might not automatically select the features that were installed before. If this happens, you need to install the features that are available with Release 4.13.

7

8. Collecting required information for the install

- **Configuration options you select during the install**
- **The invoice shipped with your software**
- **Communications worksheet**
- **Planning for printers**

The InfoPrint Installer helps you load and configure InfoPrint Manager on your Linux system. If you have an Linux system with the required prerequisites, you can use your InfoPrint DVD to install InfoPrint on your system. When you use the InfoPrint Installer, you can accept the default setup values provided for you or enter your own values. If you accept the default values, very little configuration information is required from you.

Before you install InfoPrint Manager, you should back up your system. You should check that you have all prerequisite software installed by following the procedure in Verifying Linux rpm packages, p. 39. You might need to contact Ricoh support to obtain missing prerequisites.

You will need this information:

- Decisions regarding the configuration options you select during the install

- The invoice shipped with your software or package list

- The communications worksheet that you received from your Ricoh representative and have filled out. You can also use the Communications worksheet, p. 69 provided in this chapter.

Configuration options you select during the install

During the installation process, you will be asked to make decisions regarding the ways you can choose to configure your InfoPrint Manager for Linux server:

- If you want to configure InfoPrint Manager to support interoperability between more than one machine (either AIX, Linux, or Windows) or between one or more AIX, Linux, and Windows servers?

- What language is your server?

- How large is your file system and what size print jobs will you be processing?

- Do you want to install the InfoPrint Manager: Pull Print Feature?

The invoice shipped with your software

You will need this information from your invoice:

- The names of the features you purchased

- The number and types of printer licenses purchased

Communications worksheet

Do you currently use IPv6 over the local area network? ___Yes ___No

⬇️Note

An IPv6 address is represented by eight groups of four hexadecimal digits, each group has 16 bits. The groups are separated by colons (:). An example of IPv6 address is:
`2001:0ce8:58a3:0000:0000:6a2e:0370:3734`. Depending where you use it, you can enclose the IPv6 address within square brackets (for example,
`[2001:0ce8:58a3:0000:0000:6a2e:0370:3734]`).

Describe your local area network:

- Ethernet

    - Ethernet protocol _____

    - 10/100/1000 Ethernet (copper) cables _____

    - 10/100 Ethernet cables _____

- Gigabit SX (fiber) _____

- Linux server host name_____

    - Internet address ___.___.___.___

    - Network mask ___.___.___.___

    - Secondary Linux server host name_____

    - Internet address__.__.___.___

    - Network mask ___.___.___.___

- Printer name_____

    - Host name___.___.___.___

- Printer name_____

    - Host name___.___.___.___

- Gateway address_____

Once you have the necessary information, you can go to *RICOH InfoPrint Manager for Linux: Getting Started*.

8. Planning for printers

Each actual destination in your InfoPrint Manager environment must be configured. The specific information required to do each configuration varies according to the destination support system (DSS) and attachment type to be used. To determine the appropriate DSS and attachment type, see "Understanding Destination Support Systems (DSS)" in *RICOH InfoPrint Manager for Linux: Getting Started*.

A worksheet is available to help you prepare to create each type of printer in *RICOH InfoPrint Manager for Linux: Getting Started*.

9. Reviewing software components

InfoPrint Manager consists of a number of different hardware and software components. **Base components** are included when you purchase InfoPrint Manager for Linux, while **optional components** are additions to the base product that you can purchase and install through additional product media.

The *InfoPrint Manager for Linux: Base Server* DVD-ROM, LCD2-20035, contains all software for installing an InfoPrint Manager server on an Linux system. All of these components are installed with the server; you cannot eliminate any of them:

- **InfoPrint Manager Server**

- **InfoPrint Manager Administration and Operations (GUIs)**

  Allow you to administer print operations from the system that the server is installed on.

- **InfoPrint Manager Notifications server**

  Lets the InfoPrint Manager server send status messages about InfoPrint objects to InfoPrint Manager Notifications clients.

- **InfoPrint Manager Notifications client**

  Lets the InfoPrint Manager server display messages on the system that it is installed on.

- **InfoPrint Manager Internet Printing Protocol (IPP) Gateway**

  Lets you submit printing jobs using IPP protocol via the InfoPrint Manager to printers.

- **InfoPrint Line Printer Daemon (LPD) Gateway**

  Allows users to submit jobs through the LPD Gateway to an InfoPrint Manager server.

- **InfoPrint Manager MVS Download Receiver**

  Allows you to print MVS jobs submitted from MVS systems using IBM Download for z/OS or AFP Download Plus for z/OS on InfoPrint Manager printers.

- **InfoPrint Manager Transforms**

  Allows you to run a variety of transforms like: db2afp, d2afp, gif2afp, img2afp, jpeg2afp, line2afp, pcl2afp, pdf2afp, ps2afp, tiff2afp, xml2afp and xml2pdf.

- **InfoPrint Manager Web Server**

  Allows you to run and administer web applications like: Pull Print or Web Interface. While the Web Server is installed with the base server, it is not running, unless you start it from MMI.

- **InfoPrint Manager Web Interface** and **InfoPrint Manager Web Management Interface**

  Allow InfoPrint Manager to run administration and operations on a web browser user interface.

- **InfoPrint Manager: Publications**

InfoPrint Manager for Linux: Base Server DVD-ROM, LCD4-20035, also includes these optional priced features:

AFP2PDF Feature (LCD2-20042)	The afp2pdf transform converts Mixed Object Document Content Architecture (MO:DCA-P) documents, also called AFP documents, to Adobe Portable Document Format (PDF) documents to be viewed, archived, e-mailed, or printed.
Pull Print Feature (LCD2-20001)	The InfoPrint Manager Pull Print feature works with your existing InfoPrint Manager server and an external Streamline NX or Equitrac server. This feature schedules the job to print when you, as

	the authenticated owner, request them from the printer. You can use this to reduce unwanted print-out and therefore save money. You can further save paper by turning off header sheets. By not printing the job until the owner requests it from the printer console, this feature provides a secure printing environment.
SAP Print Feature (LCD4-5646)	A business enterprise that uses SAP can use this print feature to print to InfoPrint Manager for Linux. The SAP Print Feature contains the **sap2afp** transform for converting both Advanced Business Application Programming (ABAP) data and Output Text Format (OTF) data to AFP for printing, the SAP OMS (Output Management Support) support for obtaining enhanced status regarding print jobs. See the *SAP R/3 Printing and Configuration Guide* in the RICOH Software Information Center at https://help.ricohsoftware.com/swinfocenter.
Workgroup Printer Engine	Required to install and use InfoPrint-driven printers that print in the range of 0 to 80 pages per minute.
Low Speed Printer Engine	Required to install and use InfoPrint-driven printers that print in the range of 81 to 150 pages per minute.
Medium Speed Printer Engine	Required to install and use InfoPrint-driven printers that print in the range of 151 to 400 pages per minute.
High Speed Printer Engine	Required to install and use InfoPrint-driven printers that print in the range of 401 to 1999 pages per minute.
Ultra High Speed Printer Engine	This is required to install and use InfoPrint-driven printers that print 2000 pages per minute or faster.

These optional InfoPrint Font Collection DVDs are included with InfoPrint Manager:

- **AFP Classic Fonts**: LCD2–20029
- **AFP Outline Fonts**: LCD4-5683
- **WorldType Fonts**: LCD4-5684-06
- **AFP Raster Fonts**: LCD4-5700-02
- **AFP Asian Classic TrueType Collection and OpenType fonts**: LCD2-20055-01

Table Contents of the Common Clients CD-ROM shipped with InfoPrint Manager server, p. 73 lists the components that are included on the *InfoPrint Manager: Common Clients* CD-ROM, LCD4-5642. Each

client has its own installer and must be installed separately. All of the components can be installed on multiple systems.

Table Separately-priced features available with InfoPrint Manager server, p. 74 lists the separately installable features that are available with InfoPrint Manager for Linux.

Contents of the Common Clients CD-ROM shipped with InfoPrint Manager server

Common Client	Description
InfoPrint Select for Windows, Linux and Mac OS X	InfoPrint Select lets you submit jobs to InfoPrint Manager from word processors, spreadsheets, and other desktop applications. You can submit jobs to InfoPrint Manager with print options or attributes, and you can also hold, release, and cancel jobs. InfoPrint Select comes with a powerful command line as well.
AFP Printer Driver for Windows	The AFP print driver lets you produce Advanced Function Presentation (AFP) output from desktop applications. Use the AFP print driver in conjunction with InfoPrint Select to obtain a high degree of control over the appearance of your printed documents.
InfoPrint Manager GUIs	InfoPrint Manager includes these GUIs: • InfoPrint Manager Administration GUI • InfoPrint Manager Operations GUI These GUIs are used for most of your day-to-day InfoPrint Manager tasks.
InfoPrint Manager Notifications	The InfoPrint Manager Notifications Client enables remote systems to receive messages generated by either an InfoPrint Manager AIX server, InfoPrint Manager Linux server, or an InfoPrint Manager Windows server.
SAP Clients (AIX, Linux, and Windows) 🔻 Note The clients for SAP systems running on Sun Solaris or HP-UX are included with the SAP Print Feature.	SAP Client code is installed on an SAP system so that you can use the SAP system with either an InfoPrint Manager AIX server, InfoPrint Manager Linux server, or an InfoPrint Manager Windows server. See the *SAP R/3 Printing and Configuration Guide* in the RICOH Software Information Center at https://help.ricohsoftware.com/swinfocenter.
InfoPrint Manager Command Line Client for AIX	The AIX Client lets you enter InfoPrint Manager commands (such as **pdpr**) for AIX systems where InfoPrint Manager has not been installed, and lets you enter the **lp**, **lpr**, and **qprt** AIX print commands on the AIX command line to a remote InfoPrint Manager AIX server, InfoPrint Manager Linux server, or an InfoPrint Manager Windows server.
InfoPrint Manager Command Line Client for Linux	The Linux Client installs InfoPrint Manager command on a Linux system and lets Linux users on Intel-based machines to issue InfoPrint commands over a TCP/IP-connected network to either an InfoPrint Manager AIX server, InfoPrint Manager Linux server, or an InfoPrint Manager Windows server.

9

Common Client	Description
InfoPrint Manager Command Line Client for Mac OS X	The Mac OS X Client installs InfoPrint Manager commands on a Mac OS X system and lets users of Mac OS issue InfoPrint commands over a TCP/IP-connected network to either an InfoPrint Manager AIX server, InfoPrint Manager Linux server, or an InfoPrint Manager Windows server.
InfoPrint Manager Command Line Client for Windows	The InfoPrint Manager Command Line Client installs InfoPrint Manager command on a Windows system and lets you issue InfoPrint commands over a TCP/IP-connected network to either an InfoPrint Manager AIX server, InfoPrint Manager Linux server, or an InfoPrint Manager Windows server.
AFP Workbench	Utility that allows you to view AFP files.
InfoPrint Submit Express	The InfoPrint Submit Express client allows you to submit ticketed jobs to InfoPrint Manager server over a TCP/IP-connected network to either an InfoPrint Manager AIX server, InfoPrint Manager Linux server, or an InfoPrint Manager Windows server.

Separately-priced features available with InfoPrint Manager Server

InfoPrint Manager Features	Description
Page Printer Formatting Aid (PPFA) Feature (LCD4–5647)	PPFA lets users of Advanced Function Presentation (AFP) products create form definitions and page definitions on a variety of different operating systems. These definitions specify how pages of printed output are formatted and how the printer should handle the physical sheets of paper. Using PPFA, you can turn unformatted z/OS or ASCII line data into highly effective documents without making changes to the application program. 🔸Note InfoPrint Manager Page Printer Formatting Aid feature runs only on Windows operating system. However, the resulted form definitions and page definitions can be used on InfoPrint Manager for Linux as well. All resources created with PPFA on Windows need to be copied on Linux.
Japanese PostScript Font Feature (LCD4-5656)	This feature lets InfoPrint Manager for Linux users to print the Kanji fonts required by PostScript data streams.
InfoPrint 4247 Feature (LCD2-20041)	Allows you to print to InfoPrint 4247 IPDS printers.
InfoPrint Transform Manager Feature (LCD2-20015)	This feature allows InfoPrint Manager to transform documents on remote servers for increased ripping performance. You can buy this feature with all variants of the InfoPrint Manager product (AIX, Linux x86_64, or Windows), but you can only install it on Linux or Windows. For more information, see Installing InfoPrint Manager Transform Feature, G550-20160

Ports used by InfoPrint Manager for AIX, Linux, and Windows

Commonly used ports

Port IPM/ AIX	Port IPM/ Linux	Port IPM/ WIN	Description	Port Type I/O
25	25	25	**SMTP** (Simple Mail Transfer Protocol)	OUT
67	67	67	**bootp server** (Some printers)	IN
68	68	68	**bootp client** (Some printers)	OUT
80	80	80	**HTTP** (HyperText Transfer Protocol) (Web servers on some printers)	OUT
92	92	92	**NPP** (Network Printing Protocol)	OUT
161	161	161	**SNMP Request** (Simple Network Management Protocol)	OUT
162	162	162	**SNMP monitor trap port** (Printer monitoring and management)	OUT
389	389	389	**LDAP Server Port non-SSL**	OUT
515	515	515	**lpr/lpd printer spooler**	BOTH
544	544	544	**RSHD**	IN
631	631	631	**IPP** (Internet Printing Protocol): IPP Gateway	BOTH
636	636	636	**LDAP Server Port SSL**	OUT
2192	2192	2192	**License daemon/server**	BOTH Local only
N/A	N/A	2193	**InfoPrint Manager DPF**	IN
2194	2194	2194	**InfoPrint Manager LDAP Caching Service**	IN
2501	2501	2501	**Legacy InfoPrint printer PCL/PS**	OUT

Port IPM/ AIX	Port IPM/ Linux	Port IPM/ WIN	Description	Port Type I/O
			Note	
			This port is used for the following printers:	
			• InfoPrint 2060ES	
			• InfoPrint Color 2065	
			• InfoPrint 2075ES	
			• InfoPrint Color 2075 MFP	
			• InfoPrint 2085	
			• InfoPrint 2090ES	
			• InfoPrint 2105	
			• InfoPrint 2105ES	
			• InfoPrint 2190	
			• InfoPrint 2210	
			• InfoPrint 2235	
5001	5001	5001	**IPDS printer port** (PSF TCP/IP printer default)	OUT
5002	5002	5002	**IPDS printer port** (for the first engine of a dual-engine printer)	OUT
5003	5003	5003	**IPDS printer port** (for the second engine of a dual-engine printer)	OUT
5157	5157	5157	**Select's Notification Window**	OUT
5511-5520	5511-5520	5511-5520	**InfoPrint Manager inter-server communication ports** (generated by pdinitports, viewed by fstshow -o)	BOTH
6874	6874	6874 6876-6877	**InfoPrint Manager server communication default** (PD_SOCKET) **Note** 1. Ports are configurable with user specific values. 2. Initial ports. Additional pdservers on the same machine require additional sets of ports.	IN
6875	6875	6875	**GUI notification port**	OUT
8200	8200	8200	**Notification server**	OUT
8250	8250	8250	**apped transform daemon** (PDF transform daemon)	BOTH
8251	8251	8251	**ps2afpd transform daemon** (PostScript and PDF transform daemon)	BOTH
8252	8252	8252	**ps2afpd transform daemon** (PostScript and PDF transform daemon)	BOTH
8253	8253	8253	**pcl2afpd transform daemon**	BOTH
8254	8254	8254	**agspdld transform daemon**	BOTH
9100	9100	9100	**RAW printer PCL/PS** (pioinfo, piorpdm default)	OUT

Port IPM/ AIX	Port IPM/ Linux	Port IPM/ WIN	Description	Port Type I/O
9600	9600	9600	**Printer controlled printer sharing** (IPDS printer shared with non-IPDS as well)	OUT
14080	14080	14080	**HTTP** port for web applications (IPMNX, WEB GUI)	IN
14443	14443	14443	**HTTPS** port for web applications (IPMNX, WEB GUI)	IN
14005	14005	14005	**Web server shutdown port**	BOTH Local only

InfoPrint Manager Transform Feature ports

Port IPM/ AIX	Port IPM/ Linux	Port IPM/ WIN	Description	Port Type I/O
NA	6984	6984	**InfoPrint Manager Transform Feature**	BOTH
NA	6985	6985	**InfoPrint Manager Transform Feature**	BOTH Local only
NA	6986	6986	**InfoPrint Manager Transform Feature**	BOTH
NA	6988-6990	6988-6990	**InfoPrint Manager Transform Feature** The compute node \<N\> uses the port 6988+\<N\>.	BOTH Local only
16080	16080	16080	**InfoPrint Manager Transform Feature web application**	IN

Accessibility

Ricoh strives to provide products with usable access for everyone, regardless of age or ability. For more information about the commitment that we have made to accessibility, see: https://www.ricoh-usa.com/en/about-us/corporate-responsibility-and-environmental-sustainability/accessibility.

Accessibility features

Accessibility features help users who have disabilities, such as restricted mobility or limited vision, use information technology products successfully.

The major accessibility features in this product let you:

• Use screen readers, screen magnifiers, and other assistive technologies.

• Use a keyboard instead of a mouse.

• Change attributes such as volume, color, contrast, and font size.

In addition, the information center and the publications for the product are in an accessible format.

Keyboard navigation

This product uses standard Microsoft Windows navigation keys.

Glossary

This glossary defines technical terms and abbreviations used in InfoPrint Manager.

Special Characters

.Guidefaults file

> A file created by InfoPrint in the home directory of a person using the InfoPrint GUI. InfoPrint uses this file to save and reference information about the servers you are monitoring and the windows you are working in.

A

Access Control List (ACL)

> In computer security, a collection of all access rights for one object.

ACL

> Access Control List.

acl editor

> A command line interface that lets you view, add, update, and delete access authorization records in an ACL.

action

> In the InfoPrint GUI, an icon that represents an operation that you can perform on an InfoPrint object. You drag and drop the action onto an object to initiate the operation for that object. For example, using the `Enable` action to enable a disabled actual destination.

actual destination

> In InfoPrint, an object that represents the output device that performs the printing or transmission function. See *email destination*; see also *physical printer*, *printer device*; contrast with *logical destination*.

additive color system

> A system that reproduces an image by mixing (adding) appropriate quantities of red, green, and blue light (the additive primary colors) to create all other colors of light, either direct or transmitted. When the additive primaries are superimposed on one another, they create white light. Contrast with *subtractive color system*.

administrator

> In InfoPrint, the person who creates and manages one or more components of a printing system, such as servers and actual destinations. By default, InfoPrint gives administrators authorization to perform some InfoPrint operations and to access certain information that is not available to the operators or job submitters.

Adobe Acrobat

An Adobe software program that provides instant access to documents in their original format, independent of computer platform. With the Adobe Reader, you can view, navigate, print, and present any Portable Document Format (.pdf) file.

Adobe PageMaker

A desktop publishing program that produces PostScript documents.

Adobe PostScript Raster to Image Transform (RIP)

See *raster image processor (RIP)*.

ADSM/6000

Advanced Distributed Storage Manager.

Advanced Distributed Storage Manager (ADSM/6000)

A program that provides storage management for archived files.

Advanced Function Common Control Unit (AFCCU)

A RISC-based control unit with code common to all printers that use the AFCCU.

Advanced Function Presentation (AFP)

A set of licensed programs, together with user applications, that use the all-points-addressable concept to print data on a wide variety of printers or to display data on a wide variety of display devices. AFP includes creating, formatting, archiving, retrieving, viewing, distributing, and printing information.

Advanced Function Presentation data stream (AFP data stream)

The printer data stream used for printing AFP data. The AFP data stream includes composed text, page segments, electronic overlays, form definitions, and fonts downloaded from the operating system to the printer.

A presentation data stream that is processed in AFP environments. The AFP data stream includes MO:DCA-P-based data streams.

Advanced Interactive Executive (AIX)

An operating system used with pSeries computers. The AIX operating system is IBM's implementation of the UNIX operating system.

AFCCU

Advanced Function Common Control Unit.

AFP

Advanced Function Presentation.

AFP data stream

Advanced Function Presentation data stream.

ainbe

The printer input/output backend program used by the PSF DSS to send jobs to printer devices. Depending on the incoming data stream of the job, the PSF DSS might have transformed the data stream of the job before the backend program sending it to the printer device.

AIX

Advanced Interactive Executive.

AIX-attached printer

A printer device, attached to an pSeries computer through the network or through a serial or parallel port that receives jobs from an AIX print queue.

In InfoPrint, a PSF physical printer that represents an AIX-attached printer device. See also *direct-attached printer*, *TCP/IP-attached printer*, *upload-TCP/IP-attached printer*.

AIX destination support system

In InfoPrint, the destination support system that communicates with the standard AIX print backend (`piobe`), or with certain variations of the `rembak` print backend, to print jobs.

AIX physical printer

In InfoPrint, the object representing a printer device that uses the AIX destination support system.

aliasing

In a digitized image, the creation of diagonal lines by combining short horizontal and vertical line segments that approximate the path of the desired line.

all-points-addressability (APA)

The capability to address, reference, and position text, overlays, and images at any defined point of the printable area of the paper or display medium.

alphameric

Synonym for *alphanumeric*.

alphanumeric

Pertaining to a character set containing letters, digits, and other symbols such as punctuation marks. Synonymous with *alphameric*.

AMPV

Average monthly print volume.

analog

Pertaining to a continuous variable sampling of information between two points that achieves an even, smooth transition of photographic material.

analog color proof

An off-press color proof made from separation films.

anti-aliasing

The rendering of hard-edged objects so that they blend smoothly into the background. PhotoShop offers anti-aliasing when rasterizing an EPS file.

Removing the jagged "stairstep" quality in diagonal lines produced on a computer screen by aliasing. This removal is effected by creating less densely shaded fields parallel to the diagonal line.

APA

All-points-addressability.

API

Application Program Interface.

Application Program Interface (API)

The call interface between a client program and the procedures that implement the printing system, as defined by the specification. Clients use the API to access servers. (P)

architecture

The set of rules and conventions that govern the creation and control of data types such as text, image, graphics, font, color, audio, bar code, and multimedia.

archiving

The transfer of digital information from an online system onto floppy disk, compact disc, or other media for offline storage. The original copy is deleted from the online system. See also *retrieval*.

array inkjet

An ordered collection of multiple print heads used in an inkjet printer.

ASCII

American National Standard Code for Information Exchange. The standard code, using a coded character set consisting of 7–bit coded characters (8 bits including a parity check). The ASCII code is used for information exchange among data processing systems, data communications systems, and associated equipment. The ASCII character set includes control characters and graphic characters.

asynchronous

Pertaining to two or more processes that do not depend upon the occurrence of specific events, such as common timing signals. (T)

In InfoPrint, occurring without a regular or predictable time relationship to a specified action. Contrast with *synchronous*.

attachment type

Defines the method by which a printer device is attached to the AIX system from which it receives data. See *AIX-attached printer*, *direct-attached printer*, *TCP/IP-attached printer*, and *upload-TCP/IP-attached printer*.

attribute

A defined characteristic of an object, such as the number of copies required of a job, or the document formats accepted by an actual destination.

attribute name

A string that identifies an attribute. Typically, in InfoPrint attribute names consist of two or more words separated by hyphens.

attribute value

The element of an attribute that specifies the characteristics relating to the attribute.

authorization

In computer security, verification of the eligibility of a user to access an object.

authorized user

A person with the appropriate permissions to access an object or to issue a command.

automatic recovery

A function of printer logic that permits the printer to reprint a job if the job is misprinted or damaged or if a component has failed.

auxiliary sheet

In InfoPrint, an object that represents a particular sheet of paper, blank or otherwise, that can precede a job, separate documents in a job, or follow a job.

auxiliary-sheet selections

A particular combination of start, separator, and end sheets that print with jobs on a particular printer device.

B

backend

In AIX or Linux, the program that is invoked by the `qdaemon` process (AIX) or CUPS printing system (Linux) to run a print or batch job. Synonymous with *backend program*.

backend program

Synonym for *backend*.

backlog

In InfoPrint, the amount of time calculated by InfoPrint that is required to print all of the jobs currently in a queue.

backspace

In InfoPrint, the action used to back up and reprint pages in a job.

bar code

A code representing characters by sets of parallel bars of varying thickness and separation that are read optically by transverse scanning.

An array of parallel rectangular bars and spaces that together represent data elements or characters in a particular symbology. The bars and spaces are arranged in a predetermined pattern following unambiguous rules defined by the symbology.

BCOCA

Bar Code Object Content Architecture.

Bezier curves

A method of defining curves using anchor points, control handles, and tangent lines. The PostScript path passes through anchor points. Its approach direction is along the tangent lines that are controlled by the control handles. Many personal computer programs use this drawing method. Type 1 PostScript fonts are defined using Bezier curves.

binding

The cover and materials that hold a book together. See *edition binding*, *perfect binding*, *spiral binding*, *wire-o binding*.

The process of applying the binding to a book.

In InfoPrint, assigning a job to an actual destination. See *early binding*, *late binding*.

bitmapped

Pertaining to an image formed by a rectangular grid of pixels. Each pixel is assigned a value to denote its color. One-bit images are black and white; 8–bit images have 256 colors (or grays); 24–bit images have full color. CMYK images have 32–bits per pixel to encode 256 levels in each of four channels. Bitmapped images are also called raster images.

bleed

An extra amount of printed image that extends beyond the trim edge of the sheet. Bleed ensures that no white gap appears at the edge of the sheet.

boot

To prepare a computer for operating by loading an operating system.

BSD

Berkeley Software Distribution.

BSD destination support system

In InfoPrint, the destination support system that generates a print command string that the shell runs to print jobs.

BSD physical printer

In InfoPrint, the object representing a printer device that uses the BSD destination support system.

burn

In platemaking, an exposure. Burn is named because of the extremely bright ultraviolet lamps used to transfer images from film to plate.

In photography, to lengthen the final exposure time to increase the final density of print.

C

CDE

Common Desktop Environment.

child

See *parent/child relationship*.

choke

In color printing, an area whose dimensions have been reduced to avoid overlapping another color. Contrast with *spread*.

class

Synonym for *object class*.

clean

In InfoPrint, an action used to remove all the jobs from specified servers, actual destinations, or queues, or to remove all the jobs submitted to specified logical destinations.

CLI

Command Line Interface.

client

In InfoPrint, the component of the print system that assembles a print request and submits the request to a server. The client generates the local ID numbers for each job, submits the jobs to the servers, and keeps track of where each user's jobs have been submitted.

CMR

Color Management Resource.

CMY

Cyan, magenta, yellow.

CMYK

Cyan, magenta, yellow, black.

collator

In some printers a special-purpose hard drive disk array used to store RIPped files and later transfer them to the LED print heads for imaging.

color balance

The relative levels of cyan, magenta, and yellow channels in an image to produce accurate color rendition of an original image.

color correction

The adjustment of the color balance in an image to produce accurate color rendition of an original image. Color correction is used for two- or three-spot-color jobs.

color key

A color proof similar to Cromalin, but typically not laminated and not necessarily accurate in color. Color keys are used to verify that breaks or color assignments and traps have been made accurately.

Color management resource

Color management resource (CMR) is an architected resource that is used to carry all of the color management information required to render a print file, document, group of pages or sheets, page, or data object with color fidelity.

Command Line Interface (CLI)

A type of user interface where commands are specified on the command line. Contrast with *Graphical User Interface*.

Common Desktop Environment (CDE)

A graphical user interface running on a UNIX operating system.

complex attribute

In InfoPrint, an attribute that can have multiple values with each value containing multiple components.

constant data

Data that does not change between copies of a document and that is merged with variable data to produce personalized documents. For example, a form letter (constant data) can be merged with a customer's name and address (variable data).

contextual help

A type of online help that provides specific information about each selectable object, menu choice, notebook tab, field, control, and pushbutton in a window.

control strip

A strip of information that can be attached to a print job and used to measure registration and density.

Cromalin

The Dupont color proofing system. Four layers (CMYK) of light-sensitive material are exposed through final halftone negative films, then laminated together on an opaque backing to produce a color- and trap-accurate final proof showing actual halftone dot structure. Cromalin is sometimes called an analog proof.

crop

To remove unwanted areas of an image, usually indicated by crop marks on the original.

CTS

Cutter-trimmer-stacker.

CUPS

Common Unix Printing System is a modular printing system for Unix-like computer operating systems which allows a computer to act as a print server. A computer running CUPS is a host that can accept print jobs from client computers, process them, and send them to the appropriate printer.

CUPS destination support system

In InfoPrint, the destination support system that communicates with the standard LINUX print system (CUPS) and that uses InfoPrint Manager **pioinfo** backend, InfoPrint Manager **piorpdm** backend for Ricoh printers or other print backends to print jobs.

cutter-trimmer-stacker (CTS)

A post-processing device attached to a printer device and used for paper handling.

cyan, magenta, yellow (CMY)

The subtractive primary colors.

cyan, magenta, yellow, black (CMYK)

The four basic colors used in offset printing, as opposed to the three basic colors of light: red, green, and blue. Magenta, yellow, and cyan are the subtractive primaries. Black is added to provide better density and to produce a true black.

D

daemon

A program that runs unattended to perform a standard service. Some daemons are triggered automatically to perform their tasks; others operate periodically. Daemon processes generally

provide a service that must be available at all times to more than one task or user, such as sending data to a printer.

data stream

All information (data and control commands) sent over a data link.

A continuous stream of data that has a defined format.

In InfoPrint, pertaining to the incoming format of the job and the output format required by the printer device. InfoPrint transforms the incoming format into the output format, as required. See also *document format*.

DB2*/6000

DataBase 2/6000.

deadline

In InfoPrint, a queuing technique where the next job assigned to the first position in the queue is the one whose deadline is closest. Contrast with *FIFO (first-in-first-out)*, *job-priority*, *longest-job-first*, and *shortest-job-first*.

default document

In InfoPrint, an object that represents default attribute values for a document in a job. Synonymous with *initial value document*.

default job

In InfoPrint, an object that represents default attribute values for a job. Synonymous with *initial value job*.

default object

In InfoPrint, a general term that refers either to a *default document* or a *default job*. Synonymous with *initial value object*.

default value

A value stored in the system that is used when no other value is specified.

delete

In InfoPrint, an action used to delete default objects, jobs, logical destinations, actual destinations, or queues from the server.

desktop publishing

Performing print-related activities on a personal computer, including but not limited to layout, design, photo manipulation, creating fonts, editing text, color separation, scanning, and animation.

destination

See *actual destination*, *logical destination*.

destination support system (DSS)

In InfoPrint, the programs that an actual destination uses to communicate with the output device. Synonymous with *device support system*. See *AIX destination support system*, *BSD destination support system*, *email destination support system*, and *PSF destination support system*.

device

An individual piece of equipment (hardware) that attaches to a computer, such as a printer device.

device address

The identification of an input or output device by its channel and unit number.

device driver

A file that communicates with a specific device such as a printer, disk drive, or display. An application that sends output to a device controls the actions of the device through the device driver. See *printer driver*.

device support system (DSS)

Synonym for *destination support system*.

DFE

Digital Front End

DFE destination support system

In InfoPrint Manager, the destination support system that communicates with a DFE print server driving a Ricoh printer.

DFE printer

In InfoPrint Manager, the object representing a DFE print server driving a Ricoh printer.

DFS

Distributed File Service.

digital

Pertaining to data represented by digits, sometimes with special characters and the space character.

digital color proof

An off-press color proof made from a color printer attached to a computer.

digital printing

A filmless and plateless printing process in which digital data for each page is transferred directly to a light-sensitive drum and then to paper for a final image.

direct-attached printer

A printer device, attached to an pSeries computer through the network or through a serial or parallel port.

In InfoPrint, a PSF physical printer that represents a direct-attached printer device. See also *AIX-attached printer*, *TCP/IP-attached printer*, and *upload-TCP/IP-attached printer*.

disable

In InfoPrint, an action used to stop the acceptance of jobs on destinations, queues, or servers, or to stop writing information to logs.

distributed print system

A computer system with the ability to interchange print data and controls among different computing environments with the intent of printing the data on a different system from the one where the print

request was generated. For example, in host-to-LAN distributed printing, data that is located on the host is printed on printers attached to a local area network.

dithering

A technique of filling the gap between two pixels with another pixel having an average value of the two to minimize the difference or to add detail to smooth the result.

document

In InfoPrint, an object representing a grouping of data in a job. A job can contain one or more documents. The documents in a job can differ from each other in some ways. For example, they can contain different data and can have different document formats. A document in a job can contain printable data or a resource that is not printable by itself. See *file-reference document*, *printable document*, and *resource document*.

document element

A portion of a document at least a single page in size.

document format

In InfoPrint, a document format describes the type of the data and control characters in the document, such as line data or PostScript. The format of the data determines which printer devices are capable of printing the document and whether InfoPrint must transform the format.

document identifier

A string that identifies a document in a job. It consists of a job ID followed by a period (.) and a document sequence number. For example, 12.2. Document sequence numbers are integers starting at 1.

Document Printing Application (DPA)

An ISO/IEC 10175 standard that addresses those aspects of document processing that enable users in a distributed open systems environment to send electronic documents to shared, possibly geographically-dispersed printers. InfoPrint supports the DPA standard.

document transfer method

In InfoPrint, the transfer method describes how documents are transferred to, or acquired by, servers. See *pipe-pull* and *with-request*.

document type

In InfoPrint, the document type describes the kind of data in the document. A *printable document* can only contain printable data. A *resource document* can only contain data such as fonts or form definitions that are not printable. A *file reference document* can only contain names of files entered on separate lines.

dot

The individual elements of a halftone.

dot gain

An increase in the size of a halftone dot during printing, caused by ink spreading. Generally, this value is known precisely, and the scanning and filming production process is calibrated to compensate for it. The Cromalin proofing system simulates this effect.

dots per inch (dpi)

A measure of data density per unit distance. Typical values for desktop publishing range from 200 to 300 dpi.

DPA

Document Printing Application.

DPF

Distributed Print Facility.

dpi

Dots per inch.

drag and drop

In graphical user interfaces, a procedure by which you perform actions and tasks. Using the mouse, you drag (move) an action or object icon to a new position where you want the action or task to occur.

DSS

Destination support system.

dummy

A rough paste-up or hand-drawn representation of the anticipated finished product. A dummy is used for basic design and pagination.

duplex printing

Printing on both sides of the paper. Contrast with *simplex printing (1)*.

Printing on both sides of the paper, placing output images on the media in a head-to-head format, so that the top of one image is at the same edge as the top of the next image. Contrast with *tumble duplex printing*; see also *simplex printing (2)*.

E

early binding

In InfoPrint, assigning a job to an actual destination as soon as it is accepted. Early binding permits InfoPrint to estimate the time when the job will be completed. Contrast with *late binding*.

edition binding

A type of book binding in which printed sheets are folded into 16- or 32-page signatures. Four-page endleaves are pasted on the outside of the first and last signature. The signatures are then collated by machine and sewn together using special sewing machines. Contrast with *perfect binding*, *spiral binding*, and *wire-o binding*.

electronic document

A document stored in a computer instead of printed on paper.

electronic mail

Correspondence in the form of messages sent between workstations over a network. Synonymous with *email*.

electrophotographic

Pertaining to a type of printer technology that creates an image on paper by uniformly charging the photoconductor, creating an electrostatic image on the photoconductor, attracting negatively charged toner to the discharged areas of the photoconductor, and transferring and fusing the toner to paper.

em

In composition, a unit of measurement exactly as wide and as high as the point size of the font being set. The name is derived from the fact that the letter M in early typefaces was usually cast on a square body.

email

Electronic mail.

email destination

In InfoPrint, an actual destination representing an electronic mailing system.

email destination support system

In InfoPrint, the destination support system that supports email destinations.

embellishments

Variable data added to all copies of assembled pages to make the unit appear like a whole; for example, headers, footers, a table of contents, and chapter separations.

en

In composition, exactly one-half an em.

enable

In InfoPrint, the action that makes a destination, queue, or server able to accept jobs, or a log able to accept information.

end sheet

The sheet of paper, blank or otherwise, that can follow a job. See also *auxiliary sheet*.

Enhanced X-Windows

A tool designed to permit multiple application processes to operate in multiple windows displayed on a virtual terminal. See *X-Windows*.

environment variable

Any one of a number of variables that describe the way an operating system runs and the devices it recognizes.

error log

A data set or file in a product or system where error information is stored for later access.

estimate

The professional cost analysis made by a print shop in response to a customer's request for a price quotation on a print job.

event

In InfoPrint, an occurrence in the printing system during an operation; for example, the completion of a command.

event log

In InfoPrint, a collection of messages about events that have occurred.

event notification

The notification that is sent by InfoPrint for an event.

F

Federated Authentication

A technology that grants users secure access to InfoPrint Manager relying on external identity providers (IdPs). Instead of managing separate user credentials within the InfoPrint Manager system, federated authentication allows users to log in using their existing accounts from trusted third-party services.

FIFO (first-in-first-out)

In InfoPrint, a queuing technique where the next job assigned to the first position in the queue is the job that has been in the queue for the longest time. InfoPrint processes jobs in the order in which they are received. Contrast with *deadline*, *job-priority*, *longest-job-first*, and *shortest-job-first*.

file-reference document

In InfoPrint, a file containing the names of other files, each entered on a separate line. Job submitters can specify this file for printing when they specify a document type of `file-reference`; InfoPrint prints each file listed in the reference document.

File Transfer Protocol (FTP)

In TCP/IP, the application protocol that makes it possible to transfer data to and from host computers and to use foreign hosts indirectly.

finisher

A hardware device attached to a printer that performs such operations as folding or stapling the printed pages.

finishing

In a print shop, the final operations on a printed product, such as stapling, trimming, drilling, folding, embossing, varnishing, gluing, shrink wrapping, perforating, laminating, collating, and so on.

flag

A modifier of a command that specifies the action of the command. A dash usually precedes a flag. Synonymous with *option*. See also *keyword*.

FOCA

Font object content architecture.

folder

In the InfoPrint GUI, an object that represents a container for a collection of similar objects. For example, the Retained Jobs folder contains retained jobs.

font

A family of characters of a given size and style; for example, 9-point Helvetica.

One size and one typeface in a particular type family, including letters, numerals, punctuation marks, special characters, and ligatures.

A paired character set and code page that can be used together for printing a string of text characters. A double-byte font can consist of multiple pairs of character sets and code pages.

form definition

A resource object used by InfoPrint that defines the characteristics of the form or printed media, which include: overlays to be used, the paper source (for cut-sheet printers), duplex printing, text suppression, and the position of composed-text data on the form.

forward space

In InfoPrint, the action used to move ahead and skip the printing of a specified number of pages in a job.

FPO

Low-quality (sometimes photographic) images placed in a dummy to represent final images. Desktop publishing software produces images as display-screen resolution FPOs.

front panel

In the CDE, a workspace area containing controls that represent various tasks you can perform and workspace switches.

FST

Files and Sockets Transport is the local security implementation for InfoPrint Manager. It uses the local namespace for user credentials, and it is a lightweight security protocol.

FTP

File Transfer Protocol.

G

GCR

Gray component replacement.

GIF

Graphics Interchange Format.

global change

In the InfoPrint GUI, an action used to make changes to one or more attributes of several objects at once. You can also perform the same action on several objects of the same object class at the same time; for example, disabling two or more actual destinations at the same time.

global character

A character or set of characters used to specify an unknown number or set of characters in a search string. In InfoPrint, a global character is represented by an asterisk (*).

global ID

Global job identifier.

global job identifier

An unambiguous job identifier. In InfoPrint, it is represented as the name of the server managing the job followed by a colon (:) and a generated integer. This ID uniquely identifies the job in the InfoPrint server.

glyph

An image, usually of a character, in a font.

GOCA

Graphics object content architecture.

graphic character

A visual representation of a character, other than a control character, that is normally produced by writing, printing, or displaying.

Graphical User Interface (GUI)

A type of user interface that takes advantage of a high-resolution monitor and includes a combination of graphics to implement an object-action paradigm, the use of pointing devices, menu bars, overlapping windows, and icons. Contrast with *Command Line Interface*.

Graphics Interchange Format (GIF)

A compressed graphics format widely used on the Internet.

gray component replacement (GCR)

Synonym for *under color removal (UCR)*.

gray scale

A strip of standard gray tones, ranging from white to black, placed at the side of the original copy during photography to measure the tonal range and contrast obtained.

GUI

Graphical User Interface.

gutter

The blank area or inner margin from the printing area to the binding.

H

halftone

A printing method that simulates continuous-tone shading using dots of varying sizes laid out on a rectangular grid. Larger dots simulate darker tones and smaller dots simulate lighter tones. Typical grid spacings are 85 lines per inch (lpi) (newspaper), 133 lpi (low end), 150 lpi (midrange), and 175+ lpi (high quality).

help

In the InfoPrint GUI, an action used to display the online help for a specific template, object, action, button, control, or area in an application window.

The name of a button used to access the online help.

hold

An indication determined by the **job-hold** attribute that is used to keep a job in the queue and prevent InfoPrint from scheduling it.

hostname

The name given to an AIX system.

hot folder

A workstation directory where users copy jobs to submit them to print.

hypertext

A way of presenting information online with connections between one piece of information and another. These connections are called hypertext links. See also *hypertext link*.

hypertext link

A connection between one piece of information and another. Selecting a link displays the target piece of information.

I

icon

A graphic symbol displayed on a screen that a user can click to invoke a function or software application.

image

Toned and untoned pels arranged in a pattern.

image data

Rectangular arrays of raster information that define an image.

imagesetter

A high resolution (1270–3600+ dpi) printer that uses an Argon (green) laser to write to film using digital input. Imagesetting is the step before Cromalin proofing and platemaking.

imposition

The process of arranging pages on a press sheet to ensure the correct order during final cutting, folding, and binding. Electronic imposition builds press sheets automatically during the RIP and outputs film formatted for immediate use in platemaking.

InfoPrint

A solution of software and hardware products that can supplement or replace the offset presses and copiers in print shops with high-quality, non-impact, black and white or process color printers. InfoPrint takes documents from creation to the published, kitted, and shipped product.

In InfoPrint software publications, InfoPrint Manager for AIX or any of its components.

InfoPrint Manager for AIX

The software component of InfoPrint. InfoPrint Manager for AIX handles the scheduling, archiving, retrieving, and assembly of a print job and its related resource files. It also tracks the finishing and packaging of the printed product.

InfoPrint Manager for AIX is based on Palladium technology developed at MIT/Project Athena. It conforms to the ISO DPA and POSIX standards.

InfoPrint Network

The local area network running TCP/IP protocol that InfoPrint uses to communicate among servers, clients, and output devices.

InfoPrint Select

The component of InfoPrint Manager for AIX that lets you submit jobs from a Windows workstation.

InfoPrint Submit Express

The component of InfoPrint Manager that lets you submit jobs with a job ticket from a Windows or Macintosh workstation.

InfoPrint 20

A black and white, large-format, cut-sheet, workgroup laser printer with optional duplexing and 600-dpi resolution.

InfoPrint 60

A duplex, black and white, cut-sheet printer with 600-dpi resolution.

InfoPrint 62

A non-impact, continuous-forms printer that runs at a maximum of 62 impressions-per-minute (depending on forms size), and is factory set to run at either 240 or 300 dpi on a maximum paper size of 370.8 mm (14.6 in.).

InfoPrint 4000

A duplex, black and white, continuous-forms printer with 600-dpi resolution.

initial value document

Synonym for *default document*.

initial value job

Synonym for *default job*.

initial value object

Synonym for *default object*.

initially settable attribute

An attribute whose value can be established when an object is created but cannot be subsequently set or modified. See also *resettable attribute*; contrast with *non-settable attribute*.

input focus

The area of a window where user interaction is possible from either the keyboard or the mouse.

input tray

For a printer device, the container that holds the medium upon which the printer prints its output.

Intelligent Printer Data Stream (IPDS)

An all-points-addressable data stream that enables users to position text, images, and graphics at any defined point on a printed page.

Information that the host sends to IPDS printers. This information generally contains basic formatting, error recovery, and character data and enables the printers to make decisions.

An architected host-to-printer data stream that contains both data (text, image, graphics, and bar codes) and controls defining how the data is to be presented. IPDS provides a device-independent interface for controlling and managing all-points-addressable (APA) printers.

International Organization for Standardization (ISO)

An organization of national standards bodies from various countries established to promote development standards to facilitate international exchange of goods and services, and develop cooperation in intellectual, scientific, technological, and economic activity.

Internet

A wide area network connecting thousands of disparate networks in industry, education, government, and research. The Internet network uses TCP/IP as the protocol for sending information.

Internet Protocol

The set of rules that determines how to route data from its source to its destination in an internet environment.

intervening jobs

In InfoPrint, the number of jobs in a queue that are scheduled to print before the job in question.

IOCA

Image object content architecture.

IP address

The IPv4 or IPv6 address.

IPDS

Intelligent Printer Data Stream.

ISO

International Organization for Standardization.

J

job

In InfoPrint, an object that represents a request to print or send one or more documents together in a single session. A job includes the data to be printed or sent and resources such as fonts, images, and overlays. Depending on how it was submitted, it can also include a job ticket. Synonymous with *job bundle* and *print job*.

job bundle

Synonym for *job*.

job data

The page descriptions, merge data, and embellishments that compose a document in a job, either directly or by reference.

job ID

A local or a global identifier that identifies a job to a job submitter, administrator, operator, or InfoPrint. See *local job identifier*, *global job identifier*.

job-priority

In InfoPrint, a queuing technique where the next job assigned to the first position in the queue is the one with the highest priority. Contrast with *deadline*, *FIFO (first-in-first-out)*, *longest-job-first*, and *shortest-job-first*.

job submitter

In InfoPrint, the person who submits jobs for printing. Often, this person is an application programmer who maintains applications that generate data to be printed.

job ticket

The customer's hardcopy or electronic instructions listing all the variables describing a print job, either directly or by reference. The print shop can add specifications to the job ticket and can print the job ticket.

Joint Photographic Experts Group (JPEG)

A compressed graphics format widely used on the Internet.

JPEG

Joint Photographic Experts Group.

K

kerning

In typesetting, adjusting the relative spacing of two characters to improve their appearance and readability. Kerning pairs are specific sets of characters with built-in relative spacing. Some typefaces have as many as 100 kerning pairs.

keyword

A name or symbol that identifies a parameter.

Part of a command operand that consists of a specific character string, such as `DSNAME=`.

kitting

In a print shop, packaging the completed published work with attendant binders, tabs, diskettes, and other equipment or information, before shipping the finished product.

L

LAN

Local Area Network.

laser (light amplification by stimulated emission of radiation)

In InfoPrint printers, a device that emits a beam of coherent light that forms the image on the photoconductor that is subsequently transferred to the paper.

late binding

In InfoPrint, waiting to assign a job to an actual destination until it is about to be processed. Late binding permits InfoPrint to route a job to the first suitable actual destination that becomes available. Contrast with *early binding*.

LDAP

Lightweight Directory Access Protocol is the network security implementation for InfoPrint Manager. It uses an LDAP or Active Directory server for user credentials, and it offers a unified security implementation in a customer environment.

LED

Light-emitting diode.

light-emitting diode (LED)

The imaging device element for electrophotographic print units.

lines per inch (lpi)

A measure of the density of the grid used to space halftone dots. Typical grid spacings are 85 lpi (newspaper), 133 lpi (low end), 150 lpi (midrange), and 175+ lpi (high quality).

Linux

Linux is an open-source operating system modeled on UNIX. There are multiple distributions available, InfoPrint Manager is only supported on Red Hat Enterprise Linux (RHEL) and SUSE Linux Enterprise Server (SLES).

Local Area Network (LAN)

A computer network at one location that consisting of devices connected to one another and communicating. This network can also be connected to a larger network.

local ID

Local job identifier.

local job identifier

In InfoPrint, a job identifier automatically generated by the server, identifying the job to the person who submitted it. InfoPrint maps a local job ID to a global job ID.

locale

The human language and character set of information presented to a user.

In InfoPrint, the language InfoPrint uses when sending notification and error messages or displaying the InfoPrint graphical user interfaces.

log

A collection of messages or message segments added to a file for accounting or data collection purposes.

To record messages in a file.

logical destination

In InfoPrint, an object to which users submit their jobs. The logical destination routes jobs to one or more actual destinations representing output devices such as printers, or electronic mail systems. See also *logical printer*; contrast with *actual destination*.

logical printer

In InfoPrint, a type of logical destination. The logical printer routes jobs to one or more physical printers representing printing devices.

logical unit (LU)

A type of network accessible unit that enables end users to gain access to network resources and communicate with each other.

logical unit (LU) 6.2

A type of logical unit that supports general communication between programs in a distributed processing environment. LU 6.2 is characterized by (a) a peer relationship between session partners, (b) efficient utilization of a session for multiple transactions, (c) comprehensive end-to-end error processing, and (d) a generic application program interface (API) consisting of structured verbs that are mapped into a product implementation.

longest-job-first

In InfoPrint, a queuing technique where the next job assigned to the first position in the queue is the longest job in the queue. Contrast with *deadline*, *FIFO (first-in-first-out)*, *job-priority*, and *shortest-job-first*.

lpi

Lines per inch.

LU

Logical unit.

M

magnetic ink character recognition (MICR)

Identification of characters printed with ink that contains particles of magnetic material.

mainframe processor

A functional unit that interprets and executes instructions in a large computer to which other computers are connected so that they can share the facilities the mainframe provides.

makeready

All the setup work involved in preparing a press for a print run.

manage

In the InfoPrint GUI, the action used to put an object into a mode where its icon reflects changes of status.

mechanical

A camera-ready layout. The mechanical can consist of multiple sheets or overlays for each spot or process color used. Final images, if not stripped in later, should be at final size, cropped and screened to the correct line frequency.

medium

In InfoPrint, an object representing the physical material upon which a job is printed.

merge data

Data that is unique to each copy of a document and that customizes the document; for example, serial numbers or mailing information. Merge data is typically a small percentage of the total data in the document.

message catalog

A file of all the possible messages than can display during the processing of an application.

MICR

Magnetic ink character recognition.

Mixed Object Document Content Architecture (MO:DCA)

An architected, device-independent data stream for interchanging documents.

MO:DCA-P

Mixed Object Document Content Architecture Presentation.

modify

In InfoPrint, an action used to modify the values of attributes in the object attributes notebook.

moire

Undesirable interference patterns caused by two overprinting halftone screens with incorrect halftone dot angles.

monospaced

In typesetting, pertaining to a typeface in which all the characters have equal widths. Monospaced typefaces are useful for tabulating figures.

Multiple Virtual Storage (MVS)

An operating system developed by IBM. The design of MVS incorporates an addressing architecture that provides a unique address space to each job in the system.

MVS

Multiple Virtual Storage.

N

N_UP

Pertaining to the number of forms placed together in a layout. Typical layouts are 2_UP, 4_UP, 8_UP, 16_UP, and so on. N_UP printing is done to use the maximum area of the print sheet.

namespace

A global name repository available to all utilities and API procedures. The namespace contains mappings of object names to other related objects. For example, the namespace provides the mapping of a logical destination to the server in which it is located.

Network File System (NFS)

A protocol developed by Sun Microsystems that uses Internet Protocol to allow a set of cooperating computers to access each other's file systems as if they were local.

newline options

The different ways in which the printer determines how lines are delimited in a document data stream.

NFS

Network File System.

non-process-runout (NPRO)

A printer function that moves the last printed sheet to the stacker of the printer device.

non-settable attribute

An attribute that is neither initially settable nor resettable. The values for these attributes are controlled by InfoPrint. Contrast with *initially settable attribute* and *resettable attribute*.

notification

The act of reporting the occurrence of events.

In InfoPrint, notification of events appears as messages in event logs or messages sent to administrators, operators, and job submitters. In the InfoPrint GUI, notification of events also appears as changes to the appearance of icons.

notification-profile

In InfoPrint, an attribute associated with an object that contains information designating the people to whom InfoPrint sends notification about events for that object, which event information it sends, and how it sends the information.

NPRO

Non-process-runout.

O

object

A collection of attributes that represent a physical or logical entity in the print system. For example, a specific printer device is represented by an actual destination (physical printer) object. An object is identified by its object name. Objects are grouped into classes. See also *object class*.

object class

A group of objects that share a common definition and therefore share common properties, operations, and behavior as defined by their attributes. For example, all InfoPrint queue objects are in the same object class and each queue has the same set of queue attributes. However, the values for those attributes can differ for each queue in the queue object class.

Object Identifier (OID)

In architecture, a notation that assigns a globally unambiguous identifier to an object or a document component. The notation is defined in international standard ISO.IEC 8824(E).

object name

The alphanumeric term that identifies an object.

object state

The state of an object indicates its availability and readiness for performing its functions. An object can be in one of a number of states such as ready, busy, or unknown.

OCR

Optical character recognition.

octet

A byte that consists of eight binary digits (bits).

offset stacking

In certain printer devices, a function that allows the printer to offset the printed output pages for easy separation of the jobs.

OID

Object Identifier.

open destinations window

In the InfoPrint GUI, the action used to open a new application window displaying the logical and actual destinations associated with a queue.

Open Prepress Interface (OPI)

An industry standard for replacing low-resolution images in review documents with high-resolution images needed for high-quality final output.

Open Software Foundation (OSF)

A nonprofit research and development organization created by a consortium of companies that work together to develop software in the open systems market.

OpenType font (OTF)

An extension of the TrueType font format that adds:

- Support for PostScript outlines

- Better support for international character sets

- Broader support for advanced typographic control

open window

In the InfoPrint GUI, the action used to open a new application window representing one or more objects displayed in the currently open application window.

operation

An action performed on one or more data items.

operator

In InfoPrint, the person responsible for printer devices. Also, this person performs a subset of tasks for InfoPrint queues and actual destinations and performs some job-related tasks.

OPI

Open Prepress Interface.

optical character recognition (OCR)

Conversion of scanned text to editable ASCII characters.

option

A modifier of a command that specifies the action of the command. A dash usually precedes an option. Synonymous with *flag*. See also *keyword*.

orphan logical destination

In the InfoPrint GUI, an object that represents a logical destination that is not associated with an existing queue.

orphan logical printer

In the InfoPrint GUI, an object that represents a logical printer that is not associated with an existing queue.

OSF

Open Software Foundation.

overlay

A collection of constant data, such as lines, shading, text, boxes, or logos, that is electronically composed in the host processor and stored in a library, and that can be merged with variable data during printing.

OTF

OpenType font.

P

PAC

Privilege Attribute Certificate.

page definition

A resource that contains the formatting controls for line data.

In InfoPrint, a resource that defines the rules of transforming line data into composed pages and text controls.

page segment

A resource that contains composed text and images, which are prepared before formatting and included during printing.

Palladium

A distributed print system developed at MIT/Project Athena with participation from Digital Equipment Corporation (DEC), International Business Machines (IBM), and Hewlett-Packard (HP). It is a reference implementation for the OSI Document Printing Architecture (DPA) standard, ISO/IEC 10175.

pane

In the Work Area of the InfoPrint Manager Administration GUI, an area containing a group of objects of a specific type, such as an actual destinations pane.

parent/child relationship

In InfoPrint, servers, queues, and destinations are related to one another in a parent/child relationship. For example, a server is the parent of all the queues that reside in that server, and these queues are its children.

pass through

In InfoPrint, referring to options submitted with a job that are used by the device driver, but not InfoPrint. InfoPrint does not process or validate this information; it passes it along to the device driver. See *printer driver*.

path

The route used to locate files; the storage location of a file. A fully qualified path lists the drive identifier (if any), directory name, subdirectory name (if any), and file name with the associated extension.

pause

In InfoPrint, the action used to temporarily halt the printing or transmission of jobs on actual destinations or the distribution of jobs from servers or queues.

pdcreate

In InfoPrint, the command used to create a new object and set its attributes to specified values.

PDF

Portable Document Format.

Printer description file.

pdmsg

In InfoPrint, a utility used to display information about a message.

pdpr

In InfoPrint, the command used to create and submit a job, consisting of one or more documents, to a server for printing or transmission.

perfect binding

A type of book binding in which the pages are held together with flexible adhesive. Contrast with *edition binding*, *spiral binding*, and *wire-o binding*.

permissions

In AIX, codes that determine who can access a file and what operations they can perform on the file.

physical printer

In InfoPrint, a type of actual destination that represents a printer device. See also *printer device*.

piobe

The standard printer input/output backend program used by AIX for printing. See also *ainbe*.

pipe-pull

In InfoPrint, a document transfer method where InfoPrint saves the documents in a file and transfers the address of the file to the server. InfoPrint transfers the file to the server upon the request from the server. This is an efficient transfer method for large jobs and is the default transfer method at job submission. Contrast with *with-request*.

plex

A document or actual destination attribute used to define the placement of output images on the page. See the plex values *simplex* and *tumble*.

Portable Document Format (PDF)

An Adobe PostScript data format that can be viewed or printed.

Portable Operating System Interface for Computer Environments (POSIX)

An Institute of Electrical and Electronics Engineers (IEEE) standard for computer operating systems.

POSIX

Portable Operating System Interface for Computer Environments.

PostScript

Adobe's page description language. PostScript has become a standard for graphic design and layout software. PostScript files can contain both vector and raster data. Fonts are described using PostScript coding. Many desktop publishing systems produce PostScript data as their output data stream.

PostScript printer description (PPD)

A file that contains options for printing PostScript data on various printer devices.

PPD

PostScript printer description.

Prefix lengths

Identify a range of IPv6 addresses that are on the same network.

preflight

To assess all resources for a job before the actual print run.

prepress

Work done in the print shop before printing a job, such as preparing data and art, page imposition, color retouching, electronic editing, and page layout.

print database

The set of files on disk that provide a permanent repository for the attributes of all print objects, such as logical destinations, queues, and actual destinations.

print job

Synonym for *job*.

Print Quality Enhancement (PQE)

A printer facility that provides edge smoothing along diagonal lines, fine fidelity protection, and independent boldness control.

Print Services Facility (PSF)

Any of several programs, including PSF for AIX, PSF/MVS, PSF/VM, and PSF/VSE, that produce printer commands from the data sent to them.

print system

A group of one or more print servers and one or more printing devices, which might or might not be located in the same geographical area. The components of a print system are assumed to be interconnected in some manner, providing at least one network interface to print clients, and acting synergistically to supply the defined document print service. (D)

printable document

In InfoPrint, an object that represents text or data to be printed by a job. Contrast with *resource document*.

printer description file (PDF)

A file that contains options for printing PostScript data on a specific printer device.

printer device

The physical output device that performs the printing function. See also *physical printer*.

printer driver

A file that describes the physical characteristics of a printer or other peripheral device. This file is used to convert graphics and text into device-specific data at the time of printing or plotting. Synonymous with *device driver*.

priority

In InfoPrint, a number assigned to a job that determines its precedence in being printed. Jobs with higher priority numbers are handled before jobs with lower priority numbers.

process color

Color made up of CMYK links simulating a specified color. This is the traditional method of reproducing continuous tone color images (color separations). Because of the nature of color inks, certain inks do not reproduce well.

processor

In a computer, a functional unit that interprets and executes instructions. A processor consists of at least an instruction control unit and an arithmetic and logic unit. (T)

promote

In InfoPrint, the action used to move a job to the beginning of the queue so that it will print on the next available printer that can handle that job.

protocol

A set of semantic and syntactic rules that determines the behavior of functional units in achieving communication.

pSeries

A family of workstations and servers based on IBM's POWER architecture. They are primarily designed for running multi-user numerical computing applications that use the AIX operating system.

PSF

Print Services Facility.

PSF destination support system

In InfoPrint, the destination support system that communicates with PSF for AIX to print jobs.

PSF physical printer

In InfoPrint, the object representing a printer device that uses the PSF destination support system.

Q

QuarkXpress

A desktop publishing system produced by Quark, Incorporated.

queue

In InfoPrint, an object that manages a collection of jobs that are waiting to print. A queue receives jobs from one or more logical destinations and sends jobs to one or more actual destinations.

A line or list formed by items waiting for processing.

R

raster

A pattern of dots defined at varying data depths. Black and white images are one-bit (on/off); grayscale images are 8-bit (256 levels); RGB images are 24-bit; CMYK images are 32-bit.

raster image processor (RIP)

A processor in which a PostScript data stream is converted into dot patterns that are transferred to the final print medium. InfoPrint uses an Adobe RIP to convert PostScript to IPDS for such printers as the InfoPrint 4000 and InfoPrint 60.

rc.pd

In InfoPrint, a utility used to start the InfoPrint servers listed in the **/etc/pd.servers** file.

read-only

In InfoPrint, describes an attribute value that cannot be set by the user but can change based on other activity.

ready

A state in which an object is ready and able to perform tasks.

An available resource, such as a value of the `media-ready` attribute. Contrast with *supported*.

red, green, blue (RGB)

The colors of CRT display phosphors. RGB images are for screen display only. They must be converted to CMYK images before printing.

registration

The accuracy of printing on paper relative to the edges of the paper.

The accuracy of printing a single color (cyan, magenta, or yellow) relative to black.

The accuracy of printing on one side of a page relative to printing on the reverse side of the page.

reprographics

The process of copying or duplicating documents or information.

requested

In InfoPrint, pertaining to the specific values of attributes requested by a job when it is submitted. The requested attribute values of a job are validated against supported attribute values for an actual destination to determine if the printer can handle that job. Contrast with *supported*.

resettable attribute

An attribute whose value can be set or modified after an object has been created, assuming the object is in an appropriate state to be modified. See also *initially settable attribute*; contrast with *non-settable attribute*.

resource

In AFP, a file containing a collection of printing instructions used when printing a job. Resources include fonts, overlays, form definitions, page definitions, and page segments.

resource context

In InfoPrint, an object that contains directory path information that helps the print system locate resources needed for printing a job. The resources include fonts, overlays, form definitions, page definitions, and page segments.

resource document

In InfoPrint, an object that represents a resource, such as graphics or fonts, used by a job to print a printable document. Contrast with *printable document*.

resubmit

In InfoPrint, an action used to reroute pending or retained jobs to a different logical destination than the one through which the job was originally submitted.

resume

In InfoPrint, the action used to resume the printing of paused jobs or resume the distribution of jobs from paused servers or queues.

retained job

In InfoPrint, an object that represents a job that is being stored in the print system for a specified amount of time, normally after the completion of printing the job. A retained job does not reside in a queue.

retention

The process of storing data after completion of a process for a certain length of time.

retrieval

The process of bringing digital archived data out of storage and into online memory for reuse. See also *archiving*.

RGB

Red, green, blue.

RIP

Raster image processor.

To convert data to dot patterns using a raster image processor.

root user

In the AIX environment, the system user with the most authority who can log in and execute restricted commands, shut down the system, and edit or delete protected files. Synonymous with *superuser*.

RPC

Remote Procedure Call.

RPM

Red Hat Package Management is the baseline package format of the Linux Standard Base distribution.

S

scanner

A device that converts hardcopy source data into digital format (halftone dots) to avoid retyping the data.

scheduler

In InfoPrint, the scheduling method that the queue uses when assigning a job to an actual destination.

separator sheet

The sheet of paper, blank or otherwise, that separates documents in a job. See also *auxiliary sheet*.

server

In InfoPrint, the object that accepts configuration, management, and printing requests, performs the requested operations, and sends responses back as a result of the operation.

settable attribute

See *initially settable attribute*, *resettable attribute*.

severity

An indication of how serious an error condition is.

shell

In the AIX operating system, a command interpreter that acts as an interface between the user and the operating system. In InfoPrint documentation, all shell examples use the Korn shell.

shift-out, shift-in code

Control characters used to indicate the beginning and end of a string of double-byte, ideographic characters.

shortest-job-first

In InfoPrint, a queuing technique where the next job assigned to the first position in the queue is the shortest job in the queue. Contrast with *deadline*, *FIFO (first-in-first-out)*, *job-priority*, and *longest-job-first*.

shut down

In InfoPrint, the action used to halt all server or actual destination processes without deleting the server or actual destination.

signature

A group of pages that are printed, folded, cut, and bound together. Manual placement of pages in the signature is determined using a folding dummy.

simplex

In InfoPrint, the value of the document or actual destination `plex` attribute indicating that output images are placed on the media in a head-to-head format, so that the top of one image is at the same edge as the top of the next image. Depending on the value of the document or actual destination `sides` attribute, the document can be printed on one or both sides of the paper. Contrast with *tumble*; see also *simplex printing* and *duplex printing*.

simplex printing

Printing on only one side of the paper. Contrast with *duplex printing (1)*.

Printing on one or both sides of the paper, placing output images on the media in a head-to-head format, so that the top of one image is at the same edge as the top of the next image. Contrast with *tumble duplex printing*; **see also** *duplex printing (2)*.

SMIT

System Management Interface Tool.

SNA

Systems Network Architecture.

spiral binding

A type of book binding in which wire or plastic coils are threaded through a series of holes or slots in the binding edge. Contrast with *edition binding*, *perfect binding*, and *wire-o binding*.

spot color

Individual colored inks formulated to exactly match a specified color. Spot color is used when CMYK process color cannot produce a reasonable facsimile of the color or when vivid color is needed. Spot color is also used when fluorescent or metallic colors are needed.

spread

In color printing, an area whose dimensions have been enlarged to eliminate white space between it and another color. Contrast with *choke*.

start sheet

The sheet of paper, blank or otherwise, that can precede a job. See also *auxiliary sheet*.

state

Synonym for *object state*.

stripping

The process of mechanically assembling film into plate layouts. Page imposition takes place during stripping.

subnet mask

Identify a range of IPv4 addresses that are on the same network.

subnetwork

Any group of nodes that have a set of common characteristics, such as the same network ID.

In the AIX operating system, one of a group of multiple logical divisions of another network, such as can be created by TCP/IP.

subtractive color system

A system that reproduces an image by mixing (adding) appropriate quantities of cyan, magenta, and yellow paints on white paper. These paints reflect certain colors and absorb—or subtract—others. Contrast with *additive color system*.

superuser

Synonym for *root user*.

supported

In InfoPrint, pertaining to the specific job attribute values that the actual destination can accept during job validation. InfoPrint validates the requested attribute values of the job against the supported attribute values of the actual destination to determine whether the actual destination can handle that job. Contrast with *requested*.

synchronous

Occurring with a regular or predictable time relationship to a specified action. Contrast with *asynchronous*.

system administrator

Synonym for *administrator*.

System Management Interface Tool (SMIT)

In the AIX operating system, an interface tool for installation, maintenance, configuration, and diagnostic tasks. SMIT lets you perform tasks without entering any commands.

Systems Network Architecture (SNA)

The description of IBM's logical structure, formats, protocols, and operational sequences for sending units through, and controlling the configuration and operation of, networks.

T

table reference character (TRC)

An optional control character in a print data set. The TRC identifies the font used to print the record and can be used to select a font during printing.

Tagged Image File Format (TIFF)

A digital format for storing scanned images. TIFF files are also referred to as raster format files (as opposed to vector format files). When used in desktop publishing, TIFF files produce only a low-resolution FPO image; the high-resolution data remains on the hard disk.

task help

A type of online help that provides a list of tasks that can be completed with a selected object. When you select a task, the help provides step-by-step information about how to complete the task.

TCP/IP

Transmission Control Protocol/Internet Protocol.

TCP/IP-attached printer

A printer device attached to an pSeries computer through telecommunication lines using the TCP/IP protocol.

In InfoPrint, a PSF physical printer that represents a TCP/IP-attached printer device. See also *AIX-attached printer*, *direct-attached printer*, and *upload-TCP/IP-attached printer*.

template

In the InfoPrint Manager Administration GUI, an object that represents a set of default attribute values that has been defined for creating a particular type of object, such as an actual destination.

ticket

See *job ticket*.

TIFF

Tagged Image File Format.

Transmission Control Protocol/Internet Protocol (TCP/IP)

A set of communication rules used in the Internet and in any network that follows the U.S. Department of Defense standards for inter-network protocol. TCP provides a reliable host-to-host protocol between hosts in packet-switched communications networks and in interconnected systems of such networks. It assumes that the Internet Protocol (IP) is the underlying protocol. See also *Internet Protocol*.

trapping

In desktop publishing, the amount of overlap in overprinting colors. Trapping prevents white paper showing through gaps caused by normal errors in registration. On sheet-fed presses, trapping is usually 0.25 point. See also *choke* and *spread*.

TRC

Table Reference Character.

TrueType font (TTF)

A font format based on scalable outline technology with flexible hinting. Glyph shapes are based on quadratic curves. The font is described with a set of tables contained in a TrueType Font File.

TTF

TrueType font.

tumble

In InfoPrint, the value of the document or actual destination **plex** attribute indicating that output images are placed on the media in a head-to-toe format, so that the top of one image is at the same edge as the bottom of the next image. The document must be printed on both sides of the paper. Contrast with *simplex*.

tumble duplex printing

Printing on both sides of the paper, placing output images on the media in a head-to-toe format, so that the top of one image is at the same edge as the bottom of the next image. Contrast with *simplex printing (2)*, *duplex printing (2)*.

U

UCR

Under color removal.

under color removal (UCR)

Conversion of neutral color areas to black ink that reduces use of CMY inks, improves trapping, and reduces setup time. Generally, UCR is performed during image scanning, but some RIPs perform it during processing. Synonymous with *gray component replacement (GCR)*.

unmanage

In the InfoPrint Manager Administration GUI, the action used to put an object into a mode where its icon does not reflect the changes of status for the object.

upload printer

See *upload-TCP/IP-attached printer*.

upload-TCP/IP-attached printer

In InfoPrint, a PSF physical printer that represents a printer device attached through an MVS system and managed by PSF/MVS. InfoPrint communicates with the MVS system through the TCP/IP network. See also *AIX-attached printer*, *direct-attached printer*, and *TCP/IP-attached printer*.

V

validate

In InfoPrint, to compare the attribute values requested by a job with the supported attribute values of the actual destinations in the system and to determine whether there is an actual destination capable of printing or sending the job.

value

A specific characteristic of an attribute.

variable

A name used to represent a data item whose value can change while the program is running.

variable data

Data that can be changed between copies of a document. For example, a form letter (constant data) can be merged with variable data, such as a customer's name and address to produce personalized documents.

varnish

A protective layer applied to a finished sheet, usually for photos, but sometimes used as a design element because of its reflective qualities. Varnishes can be tinted.

vector

An absolute coordinate point and line in space. PostScript files can contain vector artwork. Vector files are converted to rasters during the RIP process.

velox

A black and white photographic print made from a halftone negative, to be used as a proof copy.

vignette

An image with soft, fade-away edges.

Virtual Machine (VM)

An IBM licensed product that manages the resources of a single computer so that multiple computing systems appear to exist.

A virtual data processing system that appears to be at the exclusive disposal of a particular user, but whose functions are accomplished by sharing the resources of a real data processing system. (T)

Virtual Storage Extended (VSE)

An IBM licensed program whose full name is the Virtual Storage Extended/Advanced Function. It is a software operating system controlling the execution of programs.

Visual Systems Management (VSM)

In AIX, a type of graphical user interface that allows system management through the direct manipulation of objects.

VM

Virtual Machine.

VSE

Virtual Storage Extended.

VSM

Visual Systems Management.

W

web

A roll of paper used in web or rotary printing.

well

In the InfoPrint Manager Administration GUI, an area in a pane that contains a group of objects related to the objects in the pane; for example, a queues well in a servers pane.

what you see is what you get (WYSIWYG)

Refers to the fact that the composite image displayed on the screen at a computer workstation has the appearance of the final printed image.

window

A rectangular area of the screen that you can move about, place on top of, or pull under other windows, or reduce to an icon.

wire-o binding

A continuous double series of wire loops run through punched slots along the binding side of a booklet. Contrast with *edition binding*, *perfect binding*, and *spiral binding*.

with-request

In InfoPrint, a document transfer method where the client transfers the documents directly to the server. Contrast with *pipe-pull*.

workstation

A terminal or microcomputer, usually one that is connected to a mainframe or to a network, at which a user can use applications.

write access

A level of authorization that grants the ability to modify data.

WYSIWYG

What you see is what you get.

X

X-Windows

A network-transparent windowing system developed by MIT. It is the basis for Enhanced X-Windows, which runs on the AIX Operating System.

xerography

A dry printing process using corona-charged photoconductive surfaces to hold latent images that are developed with a dry toner and then transferred to paper and fused with heat.

Xstation

A terminal that is connected through a network to an pSeries computer, from which a user can perform command-line functions and run X-Windows based applications.