

IBM InfoPrint Manager for AIX



# Administrator's Guide

*Version 3 Release 1*



IBM InfoPrint Manager for AIX



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*Version 3 Release 1*

**Note**

Before using this information and the product it supports, be sure to read the general information in "Notices" on page xi.

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## About This Publication

This publication describes how to configure and maintain the different objects of IBM InfoPrint Manager for AIX (InfoPrint), such as queues and actual destinations. It also describes how to manage the AIX environment in which IBM InfoPrint Control, the server portion of InfoPrint, runs.

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## Who Should Use This Publication

This publication contains information for the administrators who create and configure the basic InfoPrint environment. It also contains some information for the operators who monitor the InfoPrint server. (Operator information also appears in *IBM InfoPrint Manager for AIX: User's and Operator's Guide*.)

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## About the Documentation for InfoPrint

InfoPrint provides the following types of documentation:

- InfoPrint library in portable document format (PDF) or hard copy
- InfoPrint documentation on the World Wide Web
- Online help for InfoPrint Submit, InfoPrint Scan, the InfoPrint job and printer management graphical user interface (GUI), the InfoPrint administrator's GUI, the InfoPrint SMIT administrator's interface, and the InfoPrint SMIT operator's GUI
- Manual (man) pages
- InfoPrint online message catalog
- **readme** files

## The InfoPrint Publication Library

InfoPrint provides the following publications in PDF format on a CD-ROM supplied with the product. Unless otherwise specified, you can order printed copies of these publications from IBM by requesting the form number for the publication:

- *IBM InfoPrint Manager for AIX: Information Map*, G544-5661. This publication describes where to find information about InfoPrint tasks in the InfoPrint publication library and on the World Wide Web.
- *IBM InfoPrint Manager for AIX: Administrator's Guide*, S544-5595. This publication describes the primary administrator tasks necessary for setting up an InfoPrint environment.
- *IBM InfoPrint Manager for AIX: User's and Operator's Guide*, S544-5596. This publication describes submitting jobs from InfoPrint Submit, InfoPrint Scan, InfoPrint Select, and the InfoPrint AIX client, scheduling jobs, and managing the print environment.
- *IBM InfoPrint Manager for AIX: Reference*, S544-5475. For administrators, operators, and application programmers with the need to perform command-line functions, this publication describes the commands, utilities, transforms, attributes, and attribute values associated with InfoPrint.

**Note:** This publication is available only in PDF format.

- *PSF Direct Network Configuration Guide for System/370*, S544-5486. For system administrators or network specialists responsible for configuring a

system for Print Services Facility (PSF) Direct. PSF Direct is a function of IBM InfoPrint Manager for AIX that allows another PSF program (PSF/VM, PSF/MVS, or PSF/VSE) to print remotely, using the SNA LU 6.2 protocol, on printers supported by InfoPrint. The PSF program sends the print data stream directly to the InfoPrint printer.

- *IBM InfoPrint Manager for AIX: Configuring and Using PostScript Extreme*, S544-5488. For administrators responsible for configuring the parallel raster image processing (RIP) system. The parallel RIP system uses the Adobe PostScript Extreme technology to create a combined hardware and software solution for transforming and printing PostScript input data quickly and efficiently.

**Note:** This is an optional feature of InfoPrint.

- *IBM PSF for AIX: AFP Upload Configuration Guide Using SNA Server/6000*, S544-5422. For system administrators, this publication describes how to configure AFP Upload on both AIX (client) and MVS (server) to send files to the JES spool on the MVS server, using a SNA Server/6000 protocol.
- *IBM PSF for AIX: AFP Upload Configuration Guide Using TCP/IP*, S544-5423. For system administrators, this publication describes how to configure AFP Upload on both AIX (client) and MVS (server) to send files to the JES spool on the MVS server, using a TCP/IP protocol.

## Other Publications Related to InfoPrint

The following publications contain information you might find useful while installing, administrating, and using InfoPrint:

- *AIX Version 4 Release 1 Commands Reference*, SBOF-1851, or *AIX Version 4 Release 3 Commands Reference*, SBOF-1877. For administrators, operators, and end users, these publications provide complete information about AIX commands.

**Note:** InfoPrint requires AIX Version 4.2.1 or 4.3. Users of AIX Version 4.2.1 should refer to *AIX Version 4 Release 1 Commands Reference*.

- *PSF/MVS MVS Download Guide*, G544-5294. For administrators and job submitters, this publication provides instructions for setting up the MVS Download support on PSF/MVS so that data can be transmitted from the Job Entry Subsystem (JES) spool on MVS for printing on an InfoPrint system.
- *Printing for Fun and Profit under AIX*, GG24-3570. For administrators and systems engineers, this publication provides instructions for installing printer devices and configuring AIX print queues.
- *IBM Page Printer Formatting Aid: User's Guide*, S544-5284. For administrators and job submitters, this publication provides instructions for creating form definitions and page definitions with Page Printer Formatting Aid for AIX (PPFA).

**Note:** This is an optional feature of InfoPrint.

- *Advanced Function Presentation: Font Summary*, G544-3810. For administrators and job submitters, this publication provides information on IBM fonts.
- *Advanced Function Presentation: Printer Information*, G544-3290. For administrators and job submitters, this publication provides information on IBM printer devices.

- *IBM Data Stream and Object Architectures: Bar Code Object Content Architecture Reference*, S544-3766. For administrators and job submitters, this publication provides information on bar codes.
- *IBM Data Stream and Object Architectures: Font Object Content Architecture Reference*, S544-3285. For administrators, this publication provides information on coded fonts.
- *IBM Data Stream and Object Architectures: Graphics Object Content Architecture Reference*, S544-5498. For administrators and job submitters, this publication provides information on printing graphics.
- *IBM Data Stream and Object Architectures: Image Object Content Architecture Reference*, SC31-6805. For administrators and job submitters, this publication provides information on the IOCA data stream.
- *IBM Data Stream and Object Architectures: Mixed Object Document Content Architecture Reference*, SC31-6802. For administrators and job submitters, this publication provides information on the MOD:CA data stream.
- *TCP/IP Tutorial and Technical Overview*, GG24-3376. For networking specialists, this publication provides an overview of the Transmission Control Protocol/Internet Protocol (TCP/IP) and its uses in heterogeneous networks.

## Manual (man) Pages for InfoPrint Commands, Utilities, and Transforms

Online information, in manual (man) page format, is available for all InfoPrint commands and utilities. You can use the AIX **man** command to view man pages for the following InfoPrint commands:

<b>lprfp</b>	<b>pdpromote</b>
<b>mkfntmap</b>	<b>pdq</b>
<b>pdclean</b>	<b>pdreorder</b>
<b>pdcreate</b>	<b>pdresubmit</b>
<b>pddelete</b>	<b>pdresume</b>
<b>pddisable</b>	<b>pdrm</b>
<b>pdenable</b>	<b>pdset</b>
<b>pdls</b>	<b>pdshutdown</b>
<b>pdmod</b>	<b>pdspace</b>
<b>pdpause</b>	<b>psfstat</b>
<b>pdpr</b>	

For example, to view online information for the **pdpr** command, enter:

```
man pdpr
```

You can use the AIX **man** command to view the following man page for the **-o** flag, which is used to pass information to InfoPrint on AIX print commands:

**oflag**

You can use the AIX **man** command to view man pages for the following InfoPrint utilities:

admingui  
afpsplit  
ainupod1  
ainupod2  
ainupod3  
ainurpt1  
ainurpt2  
ainurpt3  
ainurpt4  
ainurpt5  
ainurpt6  
cfu  
ipguiadv  
ipguibasic  
ipguidist  
jsmigr  
opergui  
pdadmin

pdcr cds  
pdcr dflt  
pdcr med  
pdinitports  
pdmigpp  
pdmincfg  
pdmsg  
pdnetifspri  
rc.pd  
sense  
setup  
startppo  
start\_server  
startsv  
stop\_server  
tdump  
tlist  
t2file

You can use the AIX **man** command to view man pages for the following InfoPrint daemon utilities:

mvsprsd  
pcl2afpd

ps2afpd

You can use the AIX **man** command to view man pages for the following InfoPrint transform commands:

db2afp  
d2afp  
gif2afp  
jpeg2afp  
line2afp

pcl2afp  
pdf2afp  
ps2afp  
sap2afp  
tiff2afp

For information about the flags that you can use with the **man** command, refer to the **man** man page or to the AIX Version 4.2 *Commands Reference*.

## Manual (man) Pages for InfoPrint Attributes

InfoPrint also provides you with online information about the attributes that each object supports. To view the various attributes, enter the following command:

```
man pd_att
```

A list displays containing file names of attribute man pages. You can then display the desired file and view the information about specific attributes.

Use the AIX **man** command to view the following InfoPrint man pages for attributes:

pd\_att\_act\_dest  
pd\_att\_aux\_sheet  
pd\_att\_document  
pd\_att\_job  
pd\_att\_log

pd\_att\_log\_dest  
pd\_att\_medium  
pd\_att\_queue  
pd\_att\_res\_context  
pd\_att\_server

## InfoPrint Online Message Catalog

InfoPrint supplies a message catalog for the messages that are issued during its operation. For each message, the message catalog includes the text of the message, an explanation, a system action, and a response. You can view all information for a specific InfoPrint error message by issuing the InfoPrint **pdmsg** utility followed by the message number.

For example, from the command line enter:

```
pdmsg 5010-096
```

Messages issued by InfoPrint have the following prefixes:

<b>0420</b>	<b>0424</b>
<b>0421</b>	<b>0425</b>
<b>0422</b>	<b>5010</b>
<b>0423</b>	

See the InfoPrint **pdmsg** man page for a complete description of the **pdmsg** utility.

To view information about an AIX message, issue the AIX **info** command with the **-h** flag, followed by the message number. For example, from the command line enter:

```
info -h MessageNumber
```

where *MessageNumber* is the number of the AIX message.

## readme Files

The **readme** files on the InfoPrint product CD-ROM contain last-minute information about InfoPrint that the hardcopy publications or the online information do not contain. You can use the AIX **more** command or a text editor, such as **dtpad** or **vi** on AIX, EPM on OS/2, or Notepad on Windows, to view the contents of the **readme** files.

## Viewing PDF Publications

InfoPrint provides software and hardware publications in PDF files on the publications CD-ROM. To view or print these publications:

1. Log in to AIX as **root** or as a member of the **system** group.
2. Insert the InfoPrint publications CD-ROM into the drive.
3. To determine the identifier of your CD-ROM drive, enter on the AIX command line:

```
lsdev -C -c cdrom
```

4. Then enter:

```
mount -v cdrfs -r /dev/cdn /cdrom
```

where *cdn* is the identifier of your CD-ROM drive, and */cdrom* is the file system that was created to install InfoPrint.

5. Read the **readme.txt** file in the **/cdrom/books** directory.
6. The publications reside in the **/cdrom/books/*language*** directory. Use the Adobe Acrobat Viewer to view the publications, or use InfoPrint to print them.

7. To use the Adobe Acrobat Viewer, enter:

```
cd /usr/lpp/Acrobat3/bin
./acroexch
```

Click on the **Help** button to learn how to view or print a publication.

8. If you have installed InfoPrint Submit or the Adobe Acrobat Viewer on Windows, you can print or view the InfoPrint PDF publications from your Windows system. On Windows, the publications directory is called *d:\books*, where *d:* is the identifier of your CD-ROM drive.

---

## The Organization of This Publication

This publication describes InfoPrint configuration and administration, and contains the following parts:

### Part 1, Getting Started with InfoPrint

This part provides an overview of the different InfoPrint objects and describes using the InfoPrint AIX client and the InfoPrint interfaces that run on AIX: the InfoPrint administrator's GUI, InfoPrint SMIT administrator's interface, and InfoPrint job and printer management GUI.

### Part 2, Expanding Your InfoPrint System

This part contains specific information and procedures for adding and configuring:

- Servers
- Output devices
- Actual destinations
- Queues
- Logical destinations
- Default document and job objects
- Media
- Auxiliary sheets and user-exit programs
- Resource-context objects, which define directories that contain Advanced Function Presentation (AFP) resources
- Notification profiles

### Part 3, InfoPrint Administrator's GUI Tasks for Operators

Although the InfoPrint administrator's GUI is primarily for administrators, it also allows operators to perform some tasks. This part describes those tasks. It contains specific information and procedures for managing:

- Queues
- Actual destinations
- Jobs

### Part 4, Maintaining Your InfoPrint System

This part contains information on:

- Controlling access to InfoPrint
- Setting environment variables
- Monitoring disk usage on your AIX system
- Viewing accounting and audit data
- Compiling customized user-exit programs

## Part 5, Customizing InfoPrint for Special Jobs

This part contains information on:

- Setting up the transform programs that are provided with InfoPrint. The transform programs transform the incoming data stream into the Advanced Function Presentation (AFP) format.
- Setting up fonts for printing different data types
- Modifying global resource identifier files
- Using MVS Download to print from an MVS Client

The appendixes contain::

- Instructions for customizing and using the InfoPrint SMIT operator's GUI on AIX
- InfoPrint terminology for customers who have migrated from IBM Print Services Facility for AIX 2.1

This publication also includes a glossary and an index.

---

## Conventions Used in This Publication

This publication uses conventions for the following:

- Highlighting
- InfoPrint keyword notation
- Special characters in commands

### Highlighting

This publication uses four different types of highlighting:

<b>Bold</b>	In this publication, bold highlighting identifies commands, attributes, files, directories, and other items whose names the system predefines, such as <b>pdpr</b> and <b>/usr/lpp/psf</b> .
<i>Italic</i>	When used in running text, italic highlighting identifies a variable item whose actual name or value you supply, such as <i>locale</i> or <i>FileName</i> . Italics also identify publication titles.
<b>Bold Italic</b>	Combined bold and italic highlighting identifies a specific keyword name that you enter exactly as shown and a variable value that you supply with the attribute. For example: " <b>copy-count=number</b> "
Monospace	When used in command examples, information in a monospaced font identifies the exact wording of the command. Titles of windows in graphical user interfaces also appear in monospaced font.

### InfoPrint Keyword Notation

Keyword syntax notation uses symbols to show specific conditions. Do not enter the following symbols, unless specifically instructed to do so, when actually entering an InfoPrint keyword:

Bar	
Braces	{ }

**Note:** There are some situations in which you will actually type the brace characters. See "Special Characters That Are Included in Commands" on page xx.

Brackets	[ ]
----------	-----

Underlining     —  
Ellipsis         ...

These symbols have the following meanings when used in the publications and in the online information:

- A vertical bar, | , between values means that you can enter only one of the values with the keyword or flag. For example:

**job-hold={true | false}**

means that when you set the **job-hold** attribute, you can specify either **true** or **false**, but not both.

- Braces, { } , around values identify required items that you must supply with the command. For example:

**job-hold={true | false}**

means that you must enter either **true** or **false**.

- Brackets, [ ] , around values indicate that they are optional. For example:

**resource-context=directory[:directory...]**

means that you do not have to enter more than one directory, but that you can have two or more directories, each separated by a colon, : .

- An ellipsis, ... , means that you can supply more than one occurrence of a keyword or value with the command. For example:

**resource-context=directory[:directory...]**

means that you can enter more than one directory name.

- Underlined text identifies the default fixed value that InfoPrint uses if you do not specify a value. For example:

**default-printer-resolution={240 | 300 | 480 | 600}**

means that **240** is the default value.

## Special Characters That Are Included in Commands

When colons, dashes, the equal sign, double quotation marks, single quotation marks, and braces are shown in command syntax notation, you will include them when you issue the command in most cases. These special characters have the following meanings:

- A colon, :, separates related values. For example:

```
pdpr -f file1 -x "page-select=3:6" file2
```

means that only pages 3 through 6 of file2 are to print.

- A dash, -, always precedes a flag, for example, **-x**.

- The equals sign, =, separates attribute and value pairs. For example:

```
pdmod -x "sides=2" DivSpool12:1011230045
```

means that **2** is the value assigned to the **sides** attribute.

- Double quotation marks, " ", surround multiple attribute and value pairs, such as:

```
-x "sides=2 print-quality=draft"
```

For consistency, this publication also shows double quotation marks around single attribute and value pairs in all command examples, although they are not required. For example:

```
-x "document-format=ascii"
```

- Double quotation marks, " ", surround text strings that contain spaces, such as:

```
-m "Down for maintenance"
```

- Single quotation marks, ' ', surround a text string that contains spaces inside another string that is enclosed in double quotation marks. An example is:

```
-x "sides=2 job-print-after='08:00:00 10/09/98'"
```

- Braces, { }, surround a value in a notification profile. An example is:

```
-x "notification-profile={delivery-method=electronic-mail}"
```

### Global Character Used in Examples and Shell Information

Examples using the asterisk (\*) as a global character, and other examples that are shown within this InfoPrint publication relate to the Korn shell. Depending on the shell you are using, the examples shown may or may not work. The examples may also show control characters that other shells do not require. Adjust the examples as necessary for the shell you are using.

### Examples of Commands and Attributes

This publication shows examples of commands in a format designed for ease of reading. When entering the command, allow the command to wrap characters from one line to the next.

Many examples in this publication use spacing of attributes and values for ease of reading and formatting considerations. When entering the attributes and their values on the command line or in attributes files, use the correct syntax.



---

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# Chapter 1. InfoPrint Configuration and Management Overview

IBM InfoPrint Control (InfoPrint), which is a part of IBM InfoPrint Manager for AIX, is a highly flexible print management system providing you with many choices on how to expand and manage your print environment. Whether your print environment is simple with a few high-speed printer devices located together, or whether you support thousands of jobs printing on a wide array of printing hardware running at different locations, InfoPrint lets you make the most of your system.

This chapter briefly introduces InfoPrint and provides you with information on design considerations that you can use to set up and manage the InfoPrint configuration that best suits your needs. Use this information after you have completed the installation of your basic InfoPrint system, as described in *Planning for and Installing IBM InfoPrint Manager for AIX*.

---

## Optimizing Your Print Resources

Your print resources are the applications that generate your jobs, your printer devices, and the InfoPrint objects that control the jobs as they process and print. Your basic InfoPrint configuration, generated during installation, includes one InfoPrint server, a default logical destination, a queue, and an actual destination (physical printer). Before adding more InfoPrint objects, consider how InfoPrint 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 gives you the ability to centrally manage all of your printer hardware devices and set up a configuration that lets you route jobs with common requirements to a particular printer or set of printers supporting those types of jobs. This allows you to prevent situations where some printers are idle while other printers have a backlog of jobs waiting to print at certain times of the day. By optimizing the use of each printer, you can distribute your print demands among all of your available printers.

- Output jobs to fax or electronic mail:

Instead of printing a hard copy of a job, you may want to transmit it to a fax machine or an electronic mailbox. InfoPrint allows you to route jobs to fax and electronic mail in the same way that you would submit them to print.

- Balance the use of AIX systems:

By balancing the printing workload, you can also optimize the use of your AIX 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 distribute your jobs to several InfoPrint servers running on several AIX systems, you will distribute the printing demands of your organization more evenly among those systems.

- Control jobs and documents:

InfoPrint provides you with flexibility in specifying defaults for jobs and documents. You may want to use different job or document 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 the other configuration decisions you make.

- See significant events when they happen:

InfoPrint provides asynchronous event notification that informs job submitters, operators, and administrators of conditions requiring specific actions. For example, InfoPrint can issue notification when queues have a backlog of jobs and can notify operators when the printers they are responsible for are out of paper. Your job submitters can receive notification if InfoPrint cannot schedule their jobs at the requested logical destination. The types of events for which InfoPrint can provide notification are highly configurable; you can ensure that InfoPrint notifies the appropriate people when significant events occur. Event messages also provide you with valuable information that can alert you to a problem with the printing system and help you isolate the cause of the problem.

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

---

## What Is the InfoPrint Server?

The InfoPrint server contains all of the other InfoPrint objects that you can create, customize, and monitor. This includes logical destinations, queues, actual destinations, media, and any defaults for job and document characteristics.

The InfoPrint server can also contain auxiliary sheets and resource-context objects. You can use auxiliary sheets to separate jobs and to print job identification information. Resource-context objects point to the storage locations of the Advanced Function Presentation (AFP) resources, such as fonts and overlays, used with certain jobs.

The number of InfoPrint servers you need depends on several factors such as the speed of the AIX system, the amount of memory and fixed disk space on the system, and the speed of the printer devices it supports. As a general rule for your initial configuration, consider that:

- One InfoPrint server supports, efficiently, up to five actual destinations (physical printers, fax machines, or electronic mailing systems).
- You should only have one server running on an AIX system.

Based on job throughput, add more servers as necessary.

Server configuration and management tasks are minimal. Most of your tasks will involve creating, configuring, and managing objects within the server.

### Notes:

1. When you install InfoPrint the first AIX system is configured with a minimum InfoPrint configuration consisting of a server, logical destination, queue, and actual destination (in this case, a physical printer). All other AIX systems will only have the code installed; you will set up the configuration you want for each of those systems.
2. If you migrated an existing printing system to InfoPrint, your initial configuration depends on the results of the migration.

---

## InfoPrint Server Configurations

When you first install InfoPrint, you select either a basic or advanced configuration for your server.

- A *basic* InfoPrint server is configured to support:
  - Print on Demand (commercial) printing
  - Assignment of jobs to actual destinations when they are submitted (*early binding*). Early binding is like getting in a checkout line at the supermarket. From the moment that you get in line, you are “bound” to a single cash register. Your line may move slowly, or stop while the cashier changes the cash register tape, but you cannot pay at a different cash register unless you get out of line and into another line.
  - PostScript, TIFF, and variable data jobs
  - Jobs submitted from InfoPrint Submit, InfoPrint Scan, or InfoPrint Library

On a basic InfoPrint server, the Common Desktop Environment (CDE) is configured especially for InfoPrint.

- An *advanced* InfoPrint server is configured to support:
  - Data center (production) or distributed mission printing
  - Printer pooling for workload balancing (*late binding*). Late binding is like getting a table at a crowded restaurant. You don't know which table you will sit at until one becomes available, although you may have requirements that narrow the selection. For example, if there are six people in your party, you know that you will not sit at a table for two.
  - PostScript, TIFF, and variable data jobs
  - Jobs submitted from the command line, from workstation applications through InfoPrint Select, or from other application programs

---

## About Configuring and Managing the Objects InfoPrint Servers Contain

Read the following to learn more about server objects and their configuration and management.

### What Are InfoPrint Logical Destinations?

The InfoPrint logical destination is the object in your InfoPrint system to which job submitters and applications submit jobs. Your basic InfoPrint system has one default logical destination. You may want to add more logical destinations to support specific types of jobs and specific groups of job submitters. Different groups of job submitters can have different default logical destinations. 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 InfoPrint server.

The most common type of logical destination is a *logical printer*. Users submit print jobs to logical printers.

## What Are InfoPrint Queues?

An InfoPrint queue receives jobs from a logical destination. The queue holds each job until an InfoPrint actual destination associated with the queue that supports all of the job requirements is available to process the job. Queues also contain jobs that specify retention periods; retained jobs have either printed or were cancelled and remain in the system for specified period. One or more logical destinations send jobs to the queue and the queue, in turn, sends jobs to one or more actual destinations. The actual destination to which a queue sends jobs does not have to be in the server that contains the queue. The actual destination can be running in an InfoPrint server on a different AIX system.

## What Are InfoPrint Actual Destinations?

An InfoPrint actual destination represents an output device such as a printer, fax machine, or electronic mailing system. You create one actual destination for each output device that you use with InfoPrint. You configure an actual destination so that its attributes represent the features and capabilities of the output device, such as two-sided printing for a printer. You also configure the actual destination to control how and the order in which it processes jobs, such as by job size or by when the queue received the job.

If you do not specify values for all of the attributes when you create an actual destination, InfoPrint provides default values for many of them. You can make modifications, as required, at a later time.

The most common type of actual destination is a *physical printer*. Physical printers represent printer devices. *Fax destinations* and *e-mail destinations* represent fax devices and electronic mailing systems.

## What Are InfoPrint Media?

A medium represents the physical material, for example, paper, envelopes, transparencies, or multi-part forms, on which a job is printed. You can configure a medium to describe its dimensions, color, purpose, or any other useful information.

## What Are InfoPrint Auxiliary-Sheet and Resource-Context Objects?

An auxiliary sheet is a sheet of paper that prints at the beginning or end of a job, or that separates different parts of a job. The auxiliary sheet may have information printed on it or it may be blank. InfoPrint provides five default types of auxiliary sheets; you can create more as required. You can also link user-exit programs, either those supplied with InfoPrint or customized programs that you create, to control the information printed on the auxiliary sheet.

InfoPrint provides you with the ability to manage AFP resources (fonts, overlays, form definitions, page definitions, and page segments) at the printer device. You can store the resources in a centrally-available location and then use InfoPrint resource-context objects to identify the location. After you have configured the resource-context objects, InfoPrint searches for the AFP resources required by a job and then sends the resource with the job for processing.

## What Are InfoPrint Default Documents and Default Jobs?

A job is a unit of work you send to InfoPrint for processing and printing or transmission by fax or electronic mail. A job can consist of a single file, or many files. In InfoPrint terminology, each file within a job is called a document. Both a job and the document or documents it contains have attributes that define job and document 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 whether two-sided printing is required and the type of media on which the job must print. Job submitters and applications can specify the attributes with the job, or you can streamline the process. You may want to create default job and document objects and associate them with InfoPrint logical destinations so that jobs automatically have certain default values applied. This saves time for the job submitter and ensures that physical printers are available or are made available to process jobs correctly.

---

## InfoPrint Destination Configuration Models

Destination configuration models show the relationships among logical destinations, job- and document-attribute defaults, queues, and actual destinations. Your basic 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 may want to consider a more advanced destination configuration model.

For any of the configuration models, while the logical destination and the queue to which it sends jobs must reside in the same InfoPrint server, the actual destination can be running in a different InfoPrint server running on a different AIX system.

## About the Desktop Destination Configuration Model

The desktop destination configuration model, as shown in Figure 1 on page 10, 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 to which you are adding InfoPrint. The capabilities of the actual destination directly control the types of jobs that your users can print, fax, or transmit by electronic mail with this destination configuration.

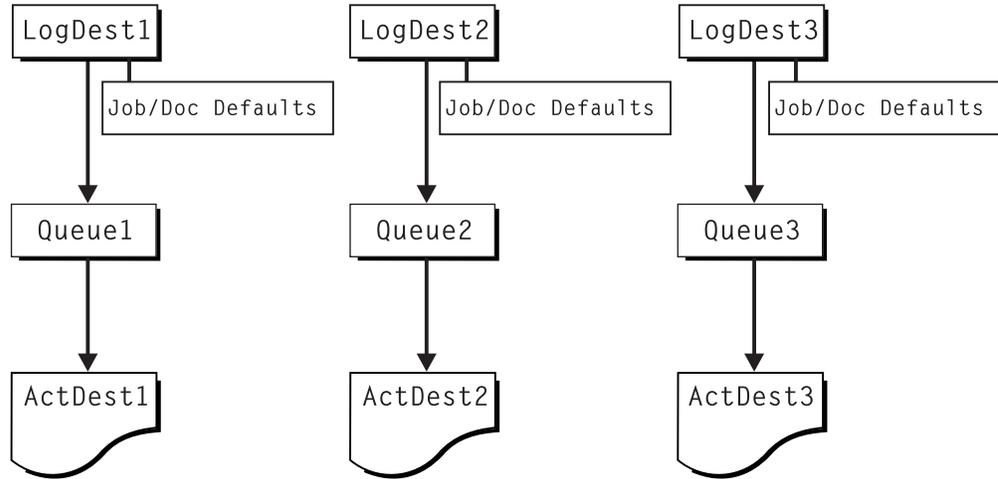


Figure 1. Desktop Destination Configuration Model

## About the Pool Destination Configuration Model

The pool destination configuration model, as shown in Figure 2, has a one-to-many relationship between a logical destination and two or more actual destinations.

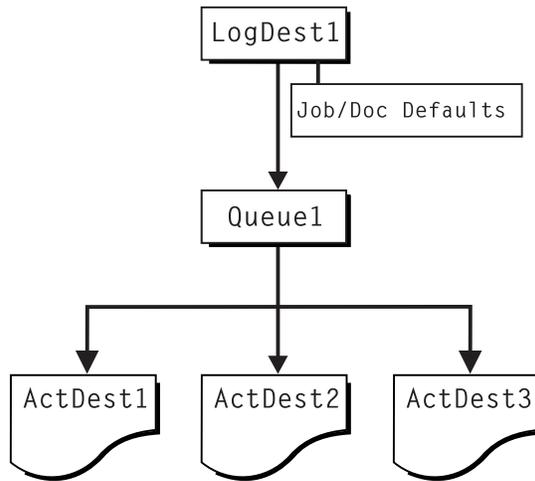


Figure 2. Pool Destination Configuration Model

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 may 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 on which they print 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.

## About the 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 3 shows the funnel configuration.

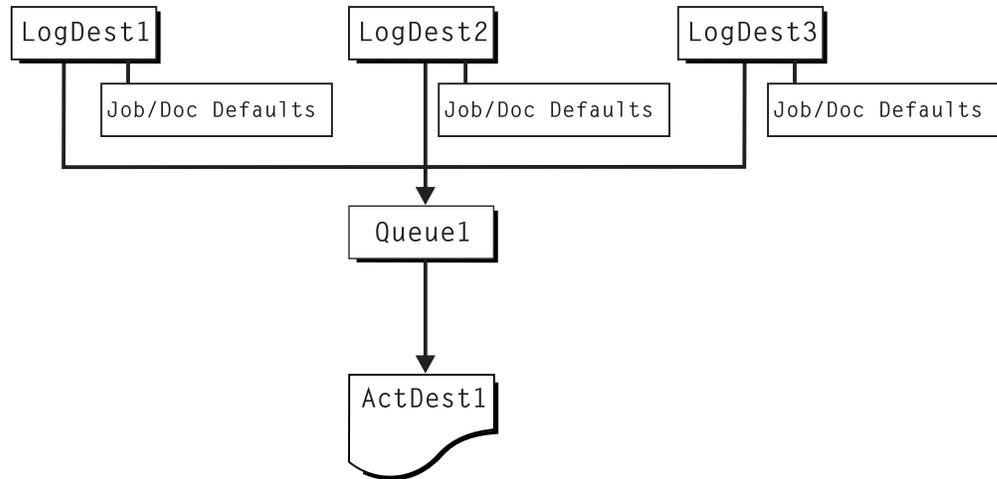


Figure 3. Funnel Destination Configuration Model

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 may configure one logical destination to provide job and document defaults for PostScript jobs and another logical destination to support jobs using AFP resources.

## About the Hourglass Destination Configuration Model

The hourglass destination configuration model, shown in Figure 4, 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.

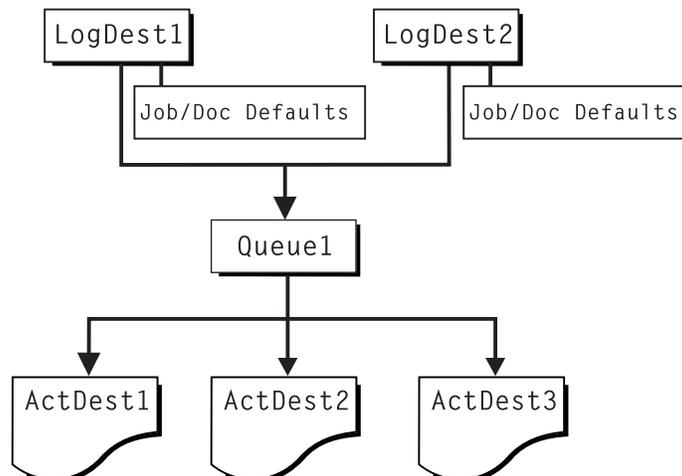


Figure 4. Hourglass Destination Configuration Model

---

## The Configuration and Management Interfaces Provided with InfoPrint

You perform most of your InfoPrint configuration and management tasks through one of the InfoPrint administrator's interfaces: the InfoPrint Visual Systems Management (VSM) graphical user interface (GUI) or the InfoPrint System Management Interface Tool (SMIT) administrator's interface. You perform very few tasks from the command line, so that you do not have to learn complex syntax or enter lengthy command strings that are prone to typographical errors.

You can customize the InfoPrint administrator's GUI to specify which InfoPrint objects, such as logical destinations and queues, you want to manage. All the interfaces provide online help so that you do not have to search hardcopy publications to access procedural information. You can quickly access the help and information you need at the time that you need it. If you are not familiar with the interfaces, this publication contains information on their use.

---

## Chapter 2. Using the InfoPrint AIX Client

When you install the InfoPrint server, you also install an InfoPrint client on the same AIX system. You can install additional clients on other AIX systems.

The InfoPrint AIX client allows you to enter InfoPrint commands on the AIX command line. It has no graphical user interface.

---

### Installing the InfoPrint AIX Client

**Attention:** The InfoPrint AIX client is available in the following languages:

- Danish
- English
- Finnish
- French
- German
- Italian
- Japanese
- Norwegian
- Simplified Chinese
- Spanish
- Swedish
- Traditional Chinese

The InfoPrint server is available in the following languages:

- English
- French
- German
- Italian
- Japanese
- Spanish

You must install the InfoPrint server either in the same language as the InfoPrintAIX client or in English.

To install the InfoPrint AIX client on an AIX system where you have not installed the InfoPrint server, follow these steps:

1. Log onto AIX as **root**.
2. Insert the gold IBM InfoPrint Manager for AIX Server 1 CD-ROM into the drive.
3. If this is the first time you have run the InfoPrint Installer on this AIX system, create the **/cdrom** file system.
  - a. Start the System Management Interface Tool (SMIT).
    - To start the AIXwindows version of SMIT, enter the following command:  
`smit cdrfs`
    - To start the ASCII version of SMIT, enter the following command:  
`smitty cdrfs`

The CDROM File Systems panel is displayed.

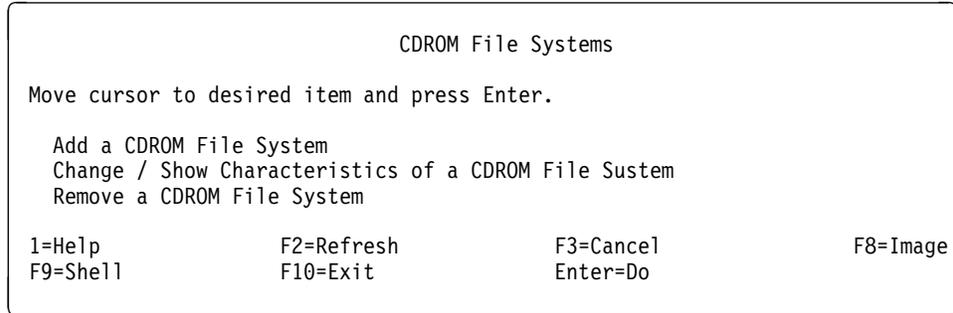


Figure 5. SMIT CDROM File Systems Panel

b. Select **Add a CDROM File System**.

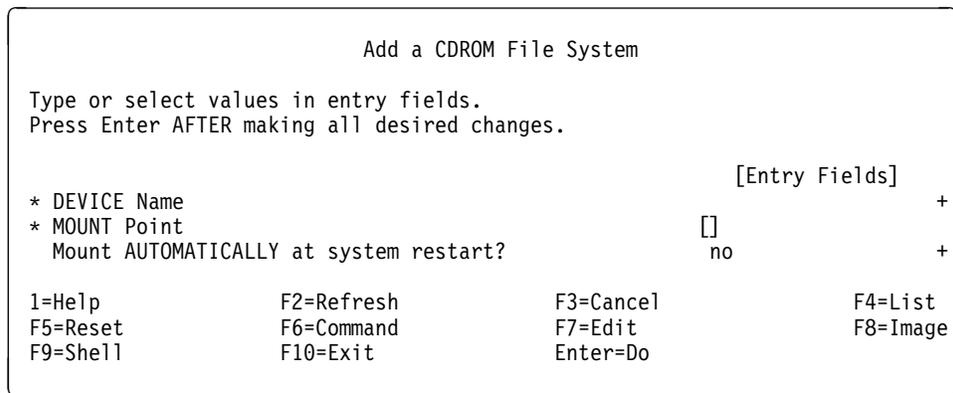


Figure 6. SMIT Add a CDROM File System Panel

- c. In the **DEVICE name** field, enter the identifier of your CD-ROM drive.
- d. In the **MOUNT POINT** field, enter **/cdrom**.
- e. Select **OK** (AIXwindows version) or press **Enter** (ASCII version).
- f. Select **Cancel** (AIXwindows version) or press **F10** (ASCII version) to exit from SMIT.

4. To mount the CD-ROM, enter:

```
mount /cdrom
```

5. Enter one of the following command to install the AIX client:

- To use the InfoPrint Installer GUI, enter:

```
/cdrom/setup -c
```

6. If your console does not support graphics, you can use the InfoPrint Installer without invoking the GUI. Enter:

```
/cdrom/setup -C -l locale -n ServerName  
-p PortNumber -P DestinationName
```

where:

*locale* is the locale of the AIX client. The default is **en\_US** (U. S. English).

*ServerName*

is the name of the InfoPrint server.

*PortNumber*

is the number of the port where the InfoPrint server is running.

*DestinationName*

is the default logical destination to which the AIX client submits jobs.  
The **-P** *DestinationName* flag is optional.

---

## Commands You Can Use from the InfoPrint AIX Client

On any AIX system, the InfoPrint AIX client allows authorized users (normally all users) to use the following InfoPrint commands:

- pdls** Lists selected attribute values for a job, destination, or other InfoPrintobject
- pdpr** Submits a job to a logical destination
- pdq** Queries the status of selected jobs, of all jobs submitted to a logical destination, or of all jobs assigned to an actual destination

If the InfoPrint AIX client and server are in the same namespace, or if the value of the server **security-level** attribute is **none**, authorized users can also use the following InfoPrint commands:

- pdcreate** Creates logical destinations, queues, actual destinations, default jobs, default documents, media, auxiliary sheets, and resource contexts
- pdclean** Removes all jobs from a server, logical destination, queue, or actual destination
- pddelete** Deletes servers, logical destinations, queues, actual destinations, default jobs, default documents, media, auxiliary sheets, resource contexts, and jobs
- pddisable** Prevents destinations from accepting jobs and logs from logging
- pdenable** Enables destinations to accept jobs and logs to log
- pdmod** Modifies the attributes of submitted jobs or of the documents in them
- pdpause** Pauses a job, actual destination, queue, or all the queues and actual destinations in a server
- pdpromote** Advances a job to the head of the queue
- pdreorder** Reassigns a job to an actual destination, or to the unassigned jobs area, in the same server or in another server, and allows you to schedule it immediately before or after another job
- pdresubmit** Resubmits a job, all the jobs submitted to a logical destination, or all the jobs in a queue to another logical destination
- pdresume** Enables paused objects to resume operation
- pdrm** Deletes jobs
- pdset** Sets or changes the values of attributes describing InfoPrint objects

**pdshutdown**

Stops servers or actual destinations

**pdspace** Backspaces or forward spaces a PSF physical printer

**Notes:**

1. For more information about InfoPrint commands and attributes, refer to *IBM InfoPrint Manager for AIX: Reference* or to the man pages. Command man pages have the same name as the command. For a list of attribute man pages, enter:  

```
man pd_att
```
2. For servers that do not use the Distributed Computing Environment (DCE), the default value of the **security-level** attribute is **low**. For servers that use DCE, the default value is **medium**.
3. If the InfoPrint server does not use DCE, users must have **read** permission for the command. By default, all users have **read** permission for the **pdls**, **pdmod**, **pdpr**, **pdq**, and **pdrm** commands. For more information, see "Working with InfoPrint Command Permissions" on page 216.
4. If the InfoPrint server uses DCE, users must have the appropriate DCE permission to issue commands affecting certain InfoPrint objects. For example, users must have DCE **read** permission for a restricted logical destination in order to submit jobs to it. (By default, logical destinations are not restricted.) Users do not need DCE permission to query, modify, or remove their own jobs. For more information, see "Managing InfoPrint Security with DCE" on page 218.

---

## Examples of Using the InfoPrint AIX Client

The *IBM InfoPrint Manager for AIX: Reference* and the command man pages show several examples of each command that you can issue from the InfoPrint AIX client. This section contains examples of using the commands to perform some common tasks.

### Filtering Destinations

To find a destination near you that can print two-sided PostScript jobs, enter:

```
pdls -c destination -f "destination-realization==actual
document-format-supported==postscript sides-supported==2"
-r "destination-location" \*:
```

The **-f** flag specifies that you want to list only actual destinations that support PostScript format and two-sided printing. The **-r** flag specifies that you want to know where the actual destinations are. The asterisk means that you want to check every server. The blank after the colon means that you want to check every destination in every server. The backslash prevents the shell from interpreting the asterisk as a special character.

InfoPrint returns information similar to the following:

```
caxton: destination-location = 3rd floor E
elzevir: destination-location =
morris: destination-location = 1st floor W
```

You decide to print your job on morris. To determine a logical destination that routes jobs to morris, enter:

```
pdls -c destination -f "destination-associated-destinations==morris" \*:
```

## Querying Destination Attributes

To determine whether morris is ready to receive jobs, enter:

```
pdls -c destination -r "destination-state" morris
```

## Submitting a Print Job

To submit the file myjob to the logical destination london, requesting two-sided printing on the actual destination morris, enter:

```
pdpr -d london -x "destination-name-requested=morris sides=2" myjob
```

## Submitting a Fax Job

To submit the cover sheet faxcover and the file Memo1 to the logical destination faxout for transmission to fax number 1-709-123-4567, enter:

```
pdpr -d faxout -x "fax-number=17091234567 document-type=cover-sheet"
-f faxcover -x "document-type=printable" Memo1
```

## Querying Jobs

To query all the jobs that you submitted to logical destination london, enter:

```
pdq -d london
```

InfoPrint returns information similar to the following:

Job ID	Name	State	Intervening Jobs	Destination Requested	Destination Assigned
13	Serv1:1104221000 report	printing	0	london	caxton
14	Serv1:1104221023 myjob	pending	8	london	morris

## Modifying Job Attributes

After submitting myjob, you decide that you want to print two copies and that you want to retain it for one hour after it prints. When you queried your jobs submitted to london, you saw that the local job ID is 14 and that the job is still pending, so it can still be modified. Enter:

```
pdmod -n 2 -x "job-retention-period=1:00" 14
```

## Modifying Destination Attributes

You want to restrict the actual destination Printer3 so that it does not accept very large jobs. To do this:

1. Before you can modify the attributes of a destination, you must disable it. Enter:

```
pddisable Printer3
```

2. To specify a new maximum job size, enter:

```
pdset -c destination -x "job-size-range-ready=0:5000000" Printer3
```

3. To reenable the actual destination, enter:

```
pdenable Printer3
```

## Shutting Down an Actual Destination

The printer device represented by the actual destination `caxton` is out of order. To shut down `caxton` until the printer device can be repaired and to associate a message with `caxton`, enter:

```
pdshutdown -c destination -m "Service called Tuesday at 3PM" caxton
```

---

## Chapter 3. Using the InfoPrint Administrator's GUI

The InfoPrint Visual Systems Management (VSM) graphical user interface (GUI) gives you the ability to perform InfoPrint administrator and operator tasks from a GUI rather than from a command line. The GUI displays objects and actions as icons that you use to monitor the status of your InfoPrint system and to perform InfoPrint tasks. Through the GUI you can expand your InfoPrint system. You can monitor InfoPrint servers, queues, logical destinations, actual destinations, media, jobs, and documents. You can also control default attribute values for jobs and documents.

This chapter presents an overview of the most important features of the GUI. After reading this information, you should start the GUI and then browse through the online help. The online help contains detailed information about all the features of the GUI and how to use them to perform system management tasks.

---

### The Basic InfoPrint Administrator's GUI and the Advanced InfoPrint Administrator's GUI

There are two versions of the InfoPrint administrator's GUI: basic and advanced. You can install either version when you install InfoPrint.

The basic InfoPrint administrator's GUI gives you a simpler view of your InfoPrint system than the advanced InfoPrint administrator's GUI. Although it offers fewer functions than the advanced InfoPrint administrator's GUI, it has some functions that the advanced InfoPrint administrator's GUI does not. For example, the basic InfoPrint administrator's GUI allows you to view the contents of a job ticket.

Using the advanced InfoPrint administrator's GUI in a basic environment allows you to perform some functions not available in the basic InfoPrint administrator's GUI. For example, you can work with queue objects. Keep in mind, though, that the basic environment makes certain assumptions about the names and attributes of some objects. If you use the advanced InfoPrint administrator's GUI to change the values of certain attributes that are not visible in the basic InfoPrint administrator's GUI, you may cause errors.

Table 1 lists the differences between the two versions.

<b>Basic InfoPrint Administrator's GUI</b>	<b>Advanced InfoPrint Administrator's GUI</b>
General	
Normally used in basic environment, but can also be used in advanced environment	Normally used in advanced environment, but can also be used in basic environment
Enforces early binding	Defaults to late binding
Hourglass destination configuration; but by default behaves like a desktop destination configuration	Any destination configuration
Windows and Views	
Three application windows	Seven application windows
Job log and job ticket windows; no event log window	Event log and job log windows; no job ticket window

Table 1 (Page 2 of 3). Differences between the Basic and Advanced InfoPrint Administrator's GUIs

Basic InfoPrint Administrator's GUI	Advanced InfoPrint Administrator's GUI
Assigned jobs appear in the Print Queue window for each actual destination	Assigned jobs appear in the Queue/Jobs window and are not sorted by actual destination
Unassigned jobs appear in the unassigned jobs area until they are scheduled to an actual destination, then disappear and reappear in the Print Queue window for the actual destination	No unassigned jobs area; unassigned jobs appear in the Queue/Jobs window with other queued jobs
Job Details view of Print Queue window shows different attributes from advanced Queue/Jobs window	Job Details view of Queue/Jobs window shows different attributes from basic Print Queue window
Objects and Attributes	
Displays logical destinations, actual destinations, media, jobs, documents, default jobs, and default documents	Displays servers, logical destinations, queues, actual destinations, jobs, documents, default jobs, and default documents
Allows you to configure important object attributes	Allows you to configure all object attributes except a few used primarily in basic installations, for example, the <b>print-quality</b> document or default document attribute
Objects: Servers	
Does not allow you to see, modify, or perform actions on servers	Allows you to see, modify, and perform actions on servers
Monitors objects in all servers in namespace	Monitors all servers in namespace or selected servers
Objects: Actual Destinations	
Full support of 3170 actual destinations	Displays 3170 actual destinations as AIX actual destinations; does not allow you to create or modify them
Red icons represent actual destinations that need attention or key operator attention	Black icons represent actual destinations that need attention or key operator attention
Does not allow you to pause or resume actual destinations	Allows you to pause and resume actual destinations
Objects: Queues	
Does not allow you to create, see, modify, or perform actions on queues.	Allows you to create, see, modify, and perform actions on queues.
All logical destinations that you create in the same server send jobs to the same default queue. All actual destinations that you create in the same server receive jobs from that queue. You cannot change this queue.	Allows you to change the queue to which a logical destination sends jobs or from which an actual destination receives jobs
Objects: Logical Destinations	
Does not allow you to identify orphan logical destinations or associate them with queues	Allows you to identify orphan logical destinations and associate them with queues
Objects: Jobs	
Normal job icons represent unassigned jobs, regardless of state	Black job icons represent paused, held, and cancelled jobs, even if unassigned
Red job icons represent jobs that require resources that are not ready or not supported, or jobs that are in danger of not printing before the deadline	Normal job icons represent jobs that require resources that are not ready or not supported, or jobs that are in danger of not printing before the deadline

<i>Table 1 (Page 3 of 3). Differences between the Basic and Advanced InfoPrint Administrator's GUIs</i>	
<b>Basic InfoPrint Administrator's GUI</b>	<b>Advanced InfoPrint Administrator's GUI</b>
Does not allow you to promote a job to the head of the queue, but allows you to reorder it relative to another job	Does not allow you to reorder a job relative to another job; but allows you to promote it to the head of the queue
Does not allow you to resubmit a job to a logical destination; but allows you to reorder it to an actual destination, server, or the unassigned jobs area	Does not allow you to reorder a job to an actual destination, server, or the unassigned jobs area; but allows you to resubmit it to a logical destination
To hold or release a job, drag and drop the <b>Interrupt</b> or <b>Resume</b> action onto the job	To hold or release a job, select <b>Yes</b> or <b>No</b> in the <b>Hold</b> field of the Job attributes notebook
Objects: Media	
Allows you to create, see, modify, and perform actions on medium objects	Does not allow you to create, see, modify, or perform actions on medium objects

Throughout this publication, references to "the InfoPrint administrator's GUI" that do not specify "basic" or "advanced" apply to either version.

---

## Prerequisites for Using the InfoPrint Administrator's GUI

Before you can start and use the InfoPrint administrator's GUI, you must complete the following prerequisite tasks:

- You must install InfoPrint and either the basic or the advanced InfoPrint administrator's GUI.
- You must be running at least a minimum InfoPrint configuration, which consists of a server, one logical destination, one queue, and one actual destination.
- You must be logged into AIX as a user with administrator permissions, for example, **root**.
- You must set your **DISPLAY** environment variable by using a standard command, such as:  

```
export DISPLAY=hostname:0
```
- You must be running the Common Desktop Environment (CDE). If the desktop does not start automatically, start it using a standard command, such as:  

```
startx -x /usr/dt/bin/Xsession -d hostname:0
```

---

## Starting and Stopping the InfoPrint Administrator's GUI

How you start the InfoPrint administrator's GUI depends on:

- Whether you installed a basic or advanced InfoPrint system. In basic installations, the front panel of the desktop is customized for InfoPrint.
- Whether you want to start the basic or advanced InfoPrint administrator's GUI. Normally the basic InfoPrint administrator's GUI runs in basic installations and the advanced InfoPrint administrator's GUI runs in advanced installations, but you can use either InfoPrint administrator's GUI in either InfoPrint environment.

To stop either the basic or the advanced InfoPrint administrator's GUI, click on the **Exit** button in the bottom left corner of each open application window.

## Starting the Basic InfoPrint Administrator's GUI in a Basic Environment

**Note:** If the **InfoPrint** icon does not appear on the front panel of the desktop, you have an advanced environment. See “Starting the Basic InfoPrint Administrator's GUI in an Advanced Environment” on page 23 or “Starting the Advanced InfoPrint Administrator's GUI” on page 24 .

To open the basic InfoPrint administrator's GUI in a basic environment:

1. Select the arrow over the **InfoPrint** icon to display the IBM InfoPrint popup.
2. Select **Print Administration** to open a Print Administration window similar to Figure 7; or select **Print Management** to open a Print Management window similar to Figure 8 on page 23.

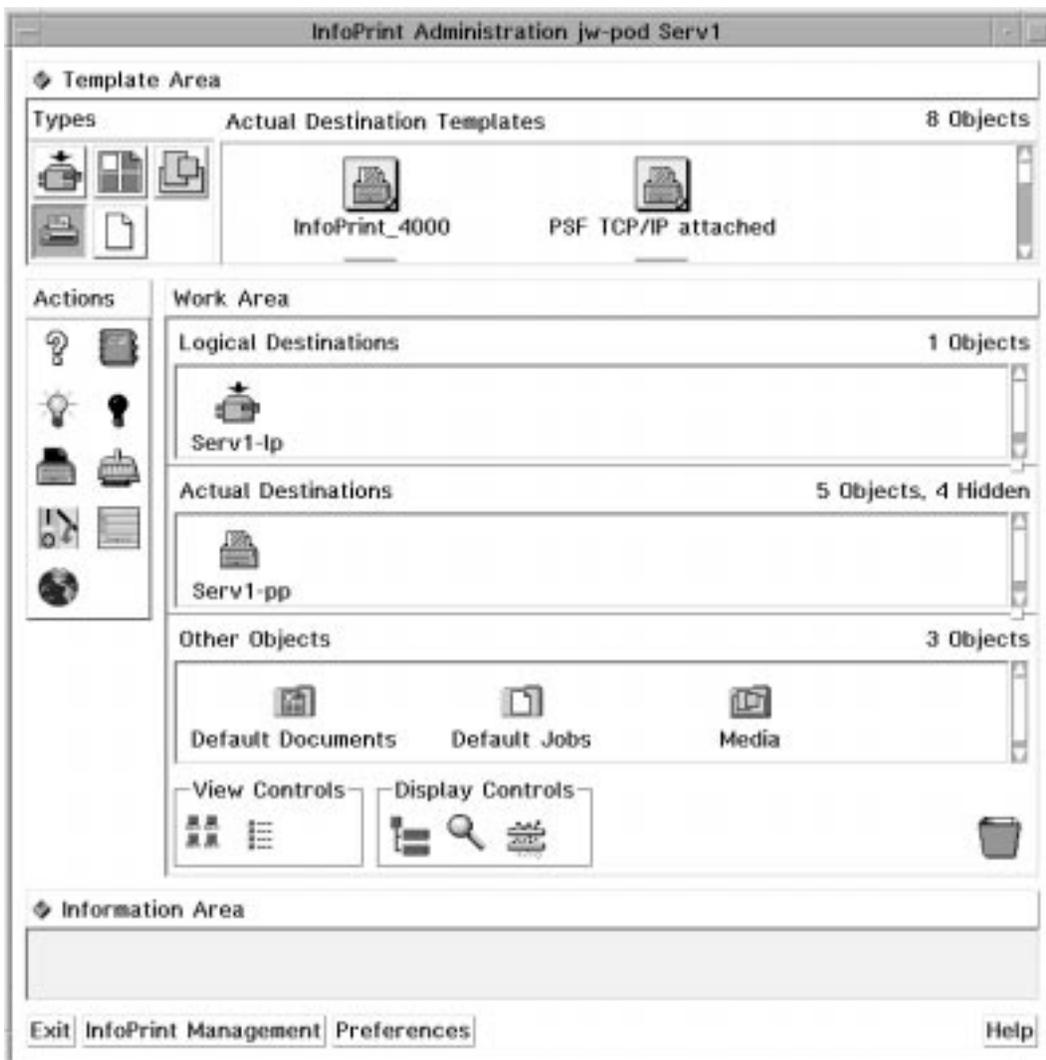


Figure 7. Print Administration Window (Basic InfoPrint Administrator's GUI)

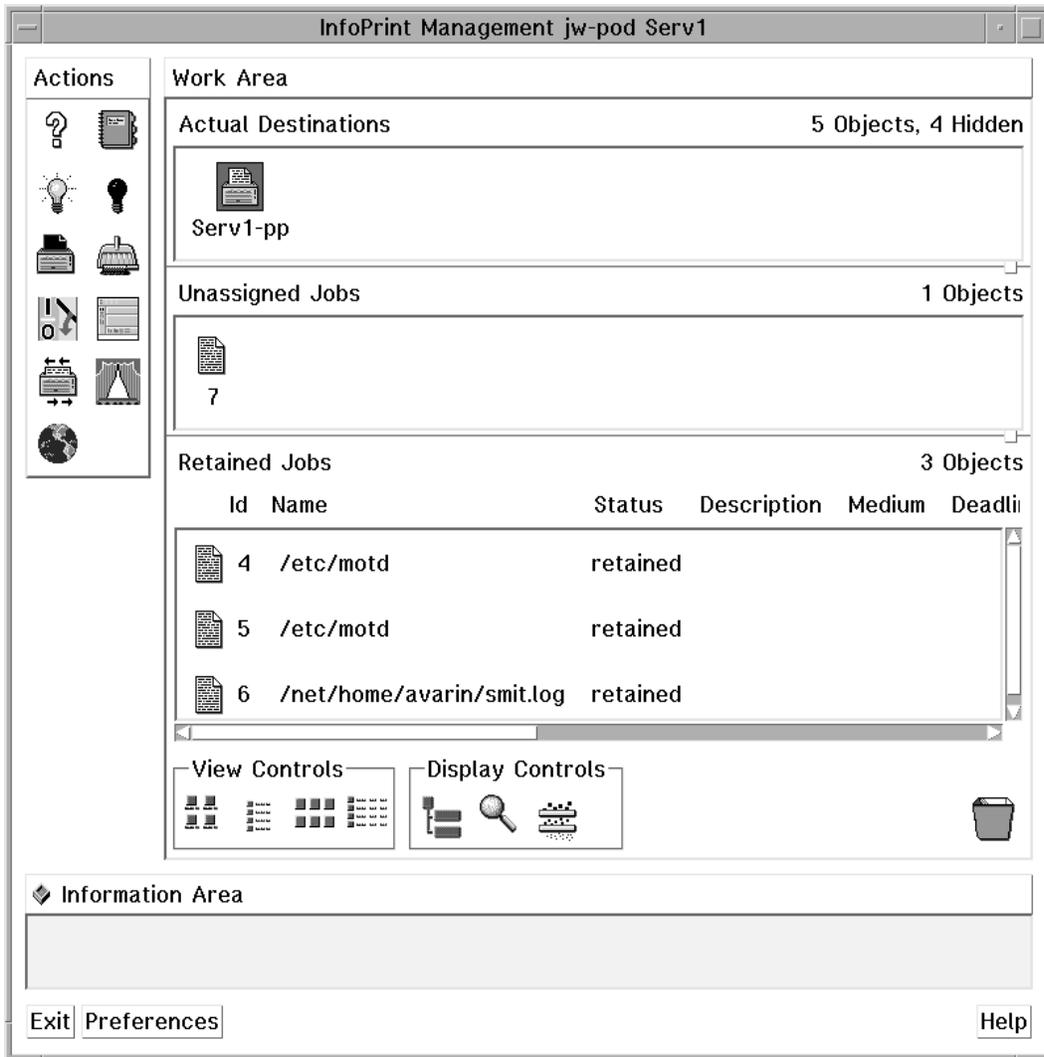


Figure 8. Print Management Window (Basic InfoPrint Administrator's GUI)

## Starting the Basic InfoPrint Administrator's GUI in an Advanced Environment

**Note:** If the InfoPrint icon appears on the front panel of the desktop, you have a basic environment. See “Starting the Basic InfoPrint Administrator's GUI in a Basic Environment” on page 22.

To open the basic InfoPrint administrator's GUI in an advanced environment, you must use the AIX command line. Enter:

```
admingui
```

to open a Print Administration window similar to Figure 7 on page 22; or enter:

```
opergui
```

to open a Print Management window similar to Figure 8.

## Starting the Advanced InfoPrint Administrator's GUI

**Note:** If the InfoPrint icon appears on the front panel of the desktop, you have a basic environment. If you still want to start the advanced InfoPrint administrator's GUI, this section applies. To start the basic InfoPrint administrator's GUI, see "Starting the Basic InfoPrint Administrator's GUI in a Basic Environment" on page 22.

To start the advanced InfoPrint administrator's GUI from either an advanced or a basic environment:

1. Click on the **Application Manager** icon, which looks like an open file drawer with a calculator, to open the Application Manager window. Among the application icons, there is a folder icon for the InfoPrintapplication group.
2. Double-click on the **InfoPrint** folder to open the InfoPrint Application Group window. This window displays icons representing different parts of the InfoPrint GUIs.
3. Double-click on the **Administration GUI** icon to open an InfoPrint Servers window similar to Figure 9 on page 25.

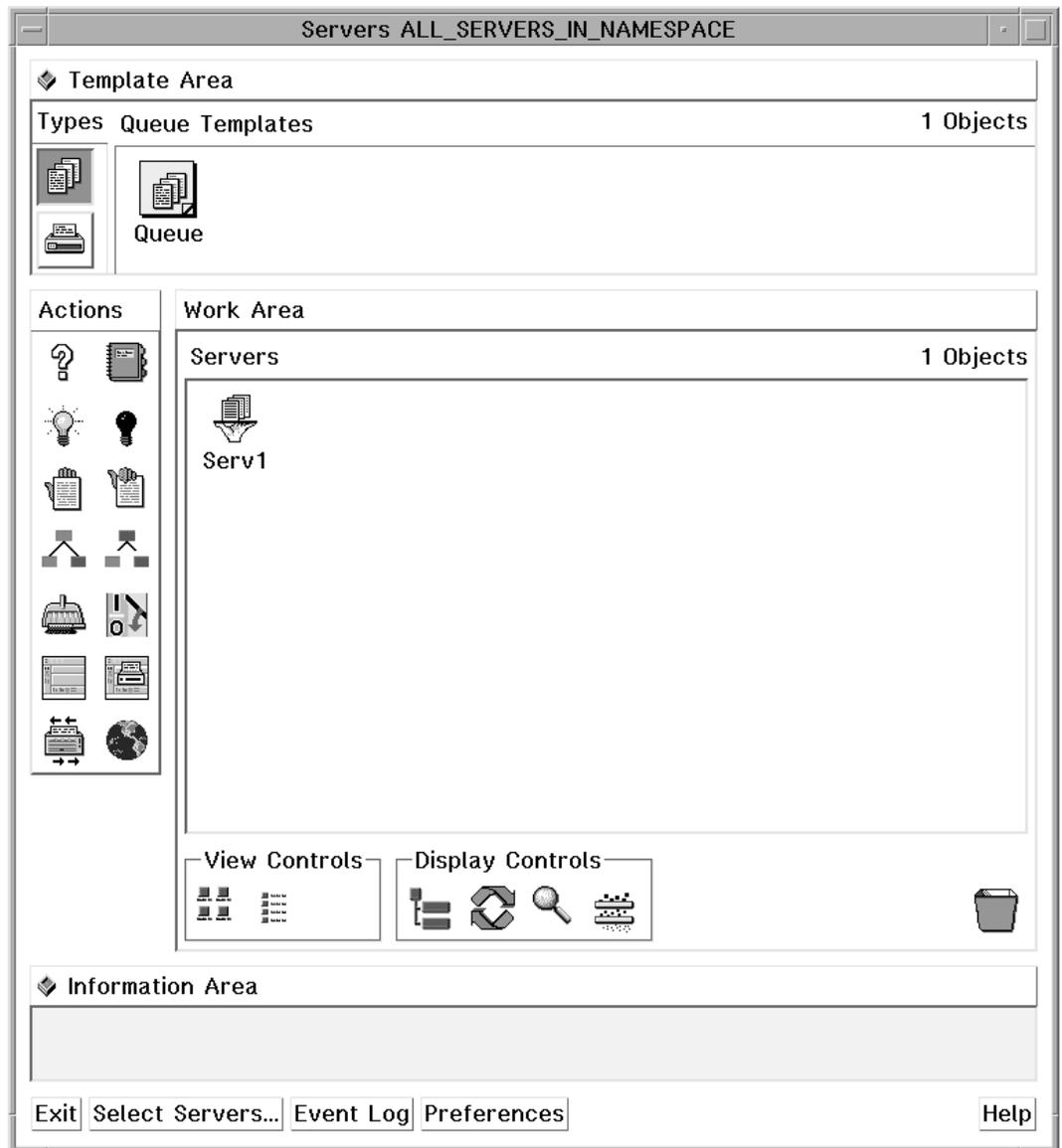


Figure 9. InfoPrint Servers Window (Advanced InfoPrint Administrator's GUI)

## Understanding the InfoPrint Administrator's GUI Windows

The InfoPrint administrator's GUI uses application windows, dialog windows, and message windows to display and receive information. Also, the GUI uses notebooks and templates to group related types of information.

## The Basic InfoPrint Administrator's GUI Application Windows

The application windows of the basic InfoPrint administrator's GUI let you monitor and work with icons that represent the InfoPrint objects in your print environment. The InfoPrint object icons represent logical destinations, actual destinations, media, default job objects, jobs, default document objects, and documents.

The organization of the basic application windows corresponds to the organization of tasks. The Print Administration window displays all the objects that

administrators work with. From it, you can open the Print Management window, which displays objects that either administrators or operators work with. From a selected actual destination in the Print Management window, you can open a Print Queue window that displays the jobs assigned to that actual destination.

Figure 10 shows the basic InfoPrint administrator's GUI application windows hierarchy and lists the objects displayed in each window.

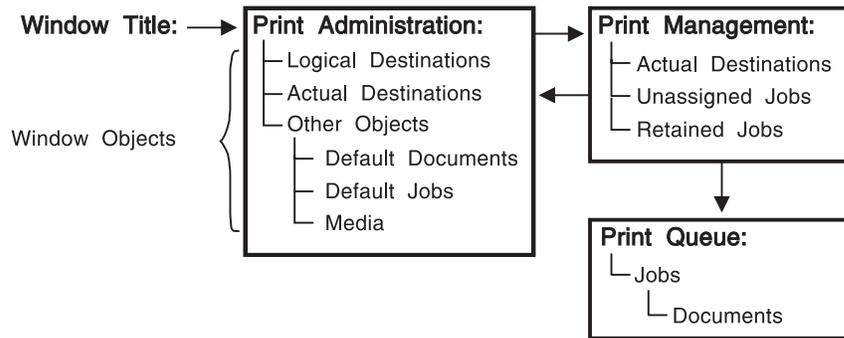


Figure 10. Basic InfoPrint Administrator's GUI Application Windows Hierarchy

## The Advanced InfoPrint Administrator's GUI Application Windows

The application windows of the advanced InfoPrint administrator's GUI let you monitor and work with icons that represent the InfoPrint objects in your print environment. The InfoPrintobject icons represent servers, queues, logical destinations, actual destinations, default job objects, jobs, default document objects, and documents.

The organization of the advanced application windows corresponds to the hierarchy of InfoPrint objects. From a selected object in one window, you can open another window that contains objects that are related to the selected object.

Figure 11 on page 27 shows the advanced InfoPrint administrator's GUI application windows hierarchy and lists the objects that are displayed in each window.

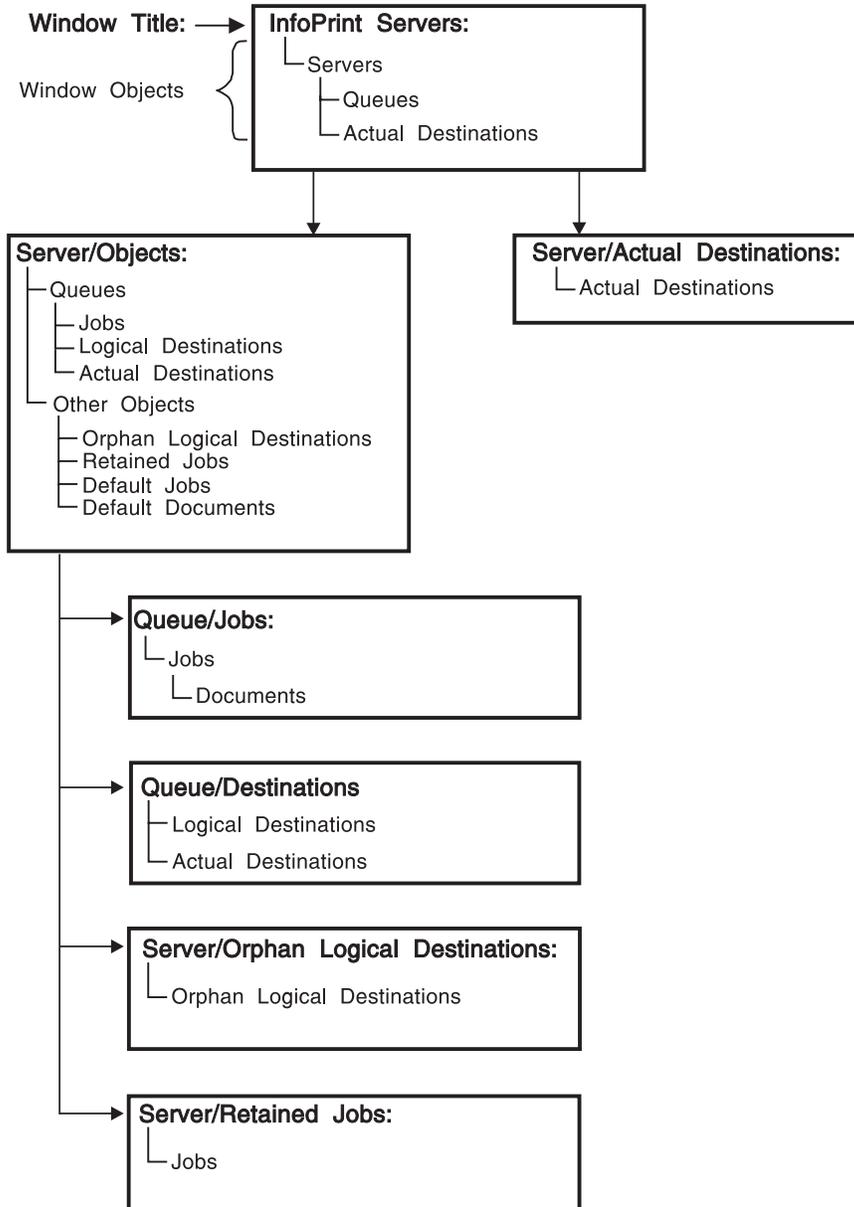


Figure 11. Advanced InfoPrint Administrator's GUI Application Windows Hierarchy

## The Format and Icons Used in InfoPrint Administrator's GUI Application Windows

The application windows all have the same format. An application window contains an Actions area, a Work Area, and an Information Area. If you can create objects from the window, it also contains a Template Area. Both the Print Administration window of the basic InfoPrint administrator's GUI (Figure 7 on page 22) and the Servers window of the advanced InfoPrint administrator's GUI (Figure 9 on page 25) contain each of these areas.

## The Template Area

The Template Area contains icons that you use to create new objects. All advanced application windows except the Queue/Jobs: and the Server/Retained Jobs: windows, and the basic Print Administration window, contain Template Areas. Depending on the window, templates are available for the following objects:

- Default document objects
- Default job objects
- Logical destinations
- Queues
- Actual destinations
- Media

The name of the template appears below the template icon.

## The Actions Area

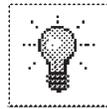
The Actions area contains icons that you use to perform specific actions on objects in the window. Which of the following action icons are available depends on the window and, in the basic InfoPrint administrator's GUI, on your selections in the User Preferences dialog.



Clean



Disable (Hold)



Enable (Release)



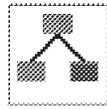
Global Change



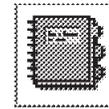
Help



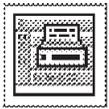
Interrupt



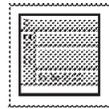
Manage



Notebook



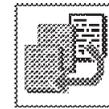
Open Printers Window



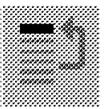
Open Window



Pause



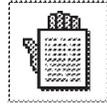
Promote



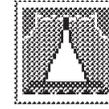
Reorder First



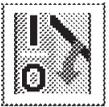
Reorder Last



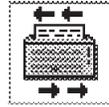
Resume



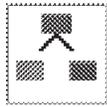
Show



Shut Down



Space



Unmanage

Action names do not appear below the icons. If you are not familiar with an icon, position your mouse pointer over the icon and read its description in the Information Area.

## The Work Area

The Work Area contains icons that represent objects in your InfoPrint system. It also contains controls that you use to change how and which icons display. Depending on the window, object icons are available for the following objects and folders:

- Actual destinations
- Default document folders
- Default document objects
- Default job folders
- Default job objects
- Logical destinations
- Documents
- Jobs
- Media (basic InfoPrint administrator's GUI only)
- Medium folders (basic InfoPrint administrator's GUI only)
- Queues (advanced InfoPrint administrator's GUI only)
- Orphan logical destination folders (advanced InfoPrint administrator's GUI only)
- Orphan logical destinations (advanced InfoPrint administrator's GUI only)
- Retained job folders (advanced InfoPrint administrator's GUI only)
- Retained jobs
- Servers (advanced InfoPrint administrator's GUI only)
- Unassigned jobs (basic InfoPrint administrator's GUI only; in the advanced InfoPrint administrator's GUI jobs are unassigned before processing by default, so unassigned jobs are not distinguished from other jobs)

The name of the object appears below the icon.

The Work Area may be split into *panes* that contain different classes of objects. Figure 9 on page 25 shows a pane for servers in the Work Area. Figure 7 on page 22 shows three panes for logical destinations, actual destinations, and other objects.

When an object in a pane has related objects, you can open a new space within the pane that is called a *well*. A well is connected to the object and displays its related objects. Figure 9 shows a well for queues. The online help describes the various ways to open and close wells.

You use the View Controls in the Work Area to control the size of icons in the Work Area.

You use the Display Controls to open panes and wells in the Work Area, find specific InfoPrint objects, and filter the objects displayed.

## The Information Area

The Information Area, at the bottom of an application window, displays context-sensitive help according to the position of the mouse pointer. The context-sensitive help provides high-level instructions for performing tasks.

## Dialog Windows

Dialog windows appear when InfoPrint displays information that you can modify or when InfoPrint requires information from you for completing a task.

The dialog window used most frequently is the notebook dialog, which you use for viewing and changing the attribute values of an object or template. Tabs organize the attributes in the notebook. When you open the notebook by dragging the **Notebook** icon and dropping it on an object icon, the **Summary** tab displays. To view a different tab, click on the **Summary** application group button to display a list of all the tabs. Then select a new tab from the list.

Figure 12 shows a dialog window that displays the **Summary** tab of the notebook for a queue.

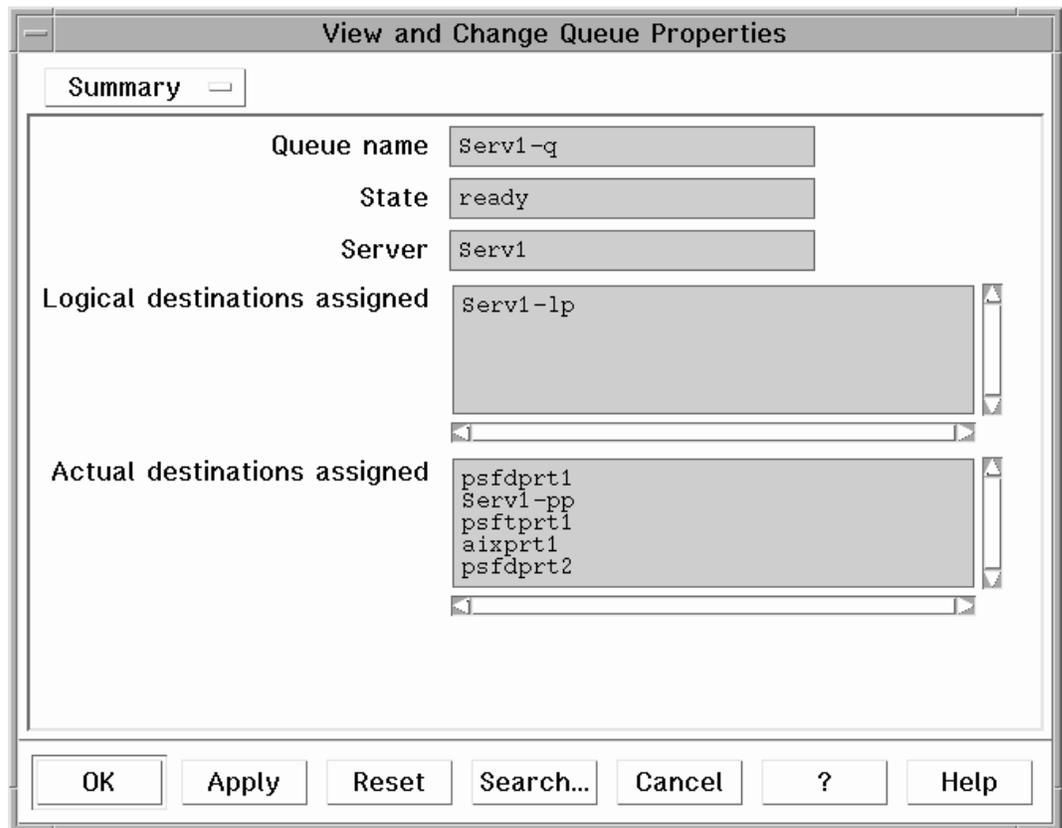


Figure 12. A Queue Attributes Notebook Dialog Window

Dialog windows also contain buttons at the bottom that you use to perform tasks, such as searching for attributes and applying changes. Two of the buttons, one labeled with a question mark (?) and one labeled **Help**, provide help information on performing tasks through the dialog window.

## Message Windows

Message windows present information that you need to know or request information from you that InfoPrint needs to continue processing. For example, if you delete a group of objects, you see a message window that lists the objects selected for deletion and asks you to confirm your action.

Figure 13 on page 31 shows a message window.

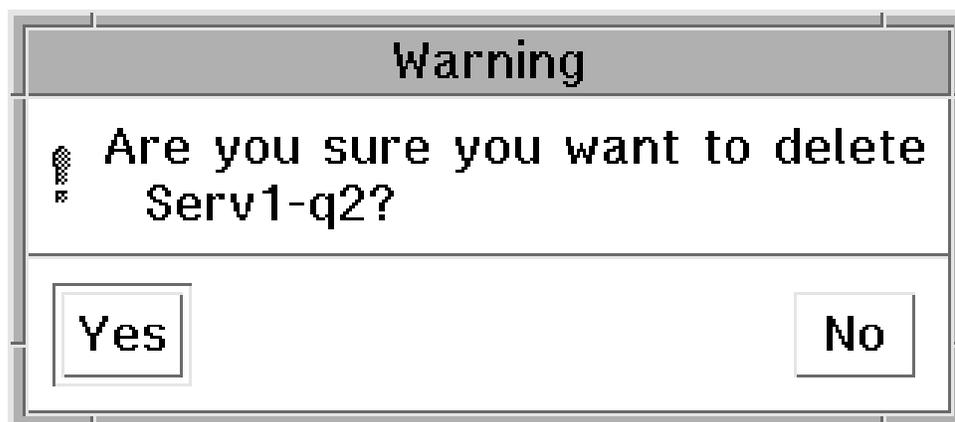


Figure 13. A Message Window

---

## Completing Tasks from the InfoPrint Administrator's GUI



International No  
Symbol

You can use the template, action, object, view control, and display control icons in an application window in a variety of ways to perform administrative tasks with the GUI. The phrase *drag and drop* describes the procedure by which you use the icons to perform the actions and complete the tasks in application windows. Using the mouse, you drag (move) an action or object icon to a new position over another icon or into an area where you want the action or task to occur. If the action is valid, a box appears around the two icons. If the action is not valid, no box appears and an international no symbol (a circle with a diagonal line), displays stays within the icon you dragged.

Following are several examples of performing tasks with the GUI.

### Dragging and Dropping Actions onto Objects

Figure 14 on page 32 shows an example of performing a task by dragging and dropping an action onto an object. For example, to open the *Server/Objects* window for a server, use the middle mouse button to drag the *Open Window* action and drop it onto the server icon. The *Server/Objects* window displays the queues and the *Retained Jobs*, *Orphan Logical Destinations*, *Default Documents*, and *Default Jobs* folders for the server.

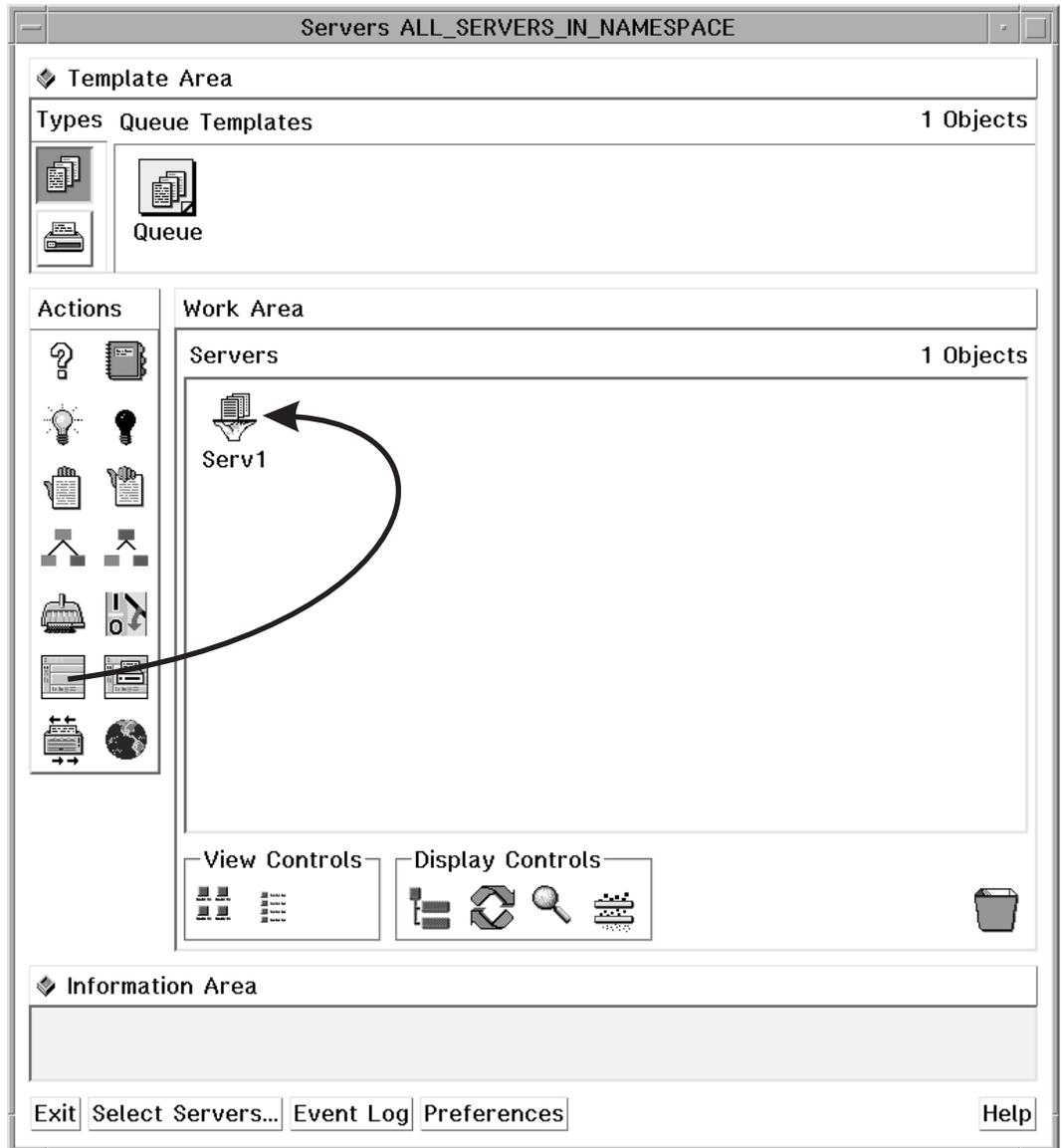


Figure 14. Opening the Server/Objects Window

## Dragging and Dropping Objects onto Objects

Figure 15 on page 33 shows an example of performing a task by dragging and dropping one object onto another object. For example, to assign an actual destination to a new queue, use the middle mouse button to drag the actual destination and drop it onto another queue. This removes the actual destination icon from its old queue and adds it to the new queue.

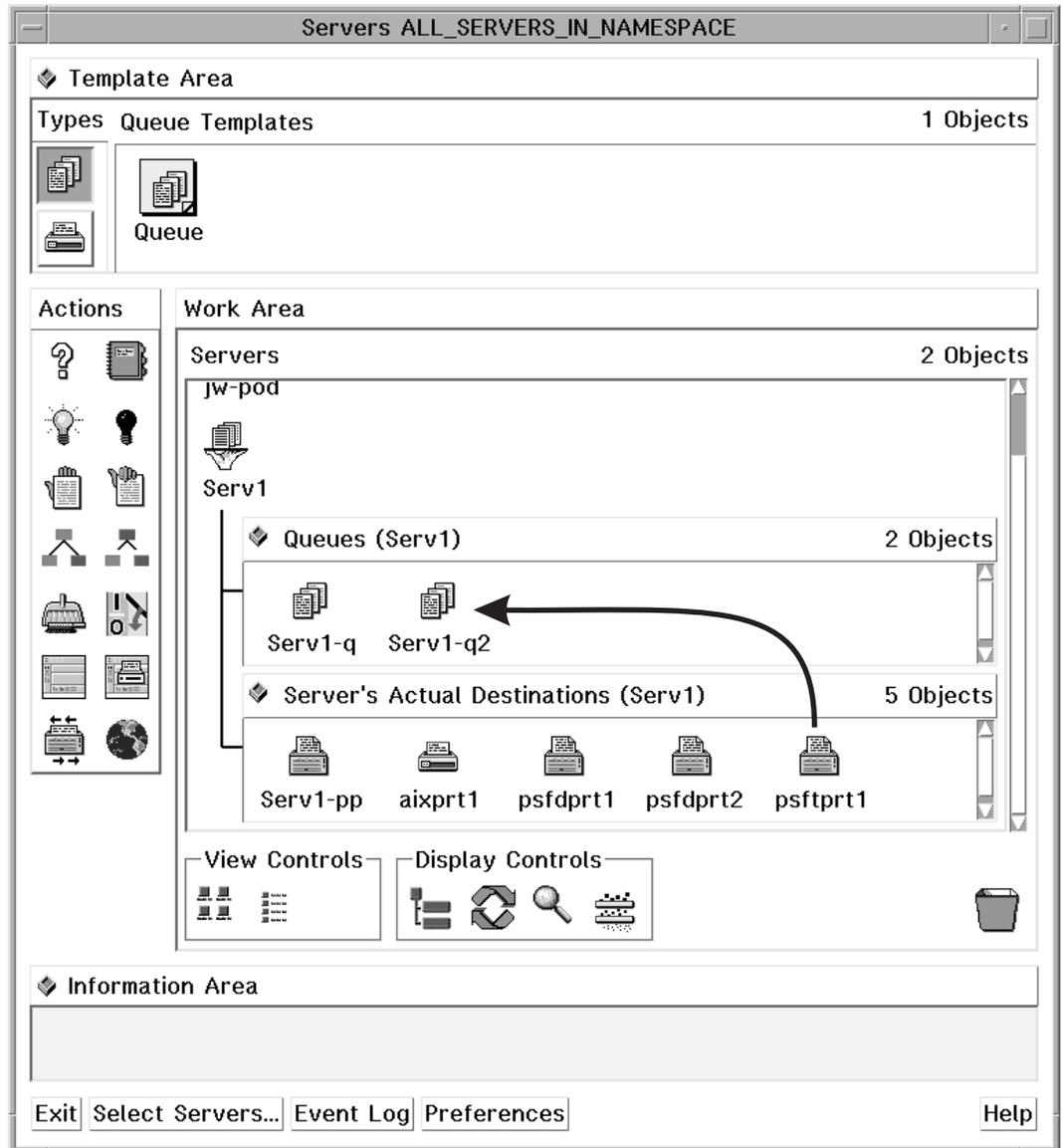


Figure 15. Assigning an Actual Destination to a New Queue

## Dragging and Dropping a Template onto a Work Area

Figure 16 on page 34 shows an example of performing a task by dragging and dropping a template into an area. For example, to create a new queue, use the middle mouse button to drag a queue template and drop it into the Queues well of the Servers window. A dialog window displays where you enter the name for the new queue. Enter a name and click on the **OK** button in the dialog window. This action creates a new queue that has the same values for its attributes as the values of the queue template you used. An icon for the new queue displays in the well.

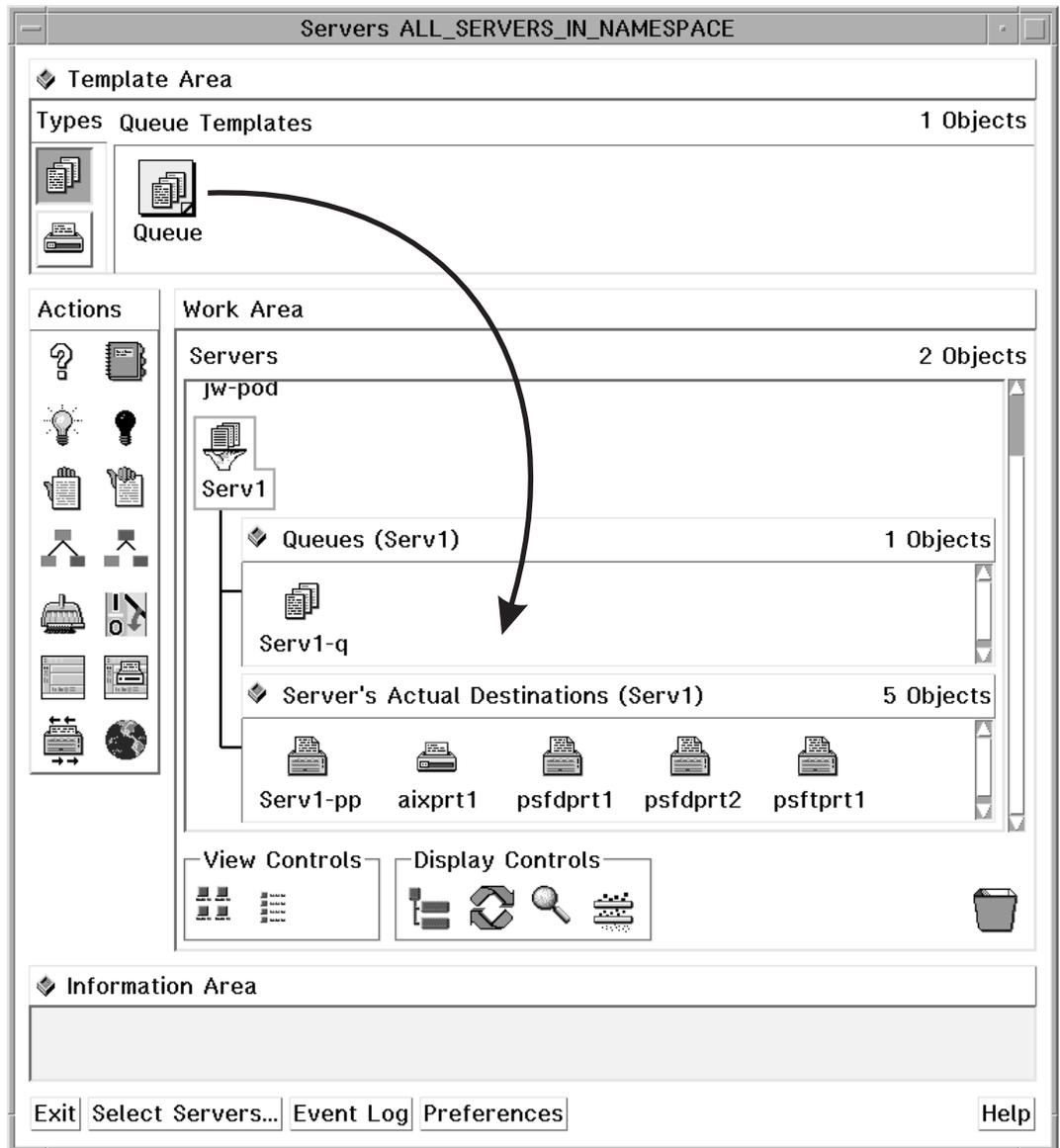


Figure 16. Creating a New Queue

## Performing the Same Task on Multiple Objects at the Same Time

Figure 17 on page 35 shows an example of performing a task on multiple objects by selecting the objects and dragging and dropping one of them onto an action. For example, to disable multiple actual destinations, select multiple actual destinations and then use the middle mouse button to drag and drop one of them onto the Disable action. You select multiple objects by using the mouse to draw a box around multiple icons, or by holding down the **Shift** key and clicking on two or more icons.

Note that dragging one of the selected objects to a target is the same as dragging all of the objects. However, dragging an action to a group of selected objects only affects the object in the group on which you drop the action. A group of selected objects cannot act as one target.

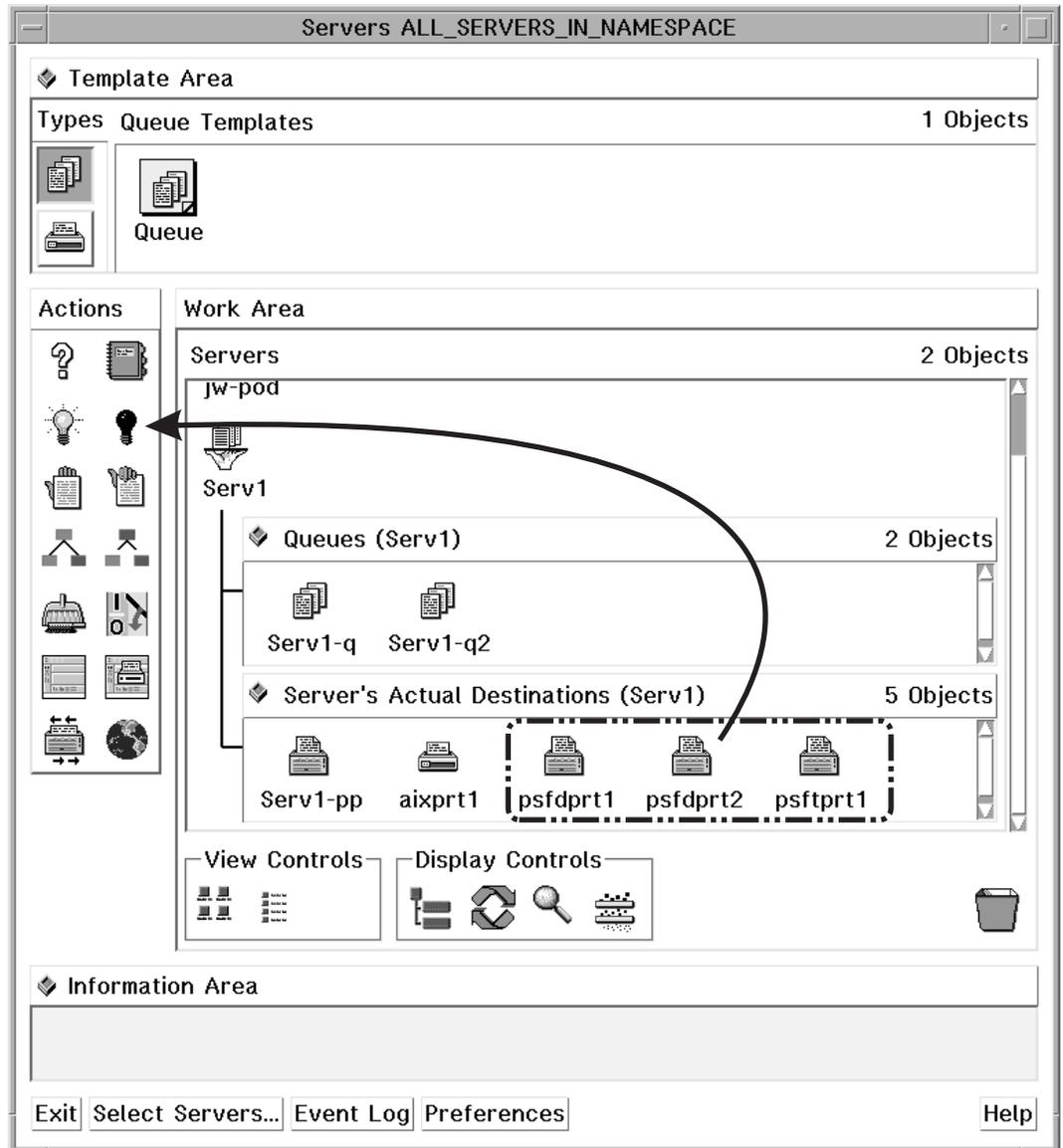


Figure 17. Disabling Multiple Actual Destinations

## Other Methods of Performing Tasks

The preceding figures display the drag and drop method for performing tasks within a single window. However, you can also drag and drop some objects across windows, and you can also use methods other than drag and drop. You can select an object and then select an action, double-click on an object, or choose an item from a pop-up menu. You can access pop-up menus by positioning the mouse pointer over an object or area and holding down the right mouse button.

Refer to the online help for additional information about tasks and the methods for performing them. See “Using Online Help” on page 36.

---

## Using Online Help

Extensive information about using the InfoPrint administrator's GUI and the tasks you can perform with it is available online. This section describes the different types of online help available and how to access them.

### The Information Area

The Information Area in an application or dialog window provides context-sensitive help according to the position of the cursor. To display brief information about a title, template, object, area, or button, move your cursor over the item or area. The information area is helpful for learning the application or for refreshing your memory.

The Information Area automatically appears in each application window. To close the Information Area in an application window, click on the area control button in the upper left corner of the Information Area.

In a dialog window the Information Area opens when you click on the ? button at the bottom of the window. To close the Information Area in a dialog window, click on the **OK** button at the bottom of the Information Area.

### The Help Button

Clicking on the **Help** button in the lower right corner of an application window or a dialog window opens a new window that displays online help for InfoPrint.

Figure 18 on page 37 shows the help window that displays when you click on the **Help** button in a Server/Objects window. The specific information displayed is about the application window. However, once you have opened an online help window, you can browse the help information and view information about any window, area, template, object, action, button, or task.

Clicking on the **Help** button in a dialog window opens a help window that displays information about each field and button in that dialog. The help also provides a way to view more general information about using dialog windows.

Use any of the following methods to browse through the information:

- Select hypertext links (underscored words) within the help text.
- Select a topic from the topic hierarchy.
- Use the **Navigate** menu options.
- Use the **Search** facility.

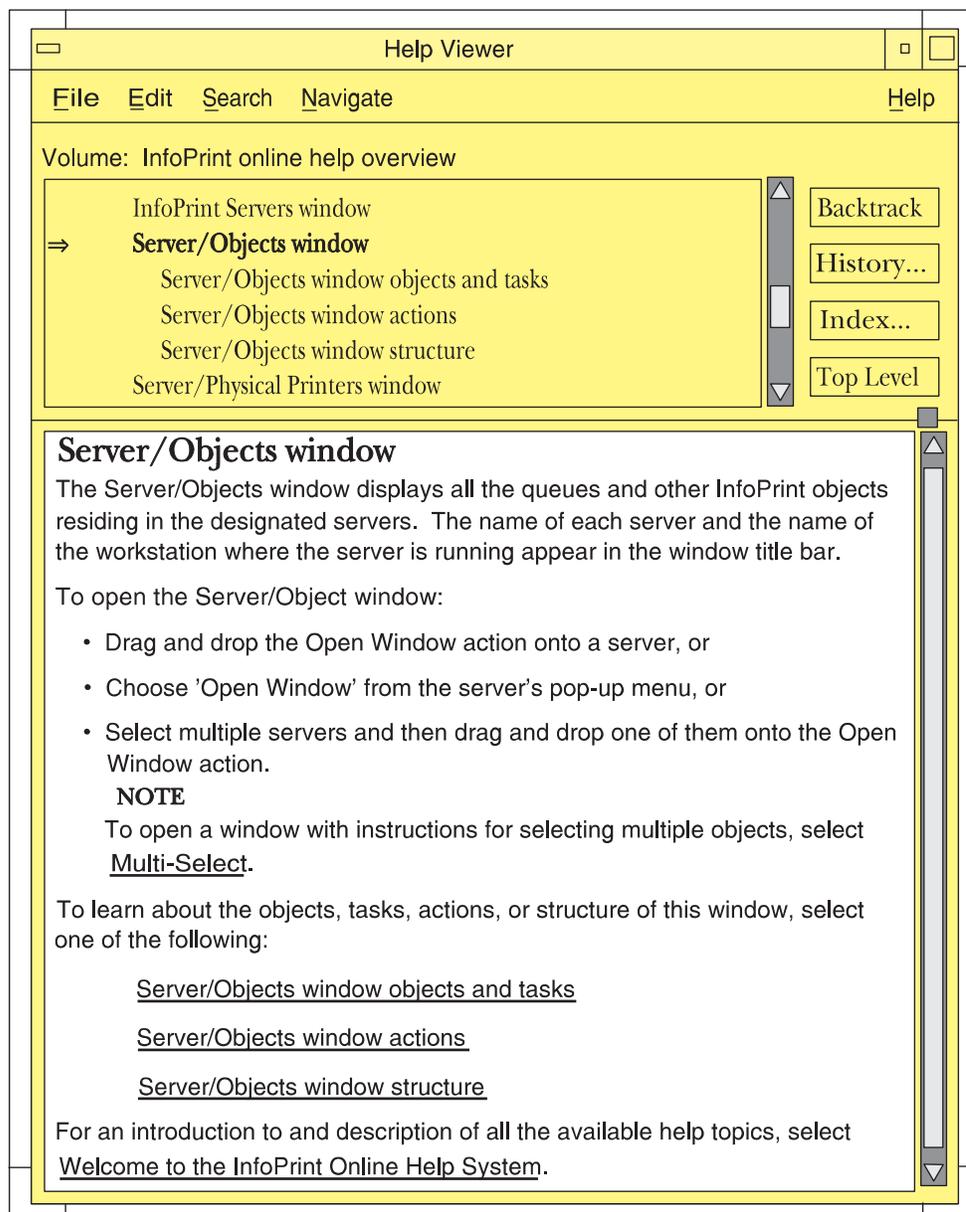


Figure 18. Introductory Topic for the Server/Objects Window Online Help

The following is an example of one way you could navigate through the online help system. You can use this as a tutorial any time that you run the InfoPrint administrator's GUI.

## Finding Information in the Online Help Volumes

You can find information about a given subject by viewing the help information with or without using the help index. Using the help index can take a long time, because sometimes you may need to search all the Help Volumes.

The primary Help Volume contains some information and a list of main subjects from which you can select. Selecting a main subject will bring up a new list, which contains secondary level subjects. This list is also selectable. When you select the secondary level subject, the window displays the help on that subject; or a new Help Volume for a special subject opens. You can also access help about an icon

by dragging the ? (Help) icon from the Action area and dropping it on the other icon, such as an actual destination icon. You can access help about a dialog window by clicking on the **Help** button in that window.

### Example of Using Help Volumes to Locate Information

You might use a procedure similar to this if you know where the information you want is located:

1. Select the **Help** button on a GUI application window.

The Help Viewer window opens.

2. Scroll to the top of the selection list or select the **Navigate** menu choice and select **Home Topic**.

If you scrolled to the top of the selection list, select **Welcome to the InfoPrint Online Help System**.

3. Read the information in the window. To find information about a given subject, you can look at the InfoPrint Help Volumes that are available.

- a. Select **InfoPrint Help Volumes** from the list or select the underlined text in the help information section of the window.

This brings up the primary (first) list of Help Volumes. Select the one that contains the information you are looking for.

- b. In this example, select **Help for Actual Destination Attributes and Task**.

This brings up a new window that contains a list of secondary Help Volumes. These volumes contain information about the attributes of actual destinations and the windows where you set those attributes.

- c. In this example, select **PSF Physical Printer Template Attribute Notebook**. Read the information provided. After the help information is the secondary list that contains a list of tabs for that notebook. These tabs contain attributes and other data fields where you can set values. Selecting one of these tabs brings up a list of those items that the system sets or that you can change.

- d. In this example, select **Summary Tab**.

This brings up a list of the subjects and attributes on this tab. Selecting one of those items brings up the help information for that item. Select several of the subjects and read the help information.

**Note:** If you know the attribute you are looking for, but not which tab contains the attribute, you can use the help index to find the information.

### Using the Help Index

Currently, you have the **PSF Physical Printer Template Attribute Notebook** selected. You want to know information about the **port number** and which tab it appears on.

1. Select the **Index...** button.

This brings up the Help - Index Search window.

2. Select **Current** in the Search menu and **Entries with** in the Show menu.
3. Enter **port number** in the entry field.
4. Select the **Start Search** button.

A list of entries with **Port Number** appears in the Help - Index Search window.

5. In this example, select **Postscript server port number**.

The help information for this subject is displayed in the Help Viewer window. If you want to know which tab contains this attribute, scroll up in the select list until you see the tab name.

## The Help (?) Action

The Help action, whose icon is the question mark (?) in the Actions area of an application window, provides another way to access information in online help for InfoPrint.

To open the online help and display the help information about a specific template, object, action, control, area or button in an application window, drag and drop the Help action onto the icon or into the area for which you want help. The Help Viewer window opens, displaying the help information.

## Task Help

In addition to information about the objects, actions and areas in a window, the online help contains directions for using the GUI template, object, and action icons to perform administrative tasks. To locate the help information about how to perform a task related to an object, do the following steps:

1. Drag and drop the Help action onto an object. This opens the online help and displays the information about that object.
2. Select the underlined **Tasks** phrase to display the list of tasks associated with that object.
3. Select a task from the list. This displays the help topic that describes how to perform that task.

For example, to find the task help on how to clean a queue, drag and drop the Help action onto a queue. The online help opens at the information about the queue object. Select the underlined **Queue Tasks** topic in the help window. This displays the list of queue tasks, as shown in Figure 19 on page 40.

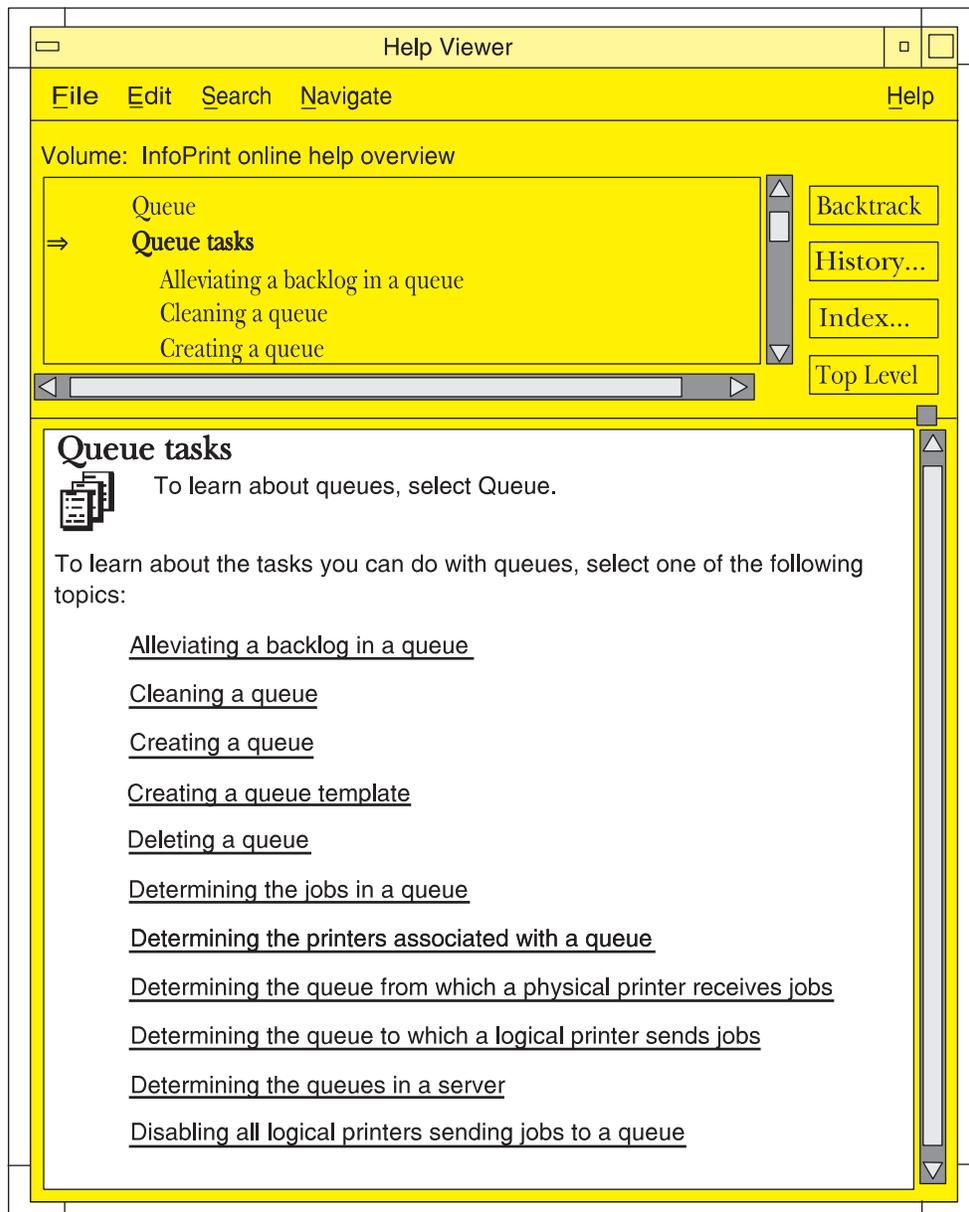


Figure 19. Task List for Queues

From the list of queue tasks, select the task labeled **Cleaning a queue**. This displays the task instructions, as shown in Figure 20 on page 41.

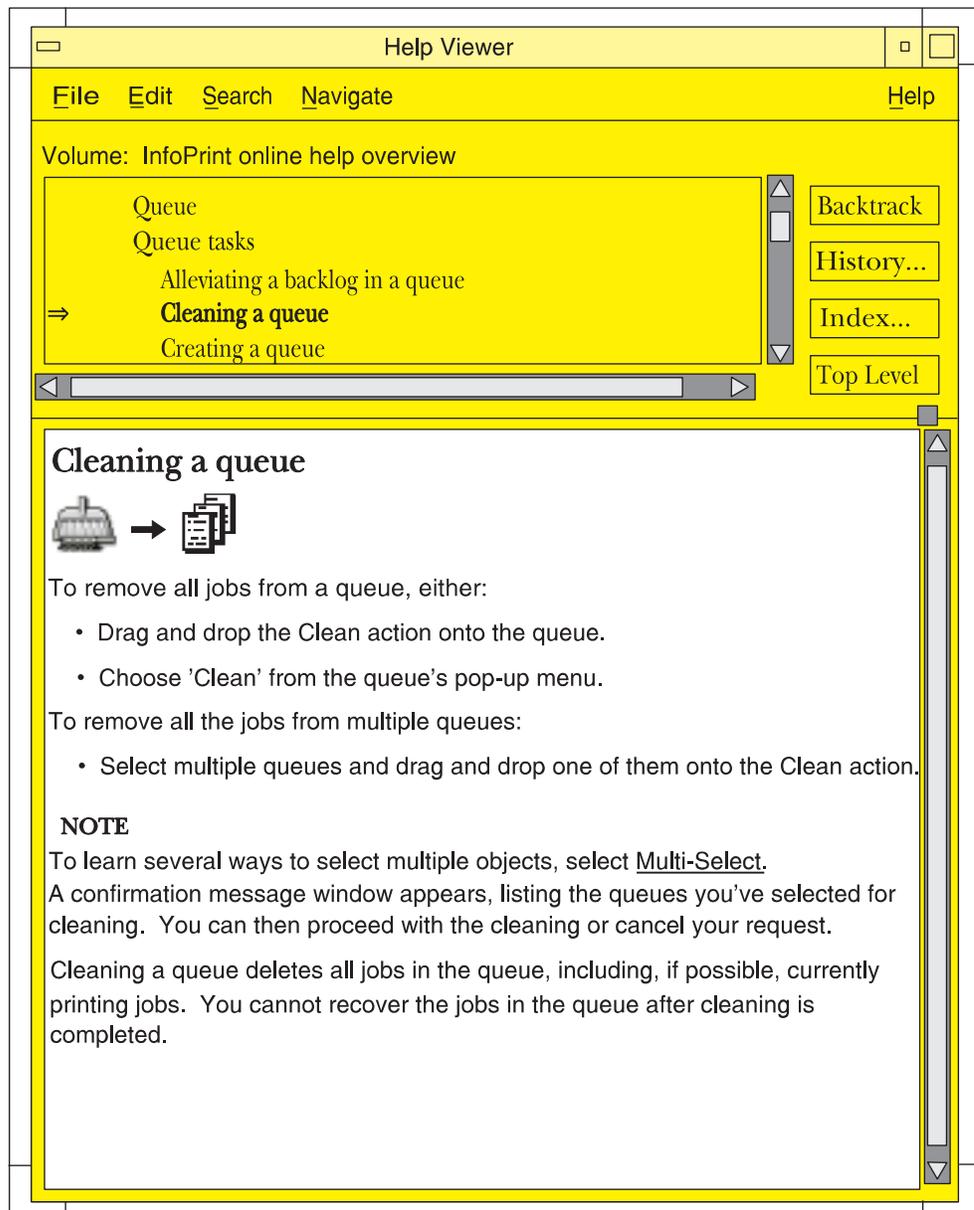


Figure 20. Cleaning a Queue Task

## Monitoring InfoPrint Using the InfoPrint Administrator's GUI

You can customize the GUI to meet your InfoPrint monitoring needs. You can select which servers to monitor and which GUI windows to open or close. Changes to icons represent changes in your InfoPrint environment; you can control whether changes to some objects cause icon changes. The choices you make affect the performance and response time of your system.

## Presentation of Events

You initiate an operation by dragging and dropping an icon, selecting a button, or selecting a menu item. InfoPrint responds to your request by performing the task and delivering event notifications to your GUI as it processes your request. When someone else completes an operation or when an event of interest to someone occurs in InfoPrint, your GUI receives asynchronous notification about the event. Asynchronous notifications occur without a regular or predictable time relationship to your actions. As events occur, InfoPrint provides notifications about them in two ways.

### Changes to Icon Appearance

When possible, InfoPrint presents notifications as icon appearance changes. For example:

- When you or someone else creates an actual destination, InfoPrint adds its icon to the Work Area.
- When you or someone else deletes an actual destination, InfoPrint removes its icon from the Work Area.
- When you disable an actual destination, InfoPrint blacks out its icon.
- When a queue becomes backlogged, part of its icon changes color to red.

### Entries in an Event Log

If you open an InfoPrint Event Log window from the advanced InfoPrint administrator's GUI, InfoPrint presents all events as entries in the event log. For example:

- When you modify the attributes of an actual destination, its icon does not change, but InfoPrint makes an entry in the event log.
- When you clean a printer, its icon does not change, but InfoPrint makes an entry in the event log.
- When InfoPrint assigns a job to a queue, it makes an entry in the event log, as shown in Figure 21 on page 43. The job icon appears in the well for the queue and in the Queue/Jobs window. As InfoPrint processes the job, it makes an entry in the event log, and the job icon changes to a job processing icon. When the job completes, InfoPrint makes an entry in the event log. InfoPrint deletes the icon for the job or moves the icon to the retained jobs folder if the job has a non-zero retention period.



Figure 21. The Event Log Window

The Event Log window can function and log events with or without the other InfoPrint administrator's GUI application windows being open. You can open the Event Log window from the Desktop in the same way you open the Servers window (see "Starting the Advanced InfoPrint Administrator's GUI" on page 24). If an InfoPrint administrator's GUI application window is already open, click on the **Event Log** button at the bottom of that window.

Most objects have a notification profile attribute that InfoPrint uses to send messages about specific events to designated people. The notification profile attribute, however, does not control the notifications you receive at the GUI.

## Controlling Icon Appearance

There are two actions and two special symbols that enhance your ability to monitor the status of certain objects in the system. These symbols and actions either warn you about problems related to the object or allow you to ignore conditions you are already aware of.

### The Manage and Unmanage Actions

Manage action  and Unmanage action 

In the advanced InfoPrint administrator's GUI, you can control whether the appearance of server, queue, and printer icons reflects changes in their status. You use the Manage and Unmanage actions to switch an object to one mode or the other.

A managed object reflects status changes in the appearance of its icon. An unmanaged object always displays a normal icon, regardless of its status, and has the unmanaged symbol in the lower right-hand corner.

There are times when you may want an object unmanaged. For example, if a printer device will be down for several days you may choose to unmanage the actual destination, because you know the problem and cannot fix it right away.

The online help explains the consequences of using the Manage or Unmanage action on an object.

## The Unmanaged Symbol

 An unmanaged object always displays a normal icon with an unmanaged symbol in the lower right corner of the icon. This symbol lets you know of an unmanaged object. If there are problems with the object, the icon does not reflect them.

Use the Manage action to change the object from unmanaged to managed.

## The Problem Child Symbol

 Servers, queues, and printers relate to each other in a parent/child relationship. For example, a server is the parent of all the queues, and these queues are its children. A queue is the parent of all the logical and actual logical destinations that are associated with that queue, and these printers are its children.

In addition to reflecting its own status in the appearance of its icon, a managed server or queue also reflects the status of its managed children objects. If a managed actual destination is in a problem state, such as disabled, the icon of its managed parent queue displays with a problem child symbol in the lower right corner of the icon. A quick glance at the queue icon lets you know that there is a problem with one of its children. The online help provides more information about the problem child symbol.

## System Performance and Response Time

The number of application windows that are open and the number of objects that are represented in those windows have a direct correlation to system performance and response time. Following are some hints for improving performance when working with the GUI interface.

### Monitoring Selected Servers

Reduce network traffic by using the advanced InfoPrint administrator's GUI to monitor only selected servers. To select a subset of servers, click on the **Select Servers...** button in the Servers window. This action displays a list of all the existing servers in your namespace. Select the servers from the list that you want the Servers window to monitor. Event notifications will come across the network only for those selected servers.

### Using the Event Log Effectively

Click on the **Event Log** button in an advanced InfoPrint administrator's GUI application window to activate an event log. The Event Log window opens and begins displaying a log of events for all the objects, except jobs, associated with all the servers represented by that application window.

InfoPrint only logs job events when you request to log job events or when jobs display in any well or window. Click on the **Select Events...** button at the bottom of the Event Log window to select the servers for which InfoPrint logs job events.

Click on the **Select Servers...** button in the Event Log window to select the servers for which InfoPrint logs other events .

InfoPrint only logs events when you open or minimize an Event Log window.

## Closing Job Windows and Wells

Jobs change status often as they are queued, assigned to actual destinations, and processed . There is overhead associated with the icon changes representing these status changes . Because a server sends job events only when you open wells or windows that show jobs, you should close job windows and wells when you finish using them.

**Note:** A queue has wells for logical destinations, actual destinations, and jobs. Whenever you open one of these wells, the others also open. Even if you minimize the jobs well, InfoPrint still sends notifications about job events to that well. If you want to monitor the printers associated with a queue, but not the jobs in the queue, then open the Queue/Printers window. Or, set your user preferences for the InfoPrint administrator's GUI to exclude queued jobs.



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## Chapter 4. Using the InfoPrint SMIT Administrator's Interface

You use the InfoPrint SMIT administrator's interface to:

- Start and stop InfoPrint servers
- Access migration tools
- Perform troubleshooting procedures
- Access the InfoPrint SMIT operator's GUI (see Appendix A, "Using the InfoPrint SMIT Operator's GUI" on page 315)
- Perform miscellaneous configuration tasks
- Submit jobs using attributes files
- Manage network interfaces
- Manage InfoPrint name spaces
- Control access to InfoPrint objects
- Manage the Distributed Computing Environment (DCE)
- Use the InfoPrint utilities

Use the information in this section as a reference for accessing specific panels within the interface. Use the online help provided with the interface for instructions and information on performing specific tasks.

---

### Starting the Administrative Interface

You have two basic methods of accessing the InfoPrint SMIT administrator's interface:

- You can access the main menu of the InfoPrint SMIT administrator's interface from the main AIX SMIT menu:
  1. Enter one of the following commands at the AIX command prompt. The first command starts SMIT in the AIXwindows mode. The second command starts SMIT in the ASCII mode:

```
smit  
smitty
```
  2. Select **InfoPrint Printing System**.
- Enter one of the following fastpath commands at the AIX command prompt to bypass the main AIX SMIT panel and go directly to the main panel for a group of InfoPrint tasks:

smit ipr smitty ipr	Main menu for the InfoPrint SMIT administrator's interface
smit iprstrstp smitty iprstrstp	Menu for starting and stopping servers
smit iprmig smitty iprmig	Menu for InfoPrint migration tools
smit iprtroub smitty iprtroub	Menu for InfoPrint troubleshooting tasks
smit ppo_tasks smitty ppo_tasks	Menu for the InfoPrint SMIT operator's GUI
smit pd_psf_main smitty pd_psf_main	Menu for InfoPrint configuration tasks
smit iprudce_interfaces smitty iprudce_interfaces	Menu for InfoPrint network interface tasks
smit iprudce_ns smitty iprudce_ns	Menu for InfoPrint namespace tasks
smit iprudce_security smitty iprudce_security	Menu for InfoPrint security tasks
smit dce smitty dce	Menu for InfoPrint Distributed Computing Environment (DCE) tasks
smit ipru_main smitty ipru_main	Menu for InfoPrint utilities

---

## Accessing the Online Help for the Administrative Interface

The online help for the InfoPrint SMIT administrator's interface provides descriptions of panel controls, such as buttons, entry fields, and lists. You can access the help information using standard AIX SMIT help actions. If you are not familiar with using SMIT help, you can use the **Help** pull-down menu at the upper right corner of any AIXwindows SMIT panel. If you are using SMIT in the ASCII mode, access the main AIX System Management panel. Highlight the panel title and press **F1** to access help on using SMIT.

---

## Tasks You Can Perform Using the InfoPrint SMIT Administrator's Interface

The following is a brief description of the tasks you can perform using the InfoPrint SMIT administrator's interface. Use the online help for more detailed information.

### Server Tasks

The InfoPrint SMIT administrator's interface menu selections for servers allow you to start a new or existing InfoPrint server, or stop a server. When stopping a server, you can specify how InfoPrint shuts down the server with regard to the jobs contained in the queues or being processed by the actual destinations in the server.

## Migration Tools and Tasks

The InfoPrint SMIT administrator's interface menu selections for migration tools allow you to:

- Create a minimum InfoPrint configuration.

This task creates a logical destination (logical printer), queue, and actual destination (physical printer) in either an existing InfoPrint server or a new InfoPrint server. During installation, InfoPrint creates a minimum configuration on the first AIX system on which you install the product code. For additional AIX systems, InfoPrint does not create a minimum configuration.

- Migrate an existing AIX virtual printer.

This task converts an existing AIX virtual printer into an InfoPrint actual destination with the same characteristics as the virtual printer. Both the virtual printer you are converting and the actual destination you are creating must reside on the same AIX system.

## Troubleshooting Tasks

The InfoPrint SMIT administrator's interface menu selections for troubleshooting allow you to:

- View a Server Error Log

This task opens a `vi` editor session containing the error log for the server that you specify. Server error logs contain messages about both successful and unsuccessful operations performed by the server and the objects the server contains. You can open an error log when you receive a notification message that instructs you to do so in order to learn more information about a particular problem.

- Access a Server Debug Log

This task should only be performed at the direction of an IBM Printing Systems Company service representative.

## Configuration Tasks

The InfoPrint SMIT administrator's interface menu selections for configuration allow you to:

- Load a driver on the S/370 Channel Emulator/A Adapter.

This task is for channel-attached printers that you install and intend to use with InfoPrint. Channel-Attached printers connect to the RS/6000 through a S/370 Channel Emulator/A adapter. InfoPrint supplies a printer driver program that you must load on the adapter.

- Customize the Input Manager.

This task is for customers who have migrated to InfoPrint from IBM Print Services Facility for AIX. It allows you to set up configuration information for the Input Manager.

- Interrupt the current job on an input device.

This task allows you to interrupt a job that you have submitted from tape input so that you can use the tape drive for other purposes.

- Clean up cancelled jobs and leftover files.

You perform this task when instructed to do so by your IBM Printing Systems Company service representative.

- Set error log and trace log options.

This task allows you to set up options for the size and types of information recorded in logs for InfoPrint actual destinations.

## Submitting Jobs Using the InfoPrint SMIT Administrator's Interface

Using the InfoPrint SMIT administrator's interface to submit jobs is only for those users that have migrated to InfoPrint from an IBM Print Services Facility for AIX (PSF for AIX) system and have been using PSF job shell scripts; this includes printing from tape. During the migration, those job shell scripts were converted to InfoPrint command scripts and attributes files and given extensions of **.ksh** and **.X**. The PSF parameter files called by the PSF shell scripts, if any, were also converted to InfoPrint attributes files and given extensions of **.X**.

See the man page **jsmigr** for more information about the naming convention of migrated shell scripts and where the files are stored by default.

### Preparing to Submit Jobs

InfoPrint looks for the migrated files in directories **/var/psf/js**, **\$HOME/js** and your current directory. If you have them stored in a directory other than any of these, make that directory your current directory before entering the SMIT command.

#### Notes:

1. InfoPrint automatically provides attributes files for each data format. They are located in directory **/var/psf/js** and have the prefix of **template\_**.
2. Refer to *IBM InfoPrint Manager for AIX: Reference* for a list of the PSF for AIX job script keywords and the InfoPrint document and job attributes, or flags and arguments of the **pdpr** command, to which InfoPrint migrates them.

### Submitting Jobs

Use the **smit ipr** or the **smitty ipr** fastpath commands to go directly to the InfoPrint Production Printing System menu.

1. Enter one of the following commands at the AIX command line prompt:

```
smit ipr
smitty ipr
```

The InfoPrint Production Printing System menu displays.

2. Select Submit an InfoPrint Print Job.
3. The Submit an InfoPrint Print Job window displays with an entry of Initializing a Job Submission Screen for a few seconds.
4. The Single Select List window displays.

All of the available attributes files are listed. For example:

```
# /   =current directory
# //  =/net/home/jones/js
# /// =/var/psf/js
/     template_PCL.js.X
//    template_MODCAP.js.X
```

**Notes:**

- a. The first three lines are for information to identify which directory the listed attributes files are located. For example, /template\_PCL.js.X is in the current directory and //template\_MODCAP.js.X is in the **/net/home/jones/js** directory.
- b. If you do not have any .X files in your \$HOME/js directory, the second line displays as follows:

```
# // =//js
```

5. Select the attributes file you want.

The Single Select List window disappears and the Submit an InfoPrint Job window displays again with a series of fields you can use to enter information about the job. Use the online help information to determine if you want to enter or change information in the fields. Some of the fields are read-only, some you can enter data into, and others you can only make a selection from the list.

**Note:** The fields, options, and help information available are dependent on the data-stream type that is identified in the attributes file.

6. Select **OK** to submit the job.

The command and output areas display. The running man in the upper right corner indicates the job is in process. When the running man stops and holds his arms up, the job is submitted.

7. Select the **Done** button.

The Submit an InfoPrint Job window still displays.

8. Select **Cancel** to return to the System Management Interface Tool window.

## Network Interface Tasks

The InfoPrint SMIT administrator's interface menu selections for network interfaces allow you to control which network interfaces can communicate with InfoPrint. You can list the network interfaces that InfoPrint ignores and make InfoPrint stop or start ignoring a network interface.

## Namespace Tasks

The InfoPrint SMIT administrator's interface menu selections for namespaces allow you to control which DCE namespaces belong to the InfoPrint environment. You can show or change the default namespace, add namespaces, or remove namespaces.

## Security Tasks

The InfoPrint SMIT administrator's interface menu selections for security allow you to control the DCE groups that can access InfoPrint servers, queues, and destinations and the level of access that they have. For more information, see "Changing DCE Permissions for InfoPrint Objects" on page 221.

## DCE Tasks

The InfoPrint SMIT administrator's interface menu selections for DCE allow you to configure DCE, start and stop DCE daemons, and define DCE principals and groups. For more information, see “Managing InfoPrint Security with DCE” on page 218.

## Other InfoPrint Tasks

The InfoPrint SMIT administrator's interface menu selections for InfoPrint utilities allow you to perform the following tasks:

- Add or remove languages
- Claim a new disk for use with InfoPrint
- Configure AIX Connections
- Configure InfoPrint Library
- Configure a modem for dial-up diagnostics
- Enable or disable autostart
- Print a test job
- Tune system performance

---

## Chapter 5. Using the InfoPrint Job and Printer Management GUI

The InfoPrint job and printer management GUI is an operator interface for managing InfoPrint jobs and physical printers. It runs on multiple platforms, so you can use it either from a workstation client or from the AIX server.

---

### Tasks You Can Do with the InfoPrint Job and Printer Management GUI

You can use the InfoPrint job and printer management GUI to perform the following operator tasks:

- Support hundreds of jobs and printers
- Support a simple view of jobs and printers
- Check printer status
- Show the status of Simple Network Management Protocol (SNMP) printers
- Recover from printer device errors
- Change the media ready on a physical printer
- Enable or disable a physical printer
- Check job status
- Recover from job errors
- Retain jobs
- Resubmit retained jobs
- Hold and release jobs
- Search for jobs
- Assign jobs to another physical printer
- Change the media for a job

While the InfoPrint job and printer management GUI allows you to perform the most common operator tasks, it does not allow you to perform every task you may need to do. You must use the InfoPrint administrator's GUI, which runs only on AIX, to perform the following operator tasks:

- Work with fax and email destinations
- Shut down actual destinations
- Clean (delete) all jobs from actual destinations
- Forward space or backspace a physical printer
- Interrupt the job printing on a physical printer
- Pause and resume actual destinations (advanced InfoPrint administrator's GUI only)
- Set print quality
- Change the separator sheet
- View job tickets (basic InfoPrint administrator's GUI only)
- View job logs
- Check the progress of a job

You must use the InfoPrint administrator's GUI to perform the following administrator tasks:

- Change the media that a physical printer supports
- Customize operator tasks

- Clean all jobs from servers or queues (advanced InfoPrint administrator's GUI only)
- Shut down servers (advanced InfoPrint administrator's GUI only)
- Enable and disable all destinations in a server (advanced InfoPrint administrator's GUI only)
- Pause and resume all queues in a server (advanced InfoPrint administrator's GUI only)
- View event logs (advanced InfoPrint administrator's GUI only)

---

## The Three Views of the InfoPrint Job and Printer Management GUI

The InfoPrint job and printer management GUI offers three different views: basic, advanced, and distributed. Although you can display any view, each one is most suitable for a particular situation.

- Use the *basic* view if your InfoPrint server is configured to support:
  - Print on Demand (commercial) printing
  - Assignment of jobs to actual destinations when they are submitted
  - PostScript, TIFF, and variable data jobs
  - Jobs submitted from InfoPrint Submit, InfoPrint Scan, or InfoPrint Library
- Use the *advanced* view if your InfoPrint server is configured to support:
  - Data center (production) or distributed mission printing
  - Printer pooling for workload balancing
  - PostScript, TIFF, and variable data jobs
  - Jobs submitted from the command line, from workstation applications through InfoPrint Select, or from other application programs
- Use the *distributed* view if you are a customer service representative at a help desk who needs to locate jobs and assist customers.

---

## Starting the InfoPrint Job and Printer Management GUI

How you start the InfoPrint job and printer management GUI depends on:

- The platform you are running on
- On AIX, the way the server is configured
- Whether you start the InfoPrint job and printer management GUI from the desktop or the command line

### Starting the InfoPrint Job and Printer Management GUI from the Windows Desktop

To open the InfoPrint job and printer management GUI from the Windows desktop, select one of the InfoPrint icons.

- Select **InfoPrint Basic** to open a view similar to Figure 22 on page 55.
- Select **InfoPrint Advanced** to open a view similar to Figure 23 on page 56.
- Select **InfoPrint Distributed** to open a view similar to Figure 24 on page 57.

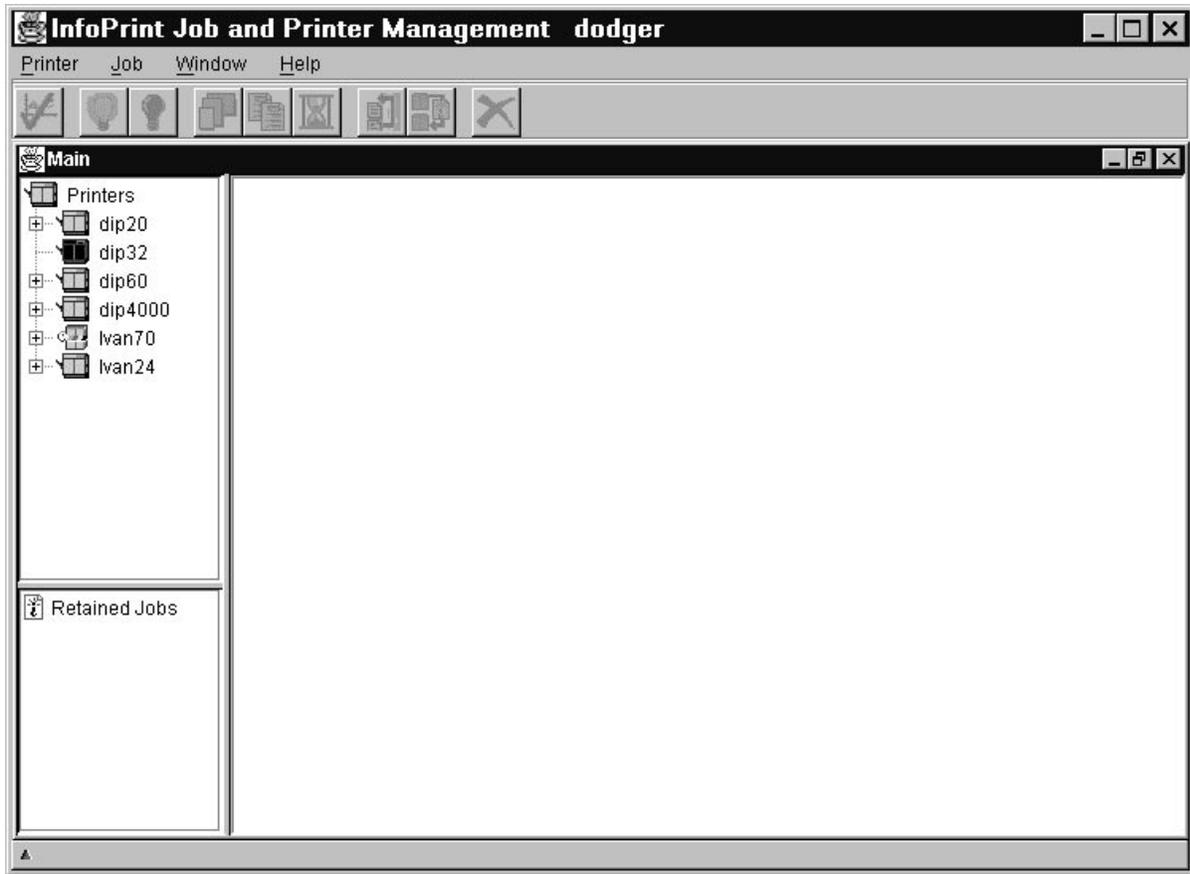


Figure 22. Basic View of the Main Window of the InfoPrint Job and Printer Management GUI

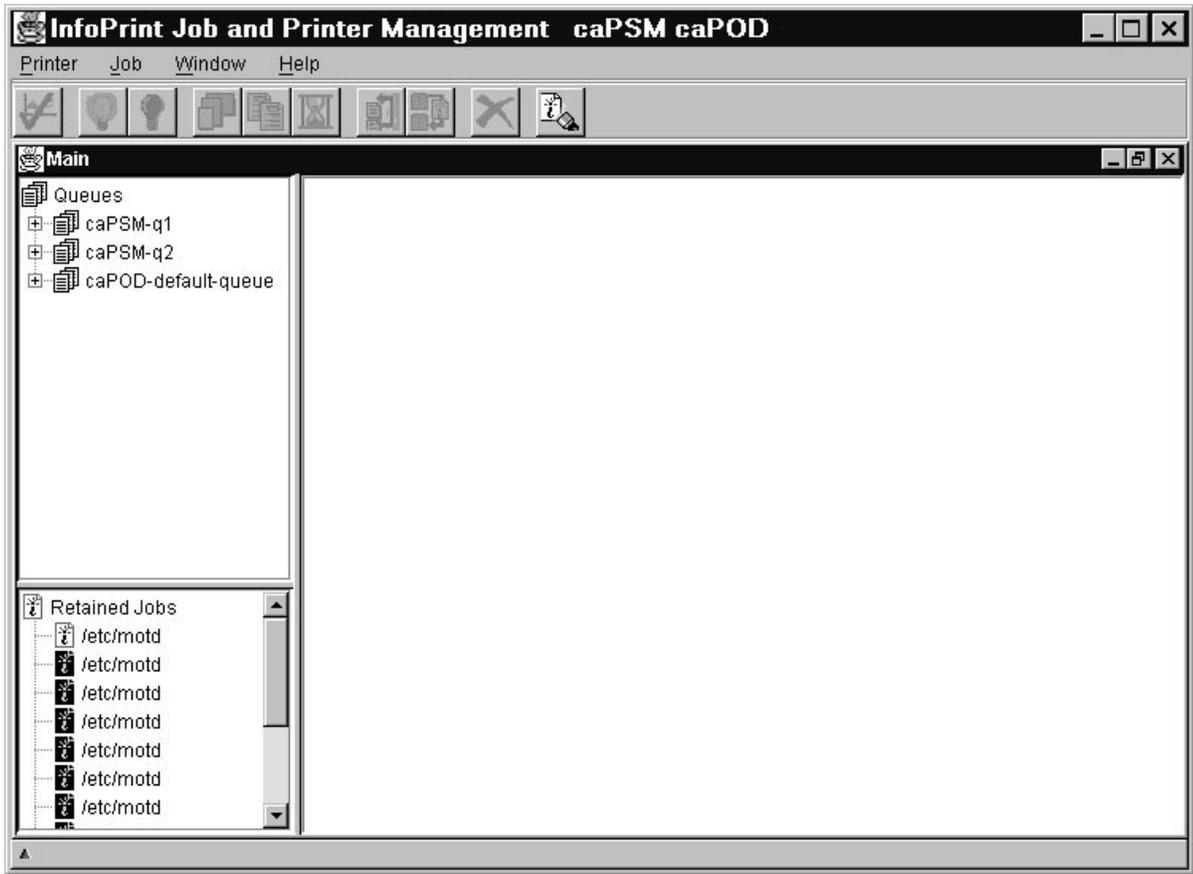


Figure 23. Advanced View of the Main Window of the InfoPrint Job and Printer Management GUI

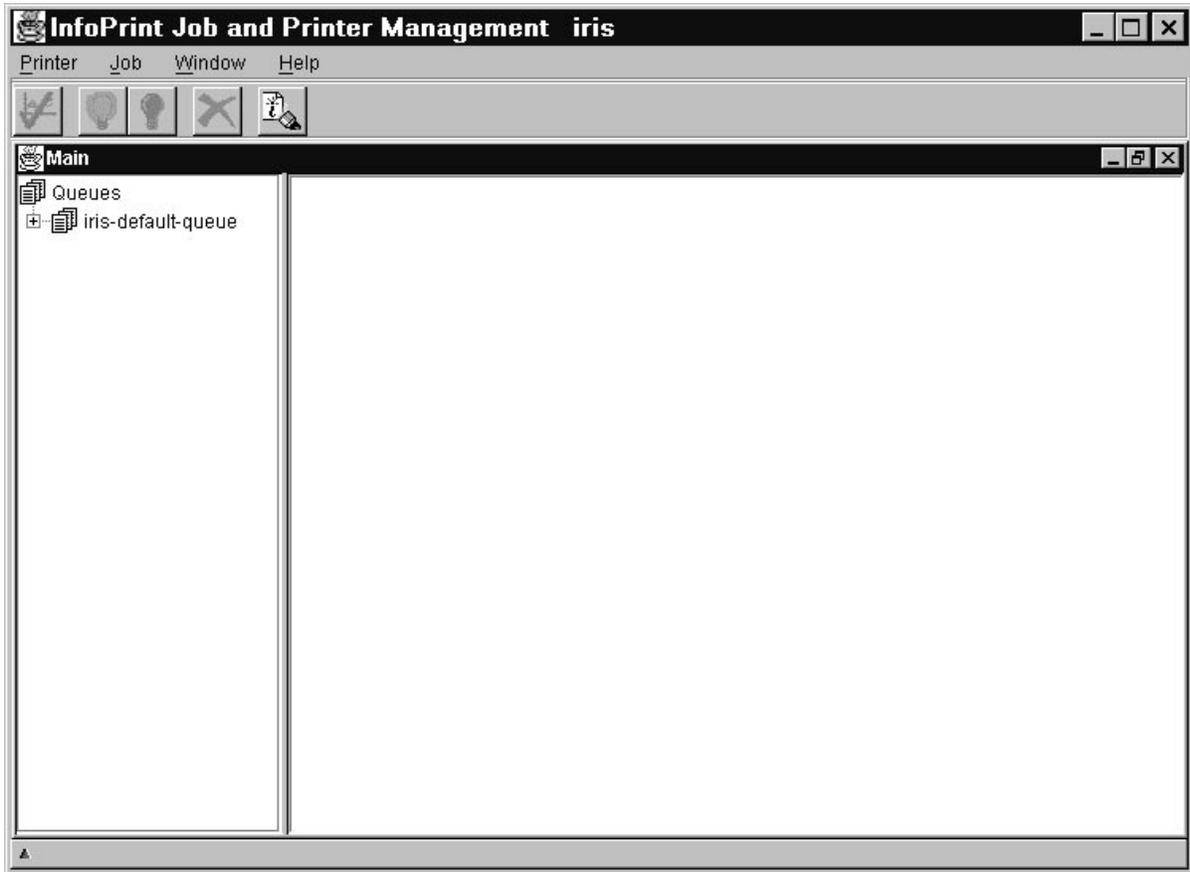


Figure 24. Distributed View of the Main Window of the InfoPrint Job and Printer Management GUI

## Starting the InfoPrint Job and Printer Management GUI from the AIX Desktop in a Basic Environment

**Note:** If the **InfoPrint** icon does not appear on the front panel of the desktop, you have an advanced environment. See “Starting the InfoPrint Job and Printer Management GUI from the AIX Desktop in an Advanced Environment” on page 58.

To start the basic view of the InfoPrint job and printer management GUI from the AIX desktop in a basic environment:

1. Select the arrow over the **InfoPrint** icon to display the IBM InfoPrint popup.
2. Make a selection from the popup:
  - Select **Basic Operator GUI** to open a view similar to Figure 22 on page 55.
  - Select **Advanced** to open a view similar to Figure 23 on page 56.
  - Select **Distributed** to open a view similar to Figure 24.

To start the advanced or distributed view of the InfoPrint job and printer management GUI from the AIX desktop in a basic environment:

1. Click on the **Application Manager** icon, which looks like an open file drawer with a calculator, to open the Application Manager window. Among the application icons, there is a folder icon for the InfoPrint application group.
2. Double-click on the **InfoPrint** folder to open the InfoPrint Application Group window. This window displays icons representing different parts of the InfoPrint GUIs.
3. Double-click on **Advanced Operator GUI** to open a view similar to Figure 23 on page 56, or on **Distributed Operator GUI** to open a view similar to Figure 24 on page 57.

## Starting the InfoPrint Job and Printer Management GUI from the AIX Desktop in an Advanced Environment

**Note:** If the InfoPrint icon appears on the front panel of the desktop, you have a basic environment. See “Starting the InfoPrint Job and Printer Management GUI from the AIX Desktop in a Basic Environment” on page 57.

To start the InfoPrint job and printer management GUI from the AIX desktop in an advanced environment:

1. Click on the **Application Manager** icon, which looks like an open file drawer with a calculator, to open the Application Manager window. Among the application icons, there is a folder icon for the InfoPrint application group.
2. Double-click on the **InfoPrint** folder to open the InfoPrint Application Group window. This window displays icons representing different parts of the InfoPrint GUIs.
3. Double-click on one of these icons:
  - Double-click on **Basic Operator GUI** to open a view similar to Figure 22 on page 55.
  - Double-click on **Advanced Operator GUI** to open a view similar to Figure 23 on page 56.
  - Double-click on **Distributed Operator GUI** to open a view similar to Figure 24 on page 57.

## Starting the InfoPrint Job and Printer Management GUI from the Command Line

You can start the InfoPrint job and printer management GUI from the AIX or DOS command line.

- To open a view similar to Figure 22 on page 55, enter:  
ipguibasic
- To open a view similar to Figure 23 on page 56, enter:  
ipguiadv
- To open a view similar to Figure 24 on page 57, enter:  
ipguidist

**Note:** On Windows, before you can issue these commands, you must edit the **autoexec.bat** file from a DOS window. In this file, add `c:\lppgui` to the **PATH** environment variable, where *c:* is the drive where you installed the InfoPrint job and printer management GUI.



---

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## Chapter 6. Creating and Managing Servers

The IBM InfoPrint Control (InfoPrint) server manages and controls all other InfoPrint objects in your InfoPrint system. During InfoPrint installation, one server was created that contains a logical destination, a queue, and an actual destination (a physical printer). Use the information in this chapter to add additional servers and to perform server configuration and maintenance tasks.

---

### Creating Additional Servers or Starting Existing Servers

You can create a new server or start an existing server through the InfoPrint SMIT administrator's interface. If you are not familiar with how to start the InfoPrint SMIT administrator's interface, see Chapter 4, "Using the InfoPrint SMIT Administrator's Interface" on page 47.

To create a new server or start an existing server:

1. From the InfoPrint Production Printing System panel, select **Start/Stop Servers**. A new menu displays.
2. Select **Start a Server**. The Start a Server dialog window opens.
3. Enter the name of the InfoPrint server in the \* **SERVER name** field. By default InfoPrint fills in this field with the name of the AIX system on which you are running the SMIT session.
4. If you want to use a port number other than the default of **6874** as the communications port for InfoPrint, enter the port number in the **PORT number** field.
5. If you want the InfoPrint server to run in a locale other than your current locale, enter the locale name in the **LOCALE** field.
6. Press **Enter**. The result of this step depends on whether the server exists:
  - If the server does not exist, InfoPrint displays a confirmation message prompting for whether you want to create a new server. Respond to the prompt to continue.
  - If the server exists but is not currently running, InfoPrint displays status information and issues a message when it successfully starts the server.
  - If the server exists and is running, InfoPrint issues a message to indicate that the server is already operational.

#### Notes:

1. Normally you will only run one InfoPrint server on an AIX system.
2. You also use this procedure to start a server that you have shut down.

---

## Preparing to Work with Servers

You manage the InfoPrint servers through the advanced InfoPrint administrator's GUI. (The basic InfoPrint administrator's GUI allows you to manage the objects in servers, but not the servers themselves.) The following topics describe usage tips for displaying server information. You perform all of these procedures from the Servers window of the advanced InfoPrint administrator's GUI.

### Activating the Event Log

The advanced InfoPrint administrator's GUI provides you with visual indicators of changes to a server and its objects. You may also want to record event information in an event log. When activated, the event log records InfoPrint message numbers and message text for the servers you are monitoring and the objects that are contained within the servers. You must activate the event log before InfoPrint records event information. You can minimize the event log after you activate it.

To activate the event log:

1. From the Servers window, select the **Event Log** button.

The InfoPrint event log opens. The title bar of the event log shows which servers you are monitoring.

2. Select the servers for which you want events recorded.

If you want to reduce the number of or change the servers for which the event log records information:

- a. Select the **Select Servers...** button. The Event Log - Servers window displays.
  - b. Select the server or servers for which you want events recorded.
  - c. Select the **OK** button to return to the InfoPrint Event Log window.
3. Either leave the InfoPrint Event Log window open or minimize it using the control in the upper right corner of the window.

InfoPrint will now record events for the selected servers and their objects.

### Searching for an Event in the Event Log

To locate the log entry for a particular object:

1. Open or restore the event log window.
2. Enter the object name in the **Search for** field.
3. Use the **Find Newest** and **Find Next** buttons.

- a. Select the **Find Newest** button.

This causes the list to scroll from the top of the list to the first occurrence of the search string. That log entry is highlighted.

- b. Select the **Find Next** button.

This causes the list to scroll to the next occurrence of the search string. That log entry is highlighted.

## Including Job Events in the Event Log

By default, InfoPrint does not record information about jobs in the event log. If your InfoPrint system processes many jobs at one time, recording job-event information can affect performance. However, if you have key jobs for which you want event information, you can request that InfoPrint records that information.

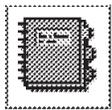
To include job events in the event log:

1. Open or restore the event log window.
2. Select the **Select Events...** button.  
The Event Log - Job Events window displays.
3. Select the server or servers for which you want job-event information recorded and then select the **OK** button.

InfoPrint now records job-event information for the server or servers you specified.

**Note:** If the server you wanted to select was not available in the list, use the **Select Servers...** button to specify different servers.

## Displaying the Attributes Notebook for a Server

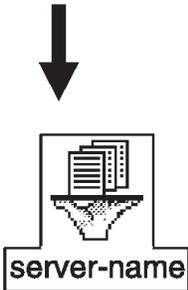


You can view the server attributes and change some values through the attributes notebook for the server.

To display a notebook for a server:

1. Open the Servers window.
2. Drag the **Notebook** icon from the Actions area and drop it on the server icon.

InfoPrint opens the attributes notebook for the server.



---

## Pausing and Resuming All Queues and Actual Destinations in a Server

You can pause all queues and actual destinations in a server with one action. Pausing actual destinations causes InfoPrint to pause all jobs processing on the actual destinations in the manner you select. Pausing queues stops any distribution of jobs from the queue to the actual destinations. The queues still accept jobs from their associated logical destinations.

**Note:** The server stays in the ready state, and the logical destinations stay in their current states.

## Pausing All Queues and Actual Destinations in a Server

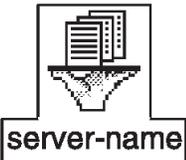


To pause the queues and actual destinations within a server:

1. From the Servers window, drag the **Pause** icon from the Actions area and drop it on the server icon in the Work Area. The Pause Servers dialog window displays.
2. Specify how you want to pause the actual destinations. You can use the **Help** button or the **?** button to view information on the selections.
3. Select the **OK** button.

InfoPrint pauses the queues and actual destinations associated with the server. The icons for the paused queues and actual destinations turn black to show that they are paused.

## Resuming All Paused Queues and Actual Destinations in a Server



To resume the operation of queues and actual destinations in the server:

1. From the Servers window, drag the **Resume** icon from the Actions area and drop it on the server icon in the Work Area.
2. InfoPrint resumes the queues and actual destinations.

The icons for the queues and actual destinations return to normal to show that they are active.

---

## Disabling and Enabling All Logical and Actual Destinations in a Server

If you need to make all logical and actual destinations in a server unavailable at the same time, you can disable them all with one action. For example, you may want to disable all destinations for routine maintenance or service. Disabling the logical destinations prevents InfoPrint from receiving new jobs. Disabling the actual destinations prevents InfoPrint from sending any more jobs to the output devices. Typically, you will allow all jobs currently processing on the actual destinations to complete before disabling them.

## Disabling All Logical and Actual Destinations Associated with a Server

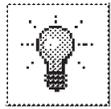


Perform the following steps to disable all printers:

1. From the Servers window drag the **Disable** icon from the Actions area and drop it on the server icon.
2. InfoPrint disables all printers, both logical and physical.

The printer icons turn black to show that they are disabled.

## Enabling All Disabled Logical and Actual Destinations on a Server



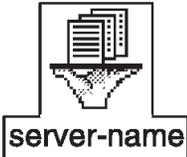
To enable all disabled logical destinations and actual destinations on the server so that they will accept and process new jobs:

1. Ensure that you have the Servers window open.
2. Drag the **Enable** icon from the Actions area and drop it on the server icon.

InfoPrint enables all logical destinations and actual destinations and returns their icons to normal appearance.

---

## Cleaning Jobs from Servers



You can remove all jobs, those submitted to any of the logical destinations and those assigned to all actual destinations in a server, by cleaning the server. When cleaning a server, InfoPrint ignores any **job-retention-period** or **job-retain-until** attribute values specified with jobs.

If any actual destination is processing a job when you clean the server, InfoPrint cancels the job at the soonest possible point. Then InfoPrint disables the actual destination to prevent it from accepting new jobs. After disabling the logical destinations and actual destinations, InfoPrint removes all jobs and then enables the logical and actual destinations that the process had disabled.

To clean a server:

1. From the Servers window, drag the **Clean** icon from the Actions area and drop it on the server icon.
2. InfoPrint displays a confirmation message.
3. Select the **YES** button.

InfoPrint removes all jobs within that server.

---

## Placing Servers in Unmanaged Mode and Managed Mode

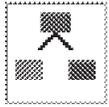
You can place a server in the unmanaged mode so that the advanced InfoPrint administrator's GUI does not reflect changes in server status. You may want to do this when the server has a problem child.

When the problem is fixed, you can return the server to managed mode. The InfoPrint administrator's GUI will again provide you with visual notification when changes in the state of the server or objects in the server occur.

### Notes:

1. See "The Problem Child Symbol" on page 44 for further information on parent/child relationships between InfoPrint objects.
2. When the server icon is in the unmanaged mode, the icon appearance will not change for any reason; even during shutdown.

## Placing Servers in Unmanaged Mode

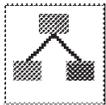


To place a server in unmanaged mode:

1. Ensure that the Servers window is open.
2. Drag the **Unmanage** icon from the Actions area and drop it on the server icon in the Work Area.

InfoPrint adds an unmanaged symbol to the server icon to show that it is in unmanaged mode.

## Placing Servers in Managed Mode

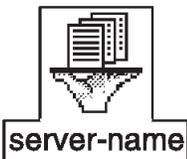
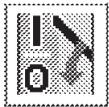


1. Ensure that the Servers window is open.
2. Drag the **Manage** icon from the Actions area and drop it on the server icon in the Work Area.

InfoPrint removes the unmanaged symbol from the server icon to show that it is in the managed mode.

---

## Shutting Down a Server



You can shut down a server either immediately or after it finishes processing some or all of its current jobs.

InfoPrint prevents the server from accepting new jobs while the server is shutting down and after it has shut down. Logical destinations and actual destinations in the server that were enabled at shutdown time are enabled when the server is restarted. Logical destinations and actual destinations in the server that were disabled at shutdown time are disabled when the server is restarted.

**Note:** See “Creating Additional Servers or Starting Existing Servers” on page 65 for the restart procedure.

To shut down a server:

1. Drag the **Shut Down** icon from the Actions area and drop it on the icon of the server you want to shut down.

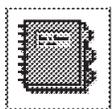
The Shut Down Servers dialog window appears.

2. Select when you want the server to shut down. You can use the **Help** or the **?** button to view information on the selections.
3. Select the **OK** button.
4. InfoPrint starts the shutdown process based on the method you selected.

The server icon turns black indicating that it is shutting down. When the process is complete, the server icon disappears from the window.

---

## Setting the Notification Profile for a Server



When you created the server, InfoPrint set the notification profile components to their default values.

To see what the default values are or to change the values:

1. From the Servers window, ensure the server for which you want to review the notification profile displays in the Servers pane of the Work Area. If it does not, use the **Select Servers...** button to select the server.
2. Drag the **Notebook** icon from the Actions area and drop it the server icon.

InfoPrint opens the attributes notebook for the server.

3. Select the **Summary** attribute group button. A list displays.
4. Select **Notification**.

InfoPrint displays the **Notification Tab**. You can use the **Help** button or the **?** button to view information on the notification profile field and the buttons to the right of the field.

**Note:** The **Help** button provides information concerning the notification profile, its various components and their purpose.

5. Select the **Modify...** button to see the default values set when the server was created.

The Notification - Modify dialog window opens. You can use the **Help** button or the **?** button to view information about the fields in this window.

6. Select the **List** button to the right of the \* **Delivery Method** field to see the various delivery methods available.

**Note:** The default value for delivery method is **message**. When you use a delivery method of **message**, you must have an open AIX window.

You can change the method or leave it as currently set.

- To change the method, select a new value; InfoPrint closes the Methods Selection dialog window.
- To keep the present method, select the **Cancel** button.

InfoPrint closes the Methods Selection dialog window.

7. Select the **List** button to the right of the **Events** field to see the various events that can be reported. You can change the events or leave them as currently set.

- a. To change the events, select new values then select the **OK** button.
- b. To keep the present events, select the **Cancel** button.

InfoPrint closes the Events Selection dialog window.

8. Select the **Modify** button to save any changes you have made and exit the Notification - Modify window. Select the **Cancel** button to exit the Notification - Modify window without making any changes.

For more information about notification profiles, see Chapter 15, "Setting Notification Profiles" on page 169 and *IBM InfoPrint Manager for AIX: Reference*.



---

## Chapter 7. Installing and Configuring Printer Devices and Related Hardware

This chapter describes how to install printer devices that InfoPrint will manage and a hardware attachment that InfoPrint requires in order to print on some printer devices. It also describes configuration tasks that you must do at the printer device or on your AIX system outside InfoPrint.

To create and configure the InfoPrint physical printers that represent printer devices, see Chapter 8, "Creating and Managing Actual Destinations" on page 99.

---

### Installing Channel-Attached Printer Devices

When you install a channel-attached printer device, you must:

1. Perform the prerequisite tasks.
2. Install the S/370 Channel Emulator/A adapter.
3. Load the device driver onto the S/370 Channel Emulator/A adapter.

You must also create and configure a PSF channel-attached physical printer to represent the printer device. For instructions, see Chapter 8, "Creating and Managing Actual Destinations" on page 99.

### Prerequisite Tasks

Before installing a channel-attached printer, complete the following prerequisite tasks:

- \_\_\_ 1. Schedule an appointment with your IBM Printing Systems Company representative. This person will:
  - a. Install the S/370 Channel Emulator/A Adapter in the RS/6000, if it has not been installed already
  - b. Connect the channel cable to the printer
  - c. Install the bus and tag terminators in the last printer connected to the channel
  - d. Provide the control unit address for the printer

- \_\_\_ 2. Determine how many channel-attached printers and S/370 Channel Emulator/A Adapters to install.

While each S/370 Channel Emulator/A Adapter can physically attach four printers; for optimum performance you should generally attach no more than two channel-attached printers to each RS/6000, with no more than one channel-attached printer per adapter. If you print relatively little data and require relatively few resources, you may be able to attach two printers to a single adapter.

If you install more than one adapter, you must decide which printer you will attach to each adapter.

- \_\_\_ 3. Check that you satisfy the electrical grounding requirements described in the documentation for the printer devices.
- \_\_\_ 4. Place the printer devices no more than 200 feet from the RS/6000 to which they will be attached.

- \_\_\_ 5. At the printer operator panel or console, set the printer to **High Speed Data Streaming** mode, or to a similar mode, if applicable.
- \_\_\_ 6. Read *POWERstation and POWERserver Channel Emulator/A: User's Guide and Service Installation*.

## Installing the S/370 Channel Emulator/A Adapter

To find out if the S/370 Channel Emulator/A adapter has already been installed in your RS/6000, enter the following command on the AIX command line:

```
lsdev -c | grep chna
```

For each installed adapter, AIX returns a line similar to this:

```
chna0 Available 00-02 IBM S/370 Channel Emulator/A Adapter
```

If the adapter has not been installed, the IBM Printing Systems Company representative can install it; or you can install it yourself. To install the adapter:

1. Shut down the RS/6000. For example, to shut down the RS/6000 at 6:30 PM, first sending a warning to all users, enter:  

```
shutdown 18:30
```
2. After shutdown is complete, turn off the RS/6000 and all attached devices.
3. Follow the installation instructions in *POWERstation and POWERserver Channel Emulator/A: User's Guide and Service Installation*.
4. Record the number of the slot in which you installed the S/370 Channel Emulator/A adapter and some identifying information for the printer or printers that you intend to attach to the adapter. You will need this information when you configure the InfoPrint physical printer that represents each printer device.
5. Attach the channel cable to the S/370 Channel Emulator/A adapter at the RS/6000.

**CAUTION:**

**Do *not* attach the channel cable to the printer. The cable and printer connection are easily damaged. The IBM Printing Systems Company representative will attach the channel cable to the printer.**

**CAUTION:**

**If a bus cable and tag cable are provided with the S/370 Channel Emulator/A adapter, do *not* attach these cables to the channel cable or to the printer. The IBM Printing Systems Company representative will attach them.**

6. When the IBM Printing Systems Company representative comes to attach the cables, ask him or her to tell you the control unit address for each printer. Record this address. You will need it when you configure the InfoPrint physical printer that represents the printer device.
7. Turn on the RS/6000 and all attached devices.

## Loading the Device Driver onto the S/370 Channel Emulator/A Adapter

When you install InfoPrint, you install a device driver for the S/370 Channel Emulator/A Adapter on the RS/6000. You must download this driver to each installed adapter. To do this:

1. Log on as **root**.
2. At the AIX command line, enter:  

```
smit pd_psf_main
```

The Miscellaneous Configuration menu displays.
3. Select Load Driver onto S/370 Channel Emulator/A Adapter. The Adapter Selection panel (Figure 25 ) displays.

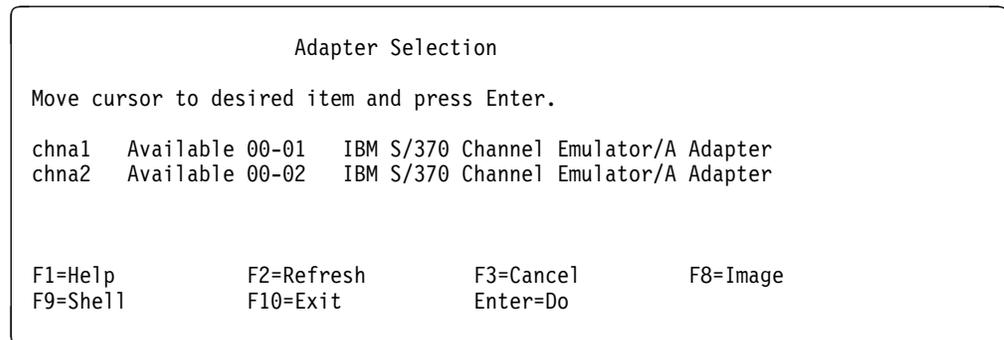


Figure 25. SMIT Adapter Selection Panel

4. Select an adapter.
5. Press **Enter** (ASCII interface) or select Do (AIXwindows interface).
6. To confirm that the device driver is loaded, enter the following command on the AIX command line:

```
lsdev -C | grep afp
```

For each adapter where the device driver was successfully loaded, AIX returns a line similar to this:

```
afp0 Available 00-02-00 IBM S/370 Channel Emulator/A Printer Driver
```

If the driver was not successfully loaded, the status is Defined instead of Available.

---

## Installing the i-data 7913 IPDS Printer LAN Attachment

InfoPrint requires the i-data 7913 Intelligent Printer Data Stream (IPDS) Printer Local Area Network (LAN) Attachment in order to print on IBM coaxial and twinaxial printers. You must install and configure one i-data 7913 IPDS Printer LAN Attachment for each coaxial or twinaxial printer that you plan to install.

## How the i-data 7913 IPDS Printer LAN Attachment Works with InfoPrint

The i-data 7913 IPDS Printer LAN Attachment is a hardware protocol converter that communicates between InfoPrint and a coaxial or twinaxial IPDS printer device. You can use the i-data 7913 IPDS Printer LAN Attachment to connect this type of printer to any LAN-attached workstation.

The i-data 7913 IPDS Printer LAN Attachment requires TCP/IP communications protocols. It runs on either an IBM token-ring network or an Ethernet LAN. You must install one i-data 7913 IPDS Printer LAN Attachment for each coaxial or twinaxial IPDS printer device that you plan to install. You must install and configure each i-data 7913 IPDS Printer LAN Attachment separately.

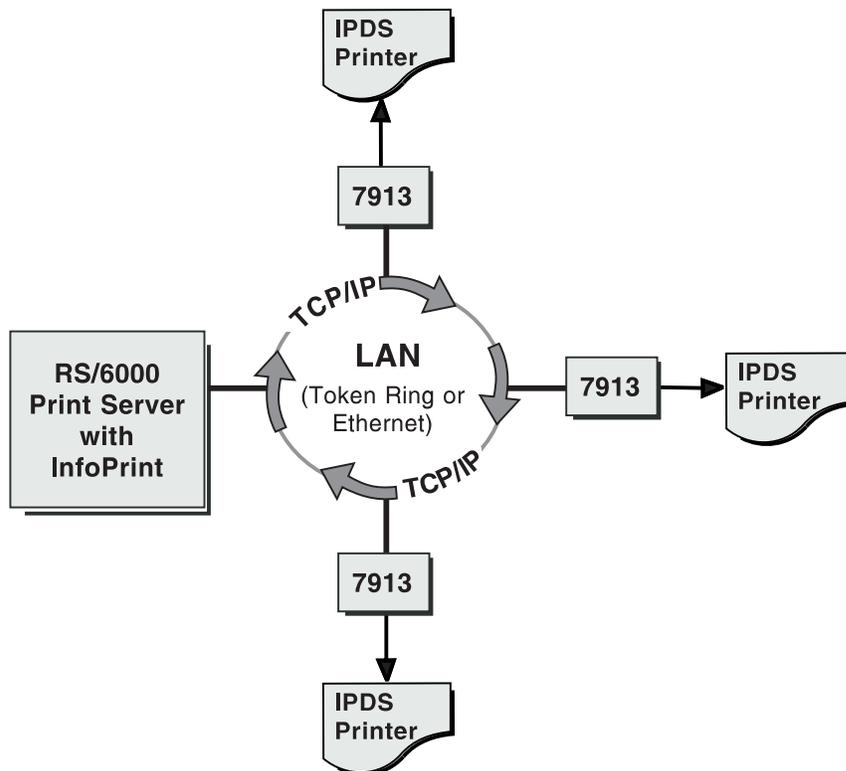


Figure 26. i-data 7913 IPDS Printer LAN Attachment in a TCP/IP LAN Environment

## How the i-data 7913 IPDS Printer LAN Attachment Fits into Network Configurations

There are two possible network configurations for the i-data 7913 IPDS Printer LAN Attachment.

Use the configuration in Figure 27 on page 79 for new TCP/IP installations with one RS/6000 print server. This server contains all the software that InfoPrint requires to drive printers. This server also runs TCP/IP and contains the TCP/IP **bootp** daemon, which initializes the i-data 7913 IPDS Printer LAN Attachment.

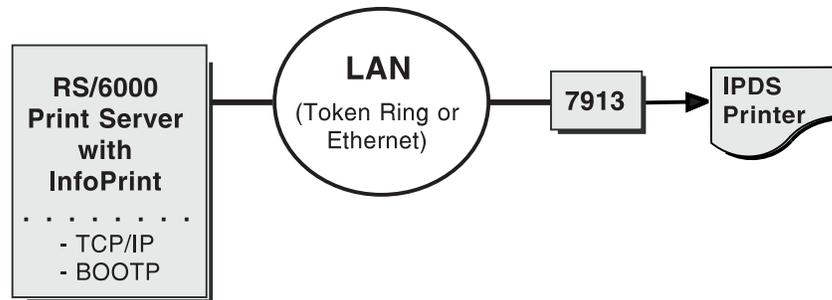


Figure 27. Network Configuration for New TCP/IP Installations

Use the configuration in Figure 28 for an TCP/IP network with the **bootp** daemon installed on another server. Normally, the server must belong to the same subnetwork as the i-data 7913 IPDS Printer LAN Attachment. An existing AIX server may be running InfoPrint.

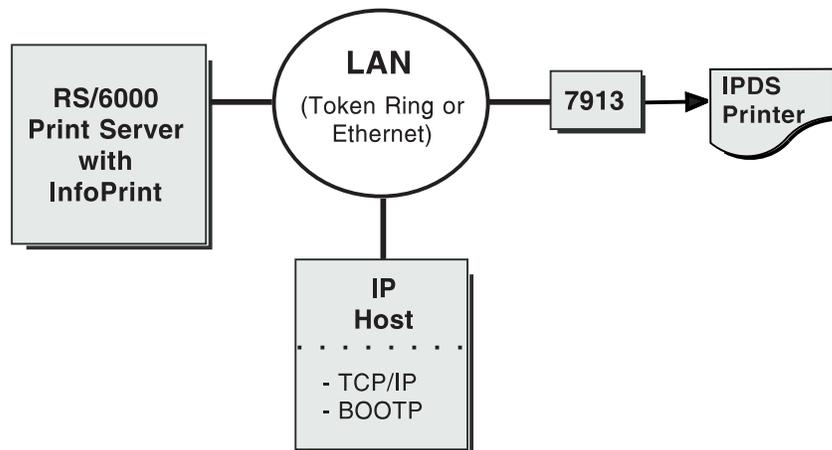


Figure 28. Network Configuration for Separate Internet Protocol Hosts

## Prerequisite Tasks

Before you begin to install the i-data 7913 IPDS Printer LAN Attachment, you must satisfy the following conditions:

1. You have one i-data 7913 IPDS Printer LAN Attachment for each IBM coaxial or twinaxial printer that you plan to install. You can order the i-data 7913 IPDS Printer LAN Attachment as a printer feature.

The following printers require the i-data 7913 IPDS Printer LAN Attachment:

- IBM 3112 Page Printer Model 001
- IBM 3116 Page Printer Models 001, 002, and 003
- IBM 3112 Page Printer Model 001
- IBM 3812 Page Printer Model 2 with feature 3190 or 3192
- IBM 3816 Page Printer Models 01D and 01S with feature 7653 or 7654
- IBM 3912 Page Printer Models AS1 and NS1
- IBM 3916 Page Printer Models AS1 and NS1
- IBM 3930 Page Printer Models 02D and 02S
- IBM Laser Printer 4028 Models AS1 and NS1, including support for the 4028 with magnetic ink character recognition (MICR), Request for Price Quotation (RPQ) S02177

- IBM 6400 Line Matrix Printer (all models)
- IBM 6408 Line Matrix Printer Model CTA

**Note:** InfoPrint does not support twinaxial connections for this printer device.

- IBM 6412 Line Matrix Printer Model CTA

**Note:** InfoPrint does not support twinaxial connections for this printer device.

- \_\_\_ 2. You have installed the following software:
  - IBM AIX Version 3.2.5 or higher for the RS/6000. For InfoPrint Version 3.1, you must install IBM AIX Version 4.2.1 or higher.
  - The TCP/IP option (**bosnet.tcpip.obj**) of the AIX operating system
  - InfoPrint Version 2.1 or higher
- \_\_\_ 3. You have either an IBM token-ring network or an Ethernet LAN installed and operating.
- \_\_\_ 4. Your AIX LAN coexists with TCP/IP. If it does not, refer to *TCP/IP Tutorial and Technical Overview*.
- \_\_\_ 5. For each i-data 7913 IPDS Printer LAN Attachment that you plan to install, you have obtained the following information from your network administrator:
  - Internet Protocol (IP) address
  - Subnet mask
  - Gateway address

## The bootp Daemon

You must configure and start the **bootp** daemon on an AIX system in the TCP/IP network. The **bootp** daemon initializes the i-data 7913 IPDS Printer LAN Attachment.

### How the bootp Daemon Works

The TCP/IP **bootp** daemon supports one or more i-data 7913 IPDS Printer LAN Attachments. When you start an i-data 7913 IPDS Printer LAN Attachment, it broadcasts an initialization request to all systems on the LAN. The **bootp** daemon searches the **/etc/bootptab** file and returns information that defines the i-data 7913 IPDS Printer LAN Attachment within the network.

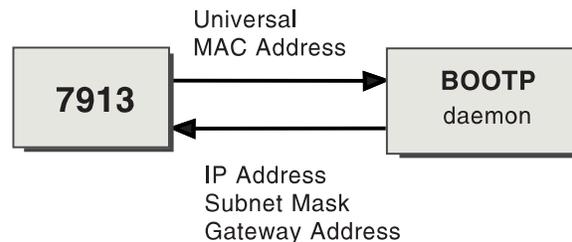


Figure 29. Data Flow between the i-data 7913 IPDS Printer LAN Attachment and the bootp Daemon

Figure 29 shows the exchange of the following data:

### Universal medium access control (MAC) address

The universal MAC address is unique for each i-data 7913 IPDS Printer LAN Attachment. It is printed on the side panel of the i-data 7913 IPDS Printer LAN Attachment and defined in the hardware. The i-data 7913 IPDS Printer LAN Attachment broadcasts its universal MAC address when it starts. The **bootp** daemon uses the universal MAC address to find the i-data 7913 IPDS Printer LAN Attachment in the **bootptab** file.

### IP address

The IP address is the full address of the i-data 7913 IPDS Printer LAN Attachment as defined to the network. This address must be unique for each i-data 7913 IPDS Printer LAN Attachment.

### Subnet mask

The subnet mask is a bit template that indicates which part of the IP address represents the network. A 1 in the subnet mask indicates that the corresponding bit in the IP address is part of the network address; a 0 indicates that it is not. For example, if the IP address is 9.99.12.137 and the subnet mask is 255.255.255.0, the network address is 9.99.12.0.

### Gateway address

The gateway address is the address of the system that routes data to other networks.

## Filling out the bootp Configuration Worksheet

Before you begin to modify the **/etc/bootptab** file, fill out a **bootp** configuration worksheet for each i-data 7913 IPDS Printer LAN Attachment.

Parameter	Where to Find the Value	Value
Name	Any name that identifies the i-data 7913 IPDS Printer LAN Attachment	
Network type (token ring or Ethernet)	System administrator	
Ring speed (token-ring only)	System administrator	
Universal MAC address	Side panel of the i-data 7913 IPDS Printer LAN Attachment	
IP address	System administrator	
Subnet mask	System administrator	
Gateway address	System administrator	
Printer type (twinaxial or coaxial)	Printer documentation	

## Editing the /etc/bootptab File

The **/etc/bootptab** file contains a separate entry with configuration information for each i-data 7913 IPDS Printer LAN Attachment. To configure this file, edit it and add the values from Table 2. On most AIX systems, you must have **root** authority to edit the **/etc/bootptab** file.

Figure 30 on page 82 shows an example of a simple **/etc/bootptab** file. There are entries for two i-data 7913 IPDS Printer LAN Attachments with the same subnet mask and gateway address.

```
P4028: ht=6: ha=00036EFFFFFF: ip=9.9.12.137:-  
      sm=255.255.255.0: gw=9.99.12.254:  
P3812: ht=6: ha=00036E00049F: ip=9.9.12.138:-  
      sm=255.255.255.0: gw=9.99.12.254:
```

Figure 30. A Simple bootptab File

The keywords and fields in Figure 30 are as follows:

**EntryName**

A name of your choice that identifies the entry. This name has no meaning to the system.

**ht=HostHardwareType**

Enter **6** for a token ring network or **ethernet** for an Ethernet LAN. This keyword must precede the **ha** keyword.

**ha=HostHardwareAddress**

The universal MAC address of the i-data 7913 IPDS Printer LAN Attachment.

**ip=IPAddress**

The IP address of the i-data 7913 IPDS Printer LAN Attachment.

**sm=SubnetMask**

The subnet mask for the IP address.

**gw=GatewayAddress**

The gateway address for the network.

**:** Delimiter indicating the end of a value.

**-** Continuation character indicating that the entry continues on the next line.

Figure 31 on page 83 shows a more complex way to describe the same **bootp** configuration as in Figure 30. The file begins with a global entry for the subnet mask used by all i-data 7913 IPDS Printer LAN Attachments. An entry for the gateway address points to the subnet mask entry. In turn, each entry for an i-data 7913 IPDS Printer LAN Attachment points to the gateway address entry. This style is convenient to use when many i-data 7913 IPDS Printer LAN Attachments share the same subnet mask and gateway address. If the gateway address changes, you need to update only one entry.

```

# Global entry with information that every host uses
global.lan:-
    sm=255.255.255.0:

# Subnet entry with gateway address
subnetida.trlan:-
    tc=global.lan: gw=9.99.12.254:

# Entries for 7913 units
P4028: tc=subnetida.trlan: ht=6: ha=00036EFFFFFF:-
    ip=9.9.12.137:

P3812: tc=subnetida.trlan: ht=6: ha=00036E00049F:-
    ip=9.9.12.138:

```

Figure 31. A More Complex bootptab File

In addition to the keywords you saw in Figure 30 on page 82, Figure 31 contains the following keywords:

**tc=template**

A pointer to another entry that contains addressing information.

**#** Comment character.

### Setting Up the bootp Daemon on AIX

After you have configured the **/etc/bootptab** file, you must set up and start the **bootp** daemon on AIX. Follow these steps:

1. Log on as **root**.
2. Add the following lines to the **/etc/services** file, if they are not already present:

```

bootps  67/udp  # bootp server port
bootpc  68/udp  # bootp client port

```

3. Use *one* of the following methods to start the **bootp** daemon:

- To have the **inetd** super-daemon start the **bootp** daemon, follow these steps:
  - a. Add the following line to the **/etc/inetd.conf** file, if it is not already present:

```
bootps dgram udp wait root /etc/bootpd bootpd
```
  - b. On the AIX command line, enter the following commands so that the **inetd** super-daemon can recognize the update:

```
inetimp
refresh -s inetd
```
- To start the **bootpd** daemon manually, follow these steps:
  - a. Verify that the **/etc/inetd.conf** file does not include a line that controls the **bootpd** daemon. If necessary, comment out or delete the line and refresh the **/etc/inetd.conf** file.
  - b. On the AIX command line, enter one of the following commands:

```
bootpd -s
```

or

```
bootpd -s -d -d -d -d -d
```

The **-s flag** indicates that the **inetd** super-daemon does not control the **bootpd** daemon. Each **-d** flag displays an additional amount of debugging information. You can specify the **-d** flag up to five times.

## Configuring a Twinaxial Printer

If you are using the i-data 7913 IPDS Printer LAN Attachment to connect a twinaxial printer, set the **Station address** to **0** at the printer device.

**Note:** You cannot use the **CANCEL** button on a twinaxial printer to cancel print jobs.

## Setting the Controls for the i-data 7913 IPDS Printer LAN Attachment

There are two models of the i-data 7913 IPDS Printer LAN Attachment, each with different controls:

- Model 03 for IBM token-ring networks
- Model 04 for Ethernet LANs

You must set the controls before you attach the i-data 7913 IPDS Printer LAN Attachment to the printer or to the network.

### DANGER

**Disconnect the i-data 7913 IPDS Printer LAN Attachment from the electrical outlet before setting the controls.**

### Model 03 for IBM Token-Ring Networks

Figure 32 shows the i-data 7913 IPDS Printer LAN Attachment Model 03 for IBM token-ring networks.

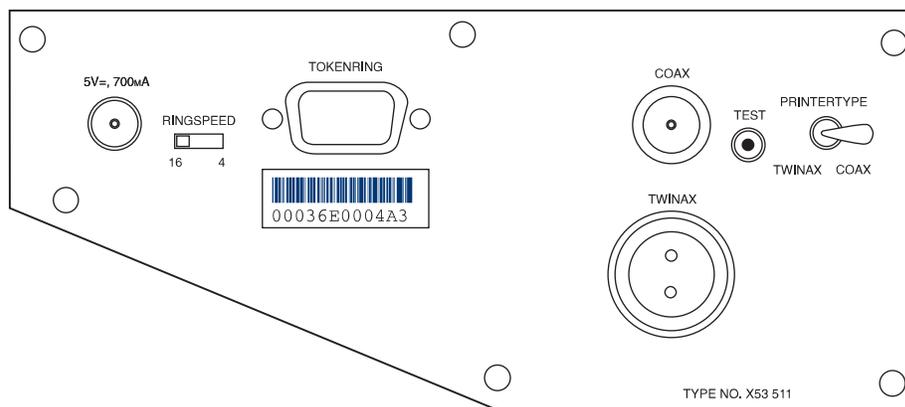


Figure 32. i-data 7913 IPDS Printer LAN Attachment Model 03 for IBM Token-Ring Networks

To set the controls on this model, follow these steps:

1. Disconnect the i-data 7913 IPDS Printer LAN Attachment from the electrical outlet.

2. Set the **RINGSPEED** switch to the speed of the token ring: **4** or **16** megabits per second. You can find out the speed from your system administrator.

**Attention:** If the **RINGSPEED** switch is not set correctly, the LAN may malfunction.

3. Set the **PRINTERTYPE** switch to **COAX** for an IBM coaxial printer or **TWINAX** for an IBM twinaxial printer.

### Model 04 for Ethernet LANs

Figure 33 shows the i-data 7913 IPDS Printer LAN Attachment Model 04 for Ethernet LANs.

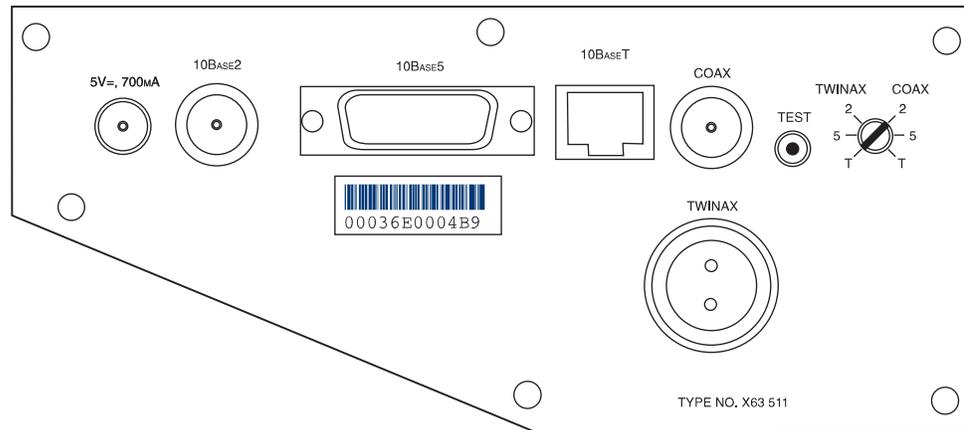


Figure 33. i-data 7913 IPDS Printer LAN Attachment Model 04 for Ethernet LANs

To set the controls on this model, follow these steps:

1. Disconnect the i-data 7913 IPDS Printer LAN Attachment from the electrical outlet.
2. Set the **TWINAX/COAX** rotary switch to one of the following positions:

<b>COAX 2</b>	10base2 to coax
<b>COAX 5</b>	10base5 to coax
<b>COAX T</b>	10baseT to coax
<b>TWINAX 2</b>	10base2 to twinax
<b>TWINAX 5</b>	10base5 to twinax
<b>TWINAX T</b>	10baseT to twinax

## Attaching the i-data 7913 IPDS Printer LAN Attachment

Attach the i-data 7913 IPDS Printer LAN Attachment by cabling it to the token ring or LAN and to the printer. For coaxial printers, you must also install the ferrite cable block shipped with the i-data 7913 IPDS Printer LAN Attachment. The ferrite cable block reduces electrical interference.

**Note:** Cables are not provided with the i-data 7913 IPDS Printer LAN Attachment or with InfoPrint.

1. Disconnect the i-data 7913 IPDS Printer LAN Attachment from the electrical outlet.
2. Use a LAN connection cable to attach the i-data 7913 IPDS Printer LAN Attachment to the token ring or LAN.

3. Use a coaxial or twinaxial connection cable to attach the i-data 7913 IPDS Printer LAN Attachment to the printer.
4. For coaxial printers, clamp the ferrite cable block to the coaxial cable. Position the ferrite cable block about 10 centimeters (4 inches) from the i-data 7913 IPDS Printer LAN Attachment.

## Starting the i-data 7913 IPDS Printer LAN Attachment

To start the i-data 7913 IPDS Printer LAN Attachment, follow these steps:

1. Turn on the printer device.
2. Plug the i-data 7913 IPDS Printer LAN Attachment power cable into an electrical outlet.

The **POWER** light goes on. Several seconds later, the **LAN** light blinks. When the **bootp** daemon initializes the i-data 7913 IPDS Printer LAN Attachment, the **LAN** light changes from blinking to steady.

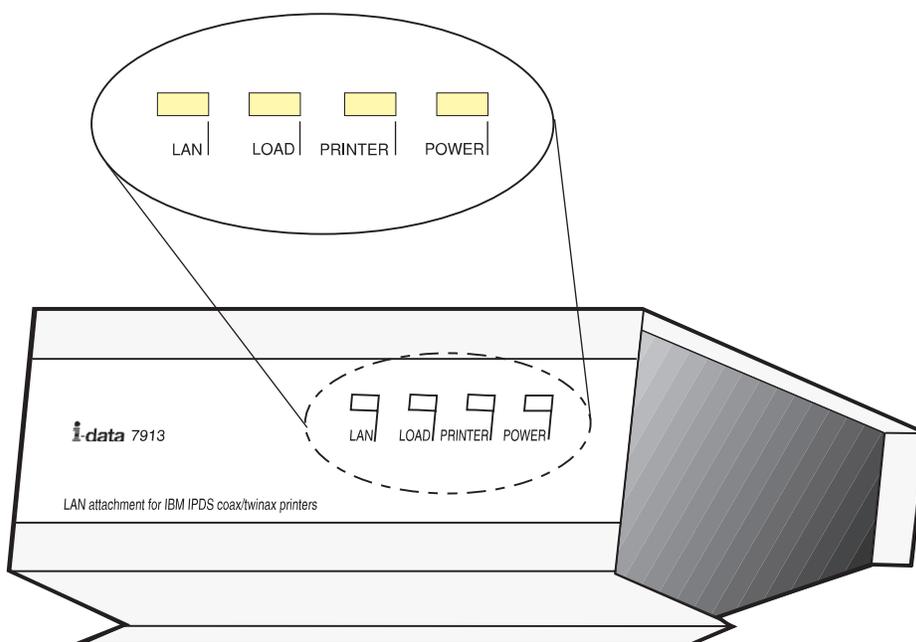


Figure 34. Status Indicators on the i-data 7913 IPDS Printer LAN Attachment

## Testing the i-data 7913 IPDS Printer LAN Attachment

After you have started the i-data 7913 IPDS Printer LAN Attachment, follow these steps to test it:

1. Press the **TEST** button on the side panel of the i-data 7913 IPDS Printer LAN Attachment. This breaks the connection between InfoPrint and the i-data 7913 IPDS Printer LAN Attachment and causes the printer to print a test page.
2. From the RS/6000, ping the i-data 7913 IPDS Printer LAN Attachment to test both the physical LAN connection and the IP network connection.
  - a. Enter the **ping** command and the IP address or host name of the i-data 7913 IPDS Printer LAN Attachment, for example:

```
ping 9.99.12.73
```

If the **ping** command is successful, the response looks like this:

```
ping 9.99.12.73: 56 data bytes
64 bytes from 9.99.12.73: icmp_seq=0 ttl=255 time=1 ms
64 bytes from 9.99.12.73: icmp_seq=1 ttl=255 time=1 ms
64 bytes from 9.99.12.73: icmp_seq=2 ttl=255 time=1 ms
64 bytes from 9.99.12.73: icmp_seq=3 ttl=255 time=1 ms
:
```

b. Press **Ctrl-C** to end the **ping** command.

## Shutting Down the i-data 7913 IPDS Printer LAN Attachment

To end the connection between InfoPrint and the i-data 7913 IPDS Printer LAN Attachment, follow the procedure in “Shutting Down Actual Destinations” on page 191 to shut down the actual destination that represents the printer device.

---

## Configuring the IBM InfoColor 70

If your InfoPrint installation uses an IBM InfoColor 70, you must perform the following tasks:

- Set up all the AIX systems that participate in printing on the InfoColor 70 to share directories.
- Configure RIP options in the default document or **.ini** file.
- Create and configure a 3170 physical printer to represent the InfoColor 70.
- Configure the server to improve performance.
- Set the display to show messages from the raster image processor (RIP).

## Sharing Directories

You must set up the following AIX host systems to share directories:

- The AIX system where the InfoPrint server is installed. In the example in this section, the host name of the InfoPrint system is `ipserv` and the IP address is `9.99.1.1`.
- The AIX system where the InfoColor 70 is attached. In the example, the host name of the of the InfoColor 70 system is `color11` and the IP address is `9.99.1.11`.
- Any other AIX systems that RIP documents for printing on the InfoColor 70. In the example, there is one RIP system whose host name is `RIP12` and whose IP address is `9.99.1.12`.

## Creating Directories

If they do not already exist, create the following directories:

Table 3. Shared Directories for Printing on the InfoColor 70

Create on System	Directory	Purpose
InfoPrint system	<i>/var/pd/HostName</i> , for example, <i>/var/pd/ipserv</i>	Server processing
	<b><i>/ipdata</i></b>	Storage for job tickets, RIPPed jobs, and large job files
	<b><i>/ipdata/library</i></b>	Files retrieved from InfoPrint Library
InfoColor 70 system	<b><i>/custdisk1/HotFolder</i></b>	Copying jobs for automatic print submission
	<b><i>/custdisk1/IPAddress1</i></b> , for example, <i>/custdisk1/9.99.1.11</i>	Storage for RIPPed files
RIP system	<b><i>/custdisk1/IPAddress2</i></b> , for example, <i>/custdisk1/9.99.1.12</i>	Storage for RIPPed files
<p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>1. If InfoPrint Library is not installed, you do not need to create <b><i>/ipdata/library</i></b>.</li> <li>2. You should create all the <i>IPAddress</i> subdirectories in the same directory, normally <b><i>/custdisk1</i></b>. If you create any of these subdirectories in another directory, you must create a symbolic link from <b><i>/custdisk1</i></b> to that directory.</li> </ol>		

## Exporting Directories

On each AIX system, export the directory you created there.

1. Log on as **root**.
2. To start the System Management Interface Tool (SMIT), enter one of the following commands at the AIX command prompt. The first command starts SMIT in the AIXwindows mode. The second command starts SMIT in the ASCII mode:
 

```
smit
smitty
```
3. From the System Management panel, take the following path:
  - a. **Communications Applications and Services**
  - b. **NFS**
  - c. **Network File System (NFS)**
  - d. **Add a Directory to Exports List**
4. Fill in the Add a Directory to Exports List panel. Figure 35 on page 89 shows the values you would enter to export the */var/pd/ipserv* directory from the InfoPrint system. Note that you can leave some values blank.

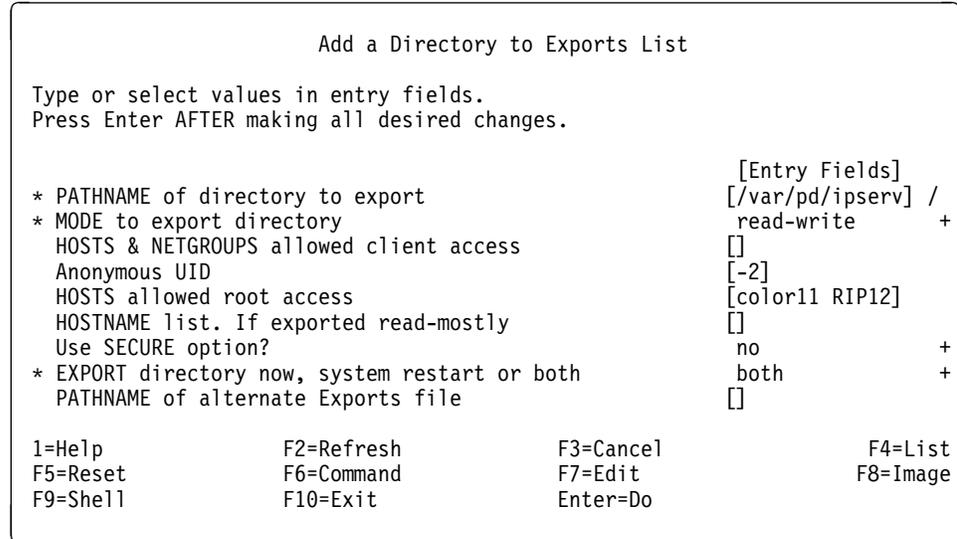


Figure 35. SMIT Add a Directory to Exports List Panel

5. Press **Enter** (ASCII interface) or select Do (AIXwindows interface).
6. Repeat the procedure on each AIX system to export the directories you created there. You must export each subdirectory of **/ipdata** and **/custdisk1**. On the InfoColor 70 system, give **root** access to the InfoPrint system and to each RIP system. On each RIP system, give **root** access to the InfoPrint system, to the InfoColor 70 system, and to each of the other RIP systems.

**Note:** If you use the **-l** flag of the **pdpr** command to create symbolic links to job files, you must also export each linked file system.

## Mounting Directories

On each AIX system, mount the directories you exported from the other AIX systems.

1. Log on as **root**.
2. To start the System Management Interface Tool (SMIT), enter one of the following commands at the AIX command prompt. The first command starts SMIT in the AIXwindows mode. The second command starts SMIT in the ASCII mode:
 

```
smit
smitty
```
3. From the System Management panel, take the following path:
  - a. **Communications Applications and Services**
  - b. **NFS**
  - c. **Network File System (NFS)**
  - d. **Add a File System for Mounting**
4. Fill in the Add a File System for Mounting panel. Figure 36 on page 90 shows the values you would enter to mount the **/custdisk1/HotFolder** directory. Note that you can leave some values blank.

**Attention:** Mount each directory with the same name that it has on the system where it was created. If you give it a different name, InfoPrint may not be able to find files.

```

                                Add a File System for Mounting

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                [Entry Fields]
* PATHNAME of mount point          [ /custdisk1/HotFolder ] /
* PATHNAME of remote directory    [ /custdisk1/HotFolder ]
* HOST where remote directory resides [ color11 ]
Mount type NAME                    [ ]
* Use SECURE mount option?         no +
* MOUNT now, add entry to /etc/filesystems or both? both +
* /etc/filesystems entry will mount the directory yes +
  on system RESTART.
* MODE for this NFS file system    read-write +
* ATTEMPT mount in foreground or background background +
NUMBER of times to attempt mount    [ ] #
Buffer SIZE for read                [ ] #
Buffer SIZE for writes               [ ] #
NFS TIMEOUT. In tenths of a second [ ] #
Internet port NUMBER for server     [ ] #
* Mount file system soft or hard    soft +
Allow keyboard INTERRUPTS on hard mounts? yes +
Minimum TIME, in seconds, for holding attribute cache after file modification [3] #
Maximum TIME, in seconds, for holding attribute cache after file modification [60] #
Minimum TIME, in seconds, for holding attribute cache after directory modification [30] #
Maximum TIME, in seconds, for holding attribute cache after directory modification [60] #
Minimum & Maximum TIME, in seconds, for holding attribute cache after any modification [ ] #
The Maximum NUMBER of biod daemons allowed to work on this file system [6] #
* Allow execution of SUID and sgid programs yes +
  in this file system?
* Allow DEVICE access via this mount? yes +
* Server supports long DEVICE NUMBERS? yes +

1=Help          F2=Refresh          F3=Cancel          F4=List
F5=Reset        F6=Command          F7=Edit           F8=Image
F9=Shell        F10=Exit            Enter=Do

```

Figure 36. SMIT Add a File System for Mounting Panel

5. Press **Enter** (ASCII interface) or select Do (AIXwindows interface).
6. Repeat the procedure on each AIX system to mount the directories you created on the other AIX systems.

### Editing the **/.rhosts** File

To be sure that the InfoPrint system can access the directories it shares with the InfoColor 70 system and the RIP systems, edit the **/.rhosts** file on the InfoColor 70 system and each RIP system. The **/.rhosts** file must contain a line giving root permission to the InfoPrint system by both host name and IP address, for example:

```

ipserv    root
9.99.1.1  root

```

## Configuring RIP Options

InfoPrint uses options for RIPping jobs to print on the InfoColor 70 in the following order:

1. Options specified at job submission.
2. Attribute values in the default document associated with the logical destination.
  - For default document attributes, refer to the *IBM InfoPrint Manager for AIX: Reference* or to the **pd\_att\_document** man page.
  - For how to create a default document, see “Creating Default Objects” on page 139.
  - For how to associate a default document with an actual destination, see “Associating a Default Job or Document Object with a Logical Destination” on page 140.
3. Options in the **.ini** file associated with the actual destination.
4. For image width and image length, actual destination attribute values. For actual destination attributes, refer to *IBM InfoPrint Manager for AIX: Reference* or to the **pd\_att\_act\_dest** man page.

The default **.ini** file shipped with InfoPrint is called **/usr/lpp/pd/bin/default.ini**. All 3170 actual destinations use this **.ini** file unless you specify another file using the **rip-ini-file** actual destination attribute.

**Attention:** If you want to change the RIP options, do not edit the **/usr/lpp/pd/bin/default.ini** file. Copy it, make the changes in your copy, and specify your copy as the value of the **rip-ini-file** actual destination attribute. If there is a problem with your copy, you can restore the original values by resetting the **rip-ini-file** actual destination attribute to its default value.

Figure 37 on page 92 shows an example of an **.ini** file.

```

[setup]
bps:          4
res:          600
output:       JobName
ocompress:    align72
offormat:     B/custdisk1/

duplex:       1
tumble:       0
orientation:  0
copies:       1
enablesettrap: 0
blackoverprint: 0
overprint:    P

stat:         2
profile:      0
machdebug:    0
centery:      0
pageclip:     C
outputfaceup: 0
jobtype:      M
cms_product:
cms_proclink:
monochrome:   0
resident:     0

outputbin:    1s
cutmedia:     1
controlstrip:
ssy:          1
centerx:      0
autotrap:     0
psx:
psy:
[job1]
name:         %stdin%
type:         ps
dot:          /c=r,170,15/m=r,170,75/y=r,170,90/k=r,170,45
scale:        1
hpos:         0
vpos:         0

```

Figure 37. Sample .ini File

The keywords in the **[setup]** section of the .ini file are as follows:

- bps** Indicates the number of bits used to describe the gray value for each pixel. You can enter one of the following values:
- 2** Each pixel can have one of four levels of gray, from 0 to maximum density.
  - 4** Each pixel can have one of sixteen levels of gray, from 0 to maximum density.

This keyword is equivalent to the document attribute **bits-per-spot**.

- res** Indicates the resolution, in pels, at which the printer device should print the image data in documents. For InfoColor 70 printers, the only valid value is **600**.
- This keyword is equivalent to the document attribute **default-printer-resolution**.
- output** The name of the RIPped file. The value **JobName** indicates that this name should be the same as the job name.
- ocompress** Indicates whether and how to compress the RIPped file. **align72** is the only valid compression algorithm. You should not change this value because in most cases it is desirable to compress the RIPped file. When you do not want to compress it, set the document attribute **compressed-output** to **false**.
- This keyword is similar to the document attribute **compressed-output**.
- ofomat** The directory where backup RIPped files are stored. Do not change this value.
- duplex** Indicates whether to print on both sides of the paper. Enter **1** for true or **0** for false.
- This keyword is similar to the document attribute **sides**.
- tumble** Indicates whether to print successive pages so that the top of one page is at the same edge of the bottom of the next page. Enter **1** for true or **0** for false. If **duplex** is **0**, you must enter **0**.
- This keyword is similar to the document attribute **plex**.
- orientation** Indicates the placement of the image on the page. You can enter one of the following values:
- 0** Portrait
  - 1** Landscape
  - 2** Reverse portrait
  - 3** Reverse landscape
- This keyword is similar to the document attribute **content-orientation**.
- copies** Indicates the number of document copies to print. Enter an integer from **1** to **2147483647**.
- This keyword is equivalent to the document attribute **copy-count**.
- enablesettrap** Indicates whether to turn on trapping for Quark XPress jobs. Enter **1** for true or **0** for false.
- This keyword is equivalent to the document attribute **enable-settrap**.
- blackoverprint** Indicates whether to print black over colors. You can enter one of the following values:
- 0** Omit colors from areas where black will be printed.
  - 1** Print a colored background with black over it.
- This keyword is equivalent to the document attribute **black-overprint**.

**overprint** Indicates how to handle overprinting. You can enter one of the following values:

- 0** Ignore overprinting.
- 1** Render objects as if they would truly overprint each other.
- P** Handle overprinting according to PostScript specifications, knocking out in separations where the object applies ink.

This keyword is equivalent to the document attribute **overprint**.

**stat** Indicates the level of statistical information to report. You can enter an integer from **0** (none) to **4** (detailed).

**profile** You can leave this value blank.

**machdebug**

Indicates the level of machine debugging information to report. You can enter an integer from **0** (none) to **4** (detailed).

**centery** Indicates whether to center the image vertically. Enter **1** for true or **0** for false.

This keyword overrides the **vpos** keyword.

This keyword is equivalent to the document attribute **image-center-y**.

**pageclip** Indicates how to clip images that are too wide for the page. You can enter one of the following values:

- C** Center the image horizontally and clip both sides.
- R** Clip the right side of the image.
- E** Issue an error message and end the job.

This keyword is equivalent to the document attribute **page-clip**.

**outputfaceup**

Indicates whether to start the document on the side of the sheet that faces up in the output bin. Enter **0** for true or **1** for false. Note that these values are the opposite of what you would expect.

This keyword is similar to the document attribute **output-face-up**. Note that a value of **true** for the document attribute corresponds to a value of **0** for this keyword and results in face-up output. A value of **false** for the document attribute corresponds to a value of **1** for this keyword and results in face-down output.

**jobtype** Indicates the type of data. You can enter one of the following values:

- M** Master file
- V1** Variable data that completely replaces the master file
- V2** Variable data that replaces the master file where the variable data applies toner
- V3** Variable data that replaces the master file where the variable data does not apply toner. This value is used to print variable data in white.
- T** Test data

**cms\_product**

Identifies the color correction program. You can enter a value of **xeikon** or leave the value blank. If you enable Xeikon color correction, you must specify a value for the **cms\_proclink** keyword or for the document attribute **cms-proclink**.

This keyword is equivalent to the document attribute **cms-product**.

**cms\_proclink**

Identifies the translation table used by the color correction program. You can enter one of these fixed values:

**matchp\_ndtg2xkn\_2**

Match print, normal dot gain, 2 bits per spot

**matchp\_ndtg2xkn\_4**

Match print, normal dot gain, 4 bits per spot

**swop\_crom2xkn\_2** SWOP Cromalin, 2 bits per spot

**swop\_crom2xkn\_4** SWOP Cromalin, 4 bits per spot

This keyword is equivalent to the document attribute **cms-proclink**.

**monochrome**

Indicates whether to print in black and white. Enter **1** for true or **0** for false.

**resident** Indicates whether to retain the RIPped file on the collator after printing. Enter **1** for true or **0** for false.

**output-bin**

Indicates the output bin. Enter the name of an output bin.

This keyword is equivalent to the document attribute **output-bin**.

**cutmedia** Indicates whether to cut the paper. Enter **1** for true or **0** for false.

**controlstrip**

Indicates the file name of the pre-RIPped control strip to print with all documents. The control strip must be on the collator.

This keyword is equivalent to the document attribute **control-strip**.

**ssy** The length of the medium sheet. Enter the length in millimeters or one of these fixed values:

**0** The sheet length equals the signature length. Because the InfoColor 70 requires some white space between signatures, a number of scan lines at the top, bottom, or both of the signature will not be included in the image.

**1** The sheet length equals the signature length plus the minimum amount of white space that the InfoColor 70 requires between signatures.

**centerx** Indicates whether to center the image horizontally. Enter **1** for true or **0** for false.

This keyword overrides the **hpos** keyword.

This keyword is equivalent to the document attribute **image-center-x**.

**autotrap** Indicates whether to enable trapping. Enter **1** for true or **0** for false.

**Note:** Trapping is a licensed feature of the InfoColor 70. **1** is valid only if this feature is installed.

**psx** Indicates the width in millimeters of an image after it has been transformed for printing.

This keyword is similar to the document attribute **image-width**.

**psy** Indicates the length in millimeters of an image after it has been transformed for printing.

This keyword is similar to the document attribute **image-length**.

The keywords in the **[job1]** section of the **.ini** file are as follows:

**name** Indicates the name of the job to which the keywords in this section apply. The value **%stdin%** indicates that they apply to any job submitted.

**type** Indicates the data type. This value is always **ps**.

**dot** Indicates the shape of pixels. Enter a value in this format:

*/color=shape, lpi, angle...*

where:

*color* Indicates the dot color:

**c** Cyan  
**m** Magenta  
**y** Yellow  
**k** Black

*shape* Indicates the dot shape:

**r** Round  
**c** Combined  
**l** Line  
**ln** Line not calibrated

*lpi* Is the screen frequency in lines per inch.

*angle* Is the screen angle.

Some possible values are:

**Classic** */c=r,170,15/m=r,170,75/y=r,170,90/k=r,170,45*

**Combined**

*/c=c,170,15/m=c,170,75/y=c,170,90/k=c,170,45*

**Sofocles** */c=l,158,15/m=l,158,75/y=l,158,90/k=l,158,45*

**Sofocles not calibrated**

*/c=ln,158,15/m=ln,158,75/y=ln,158,90/k=ln,158,45*

**No screen**

*/c=r,600,15/m=r,600,75/y=r,600,90/k=r,600,45*

This keyword is similar to the document attribute **dot-shape**.

**scale** Indicates the image scaling factor. You can enter a numeric value from **0** to **2147483647**, which may optionally contain a decimal point. For example, to scale 120%, enter 1.2.

This keyword is equivalent to the document attribute **image-scale**.

**hpos** Indicates the horizontal offset of the logical page in millimeters to the right of the physical page origin.

The **centerx** keyword overrides this keyword.

This keyword is equivalent to the document attribute **x-image-shift**.

**vpos** Indicates the vertical offset of the logical page in millimeters below the physical page origin.

The **centery** keyword overrides this keyword.

This keyword is equivalent to the document attribute **y-image-shift**.

## Creating and Configuring the Physical Printer

Use the procedure in “Creating Actual Destinations” on page 106 to create a 3170 physical printer to represent the InfoColor 70 printer device. Then issue the following command to define the hot folder, the .ini file, the RIP servers, and the directory where the RIP servers store files:

```
pdset -c destination -x "printer-hot-folder=/custdisk1/HotFolder
rip-ini-file=/iniFilePath transform-output-location=/custdisk1"
-x rip-server="IPAddress1...IPAddressN" PrinterName
```

For example, if the physical printer is called colorprint, the .ini file is called /usr/lpp/pd/bin/colorprint.ini, and the other values are taken from the example in “Sharing Directories” on page 87, enter:

```
pdset -c destination -x "printer-hot-folder=/custdisk1/HotFolder
rip-ini-file=/usr/lpp/pd/bin/colorprint.ini
transform-output-location=/custdisk1" -x rip-server="9.99.1.11 9.99.1.12"
colorprint
```

Note that the system where the InfoColor 70 is attached is included among the RIP servers.

## Configuring the Server

For good performance, you must configure the server where you created the 3170 physical printer to limit the number of PostScript jobs that can be RIPped for the InfoColor 70 at one time. The limit should be the same as the number of RIP servers, including the system where the InfoColor 70 is attached.

1. Use the procedure in “Shutting Down a Server” on page 72 to shut down the server.
2. Enter the following command on the AIX command line:

```
pdset -c server -x "maximum-barco-rips=n" ServerName
```

where *n* is the number of RIP servers and *ServerName* is the name of the server where you created the 3170 physical printer. For example, if the server name is ipserv and you have two RIP servers, enter:

```
pdset -c server -x "maximum-barco-rips=2" ipserv
```

3. Use the procedure in “Creating Additional Servers or Starting Existing Servers” on page 65 to restart the server.

## Configuring the Display

By default, messages from the RIP are displayed in a window on the system that RIPs the job. To display the messages on another system, edit the /usr/lpp/pd/bin/colorrip script on the InfoPrint system. In this script, change the value of the **RIPDISPLAY** variable to the host name of the system where you want to display messages. Then log onto the system where you want to display messages and issue the following command:

```
xhost +RipServer
```

where *RipServer* is the host name of the system that processes the RIP. This command gives the RIP server permission to display windows on the system where you issue the command.

**Note:** At least one user must be logged on to the system where messages are displayed, or the RIP will fail.

---

## Configuring the IBM InfoPrint 4000

Perform the following procedure with the help of your IBM service engineer (SE) to ensure that the actual destination, the InfoPrint 4000 printer device, and the cutter-trimmer-stacker (CTS) (a post-processing device used for paper handling) all support the same media types.

1. Use the procedure in “Associating a Medium with a Physical Printer” on page 148 to specify the media that the actual destination representing the InfoPrint 4000 supports.
2. On the printer, define forms that correspond to the media you specified in step 1, for example:

<i>Medium Object Name</i>	<i>Printer_Form Name</i>	<i>Printing_Form Description</i>
<b>letter</b>	<b>na letter</b>	2-Up letter (8.5 by 11)
<b>legal</b>	<b>na legal</b>	2-Up legal (8.5 by 14)
<b>ledger</b>	<b>ledger</b>	1-Up (11 by 17)

3. Set up the CTS for the dimensions required by the supported media. For example, to support ledger-size paper, set up the CTS for an 11-inch cut width and a 14-inch cut length. Note that the CTS may support a limited set of cut lengths and only one center slitting option.

---

## Configuring Printer Devices that Support Halftones

When you configure a printer device that supports halftones, such as the IBM InfoPrint 20 with the Intelligent Printer Data Stream (IPDS) feature, do the following tasks:

1. Configure the actual destination as a PSF TCP/IP-attached physical printer. Specify the printer model in the format **InfoPrintxx**, where *xx* is the model number, for example, InfoPrint20. Do not insert a space before the model number.
2. Configure the printer device for halftones. Using the operator's panel of the printer device or the Network Printer Management program, go to the **CONFIG** menu and set **QUALITY** to **REFINE**.
3. Calibrate the printer device. See “Calibrating the Printer Device” on page 192.
4. If you are not satisfied with the quality of print jobs, adjust the values controlling print quality in the default document associated with the logical destination that routes jobs to the actual destination. See “Adjusting Print Quality in a Default Document Object” on page 140.

---

## Chapter 8. Creating and Managing Actual Destinations

The IBM InfoPrint Control (InfoPrint) actual destination is the InfoPrint software representation of an output device. An actual destination can be a physical printer (representing a printer device), a fax destination (representing a fax machine) or an e-mail destination (representing an electronic mailing address).

The attributes of the actual destination reflect how the device connects to the RS/6000 and describe the features, functions, and capabilities of the device. Through actual destination configuration, you can ensure that InfoPrint validates that a device is available that supports the requirements of a job before accepting and processing the job. You also configure actual destinations to control how InfoPrint schedules jobs.

You can create an InfoPrint actual destination in the same InfoPrint server that contains the queue from which it will receive jobs, or in a different server.

---

### Preparing to Work with Actual Destinations

You create and manage InfoPrint actual destinations through the InfoPrint administrator's GUI. The following topics describe information you need to obtain before creating new actual destinations and usage tips for displaying actual destination information.

### About Destination Support Systems

The programs that the actual destination uses to send jobs to the output device are called the destination support system (DSS). InfoPrint supports the following DSS:

**AIX DSS** The AIX DSS permits InfoPrint to bridge to the AIX print-spooling subsystem. In standard AIX printing, users submit jobs to an AIX print queue. The AIX print-spooling subsystem schedules the jobs and passes them to a printer device by means of a backend program, usually **piobe** or, if the queue is a remote queue, **rembak**.

In the AIX DSS, users submit jobs to a destination, from which an InfoPrint queue receives them. The InfoPrint physical printer submits jobs to the printer device using an AIX backend program.

You must attach this type of printer device as specified by its documentation before creating its associated InfoPrint actual destination.

#### **BSD DSS**

The BSD DSS permits InfoPrint to bridge to existing UNIX/BSD printing subsystems. InfoPrint sends jobs submitted to BSD physical printers as separate print requests to a local or remote print queue.

For local printer devices, InfoPrint can use the **piobe** backend program. More typically, InfoPrint uses the **rembak** program to send jobs a printer device connected to another processor. This processor can run AIX or any other operating system that supports the **lpd** protocol and that connects to the network using TCP/IP.

For remote printer devices, you must set up a remote queue and configure the remote system. Refer to the printer configuration documentation of the remote system.

**PSF DSS** The PSF DSS permits InfoPrint to bridge to the PSF for AIX printing subsystem and to communicate with output devices that have Advanced Function Presentation (AFP) functionality. InfoPrint transforms jobs submitted to PSF destinations to the AFP data stream before sending them to the output device.

The way in which InfoPrint communicates with the output device depends on the type of actual destination. For physical printers, it also depends on the attachment type (see “About Attachment Types for PSF Physical Printers”).

### **3170 DSS**

InfoPrint uses the 3170 DSS to communicate with IBM InfoColor 70 printer devices. Before creating the actual destination, you must determine the Internet Protocol (IP) address of the printer device. Before submitting jobs to the actual destination, you must perform the tasks described in “Configuring the IBM InfoColor 70” on page 87.

### **Email DSS**

InfoPrint uses the email DSS to communicate with electronic mailing systems.

**Fax DSS** InfoPrint uses the fax DSS to communicate with fax devices.

## **About Attachment Types for PSF Physical Printers**

The attachment type for an actual destination defines how the printer device attaches to the RS/6000 and communicates with InfoPrint. Based on the printer device, the attachment type is one of the following:

- **AIX.** You must attach this type of printer device as specified by its documentation and configure it in AIX before creating its associated InfoPrint actual destination. Because InfoPrint sends jobs submitted to PSF AIX-attached physical printers to a local or remote AIX print queue, you must also configure the AIX print queue. You will use the device name of the AIX print queue as the device name of the InfoPrint actual destination.

Refer to *Printing for Fun and Profit under AIX* for instructions for configuring a printer device and a print queue.

- **Channel.** The printer device attaches to the RS/6000 through a S/370 Channel Emulator/A adapter. Before creating the actual destination, you must identify the slot number in the RS/6000 that contains the S/370 Channel Emulator/A adapter and the hexadecimal control unit address of the printer device.
- **Direct.** You must attach this type of printer device as specified by its documentation before creating its associated InfoPrint actual destination.
- **TCP/IP.** The printer device communicates using the intelligent printer data stream (IPDS) and attaches to the RS/6000 through the TCP/IP network. Before creating the actual destination, you must determine the Internet Protocol (IP) address of the printer device and the port number through which InfoPrint communicates with the device. The port number for TCP/IP-attached printers is an integer from 5001 to 65535. For printers attached using the i-data 7913 IPDS Printer LAN Attachment, you must use **5001** as the port number.
- **Upload-SNA.** The printer device is attached to an MVS system. InfoPrint communicates with PSF/MVS through the SNA network. Before creating the actual destination, you must determine the code pages used on both the AIX and MVS systems.

- **Upload-TCP/IP.** The printer device is attached to an MVS system. InfoPrint communicates with PSF/MVS through the TCP/IP network. Before creating the actual destination, you must determine the Internet Protocol (IP) address of the printer device and the port number through which InfoPrint communicates with the device. The port number for TCP/IP-attached printers is an integer from 5001 to 65535. You must also determine the code pages used on both the AIX and MVS systems.

## Selecting a DSS and Attachment Type

When you select a DSS and attachment type for an actual destination, you must consider:

- The type of actual destination. Only the fax DSS supports fax destinations. Only the email DSS supports electronic mail destinations. The AIX, BSD, PSF, and 3170 DSSs support physical printers.
- The printer model that a physical printer represents. For example, only the 3170 DSS supports the IBM InfoColor 70 printer.
- The features of the printer device. For example, only the PSF DSS allows you to specify options that apply to printer devices with a finisher attached. Only PSF TCP/IP-attached physical printers support the printer device features that allow you to print halftones.
- The document formats you want to support. For example, AIX physical printers do not support ditroff format. BSD physical printers support many document formats, but usually only one at a time. PSF upload-SNA-attached and upload-TCP/IP-attached printers do not support ASCII format.
- Processing speed. PSF physical printers transform all input data into the AFP data stream. This enables each physical printer to support many document formats, but it also means slower processing.
- The attributes you want to specify for the actual destination, for jobs you submit to it, and for the documents in those jobs. For the attributes supported by each DSS, refer to *IBM InfoPrint Manager for AIX: Reference* or to the **pd\_att\_act\_dest**, **pd\_att\_job**, and **pd\_att\_document** man pages.

### Limitations of BSD Physical Printers

If possible, you should avoid configuring physical printers with the BSD DSS for these reasons:

- Because InfoPrint does not directly control the printer device, printer status information and error detection are limited. For example, if the remote queue is up, but the printer device cannot print because of a hardware problem, the BSD physical printer remains in a normal state.
- For the same reason, job status information is limited. For example, InfoPrint reports jobs as complete when they have been sent to the remote queue even though the printer device may be down. This means that you should not include BSD physical printers in a pool. Jobs may be requeued on the remote queue and never actually printed, although other printers in the pool may be capable of printing them.
- Because most AIX print queues support only one data stream, BSD physical printers usually accept only a single document format.

- BSD physical printers do not generate auxiliary sheets. The system where the printer device is attached may create auxiliary sheets, but you cannot control them using InfoPrint attributes.
- If a job sent to a BSD physical printer includes multiple result-sets, the output may be interleaved with the output from other jobs. For example, if you request two copies of a job, the printer device may print one copy, then another job, then the second copy.

### **Limitations of PSF AIX-Attached Physical Printers**

Because PSF AIX-attached physical printers also requeue jobs to a local or remote queue, they share many of the limitations of BSD physical printers listed in “Limitations of BSD Physical Printers” on page 101. Unlike BSD physical printers, they support multiple document formats, because the PSF DSS automatically transforms all input data to the AFP data stream before sending it to the AIX print queue. PSF AIX-attached physical printers also generate auxiliary sheets.

## **Displaying Actual Destination Templates**

InfoPrint provides several templates, based on the type, DSS, and attachment type of the output device, that you can use to create actual destinations. You can control which templates you can display and access in the Template Area of the Print Administration window of the basic InfoPrint administrator's GUI or the Servers window of the advanced InfoPrint administrator's GUI. If you want to change the templates that display:

1. From the Print Administration or Servers window, select the **Preferences** button. The User Preferences dialog window displays.
2. Use the **List** button for the **Display actual destination templates** list box to display the different templates. Select the templates you do want to use.
3. Select the **OK** button.

InfoPrint displays only the actual destination templates you have selected.

## Creating Your Own Actual Destination Templates



Actual  
Destination  
Template Type

If you need to create a number of actual destinations for several similar output devices, you may want to create a customized template. You set up the template to include specific values to streamline the process of creating the actual destinations.

To create your own actual destination template:

1. From the **Print Administration** or **Servers** window, select the **Actual Destination Template Type** icon from the **Types** column in the **Template Area** to display existing actual destination templates.
2. Drag one of the existing templates and drop it on an open area of the **Template Area**. A **Create Template** notebook displays.
3. Select the **Help** button to display help for the notebook. Use the online help to determine what values you can supply for the fields on the different tabs of the notebook and enter the values that you need for your custom template.  
**Note:** You can also use the **?** button to view help information for each field.
4. Select the **OK** button.

InfoPrint adds the template you created to the actual destination templates displayed in the **Template Area**.

## Activating the Event Log

While the InfoPrint administrator's GUI provides you with visual indicators of changes in actual destination status, you may want to record event information in an event log. See "Activating the Event Log" on page 66 for the procedure.

## Searching for an Actual Destination Event in the Event Log

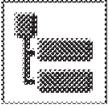
To locate the log entry for a particular actual destination:

1. If the event log is minimized, restore it.
2. Enter the name of the actual destination in the **Search for** field.
3. Use the **Find Newest** and **Find Next** buttons.
  - a. Select the **Find Newest** button.

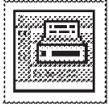
This causes the list to scroll from the top of the list to the first occurrence of the search string. That log entry is highlighted.
  - b. Select the **Find Next** button.

This causes the list to scroll to the next occurrence of the search string. That log entry is highlighted.
4. After viewing the information, you can minimize the window. InfoPrint continues to log event information when the event log is open or minimized.

## Displaying Actual Destinations in the InfoPrint Administrator's GUI



Expand to Wells



Open Printers Window

All of the procedures described in this section require you to have either an actual destinations well or an actual destinations pane open.

In the basic InfoPrint administrator's GUI, open the **Print Administration** window from the desktop. This window contains an actual destinations pane.

**Note:** The **Print Management** window also contains an actual destinations pane, but you cannot perform certain procedures in the **Print Management** window.

In the advanced InfoPrint administrator's GUI, there are several ways to open an actual destinations well or pane. Two of the easiest ways are to open an actual destinations well or pane from the Servers window.

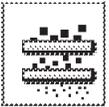
- Either double-click on a server icon or drag the **Expand to Wells** icon from the Display Controls area and drop it on a server icon.

This opens an actual destinations well and a queues well below the server icon in the Servers window Work Area.

- Drag the **Open Printers Window** icon from the Actions area and drop it on a server icon.

This opens the Server/Physical Printers window, which contains an actual destination pane.

## Controlling the Actual Destinations Displayed in the Work Area



Filter (Include)

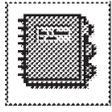
You can set up filter criteria to control which actual destinations display in the Work Area of the InfoPrint administrator's GUI. You may find this useful if you have many actual destinations and you only want to work with a selected group of them.

To filter for specific actual destinations:

1. Open an actual destinations well or a window with an actual destinations pane.
2. Drag the **Filter (Include)** icon from the Display Controls area and drop it on an open area of the actual destinations well or pane. The Filter Physical Printers window displays.
3. Use the fields on the window to enter your filter criteria. You can use the **Help** button or the **?** button to view information on the fields.
4. Select the **OK** button.

Only actual destinations matching your filter criteria display.

## Displaying the Attributes Notebook for an Actual Destination



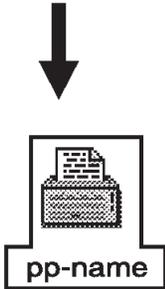
You view and change actual destination attributes through the attributes notebook for the actual destination. You perform many of the configuration and maintenance tasks in this section using the attributes notebook.

To display a notebook for an actual destination:

1. Open an actual destinations well or a window with an actual destinations pane.
2. Drag the **Notebook** icon from the Actions area and drop it on the actual destination icon.

InfoPrint opens the attributes notebook for the actual destination.

**Note:** If you wish to change the attributes, you must first disable the actual destination. When you have made the changes, you must reenable the actual destination so that it can accept jobs. See “Disabling and Enabling Actual Destinations” on page 186.



## Determining the Status of an Actual Destination

See “Determining the Status of an Actual Destination” on page 180.

## Making the Same Change to More Than One Actual Destination



You can make the same change to multiple actual destinations at the same time. You may want to do this if you have a pool of printers used for printing the same types of jobs and you need to update one or more actual destination attributes to support the jobs.

To make a change to more than one actual destination:

1. Open an actual destinations well or a window with an actual destinations pane.
2. Select two or more of the actual destination icons using one of the following methods:
  - Use the mouse and marquee select the icons by holding down the mouse button and drawing a box around the icons.
  - Hold down the **Shift** key and select two or more of the actual destination icons.
3. Drag one of the highlighted actual destination icons and drop it on the **Global Change** icon in the Actions area. The Global Change - Select Physical Printer Attributes dialog window displays.
4. Select one or more attributes.
5. Select the **OK** button. The Global Change - Specify Attribute Values dialog window displays listing fields, lists, or buttons for all of the attributes you selected.
6. Fill in the value changes for the attributes. Then select the **OK** button.

InfoPrint applies the attribute values to all of the selected actual destinations.



---

## Creating Actual Destinations

Create an actual destination for each output device used with your printing system. You can use either the basic or the advanced InfoPrint administrator's GUI to create most types of actual destination, with these exceptions:

- You cannot create PSF upload-TCP/IP-attached physical printers or PSF upload-SNA-attached-physical printers from the InfoPrint administrator's GUI. You must use the AIX command line.
- You cannot create 3170 physical printers from the advanced InfoPrint administrator's GUI. You must use either the basic InfoPrint administrator's GUI or the AIX command line.

Generally you will have up to five actual destinations within an InfoPrint server and one server running on each AIX system.

## Using the InfoPrint Administrator's GUI



You can create most actual destinations using an InfoPrint-supplied template or a custom template that you have created.



Use the following procedure to create an actual destination using the InfoPrint administrator's GUI:



1. If you are using the advanced InfoPrint administrator's GUI, ensure that the server that will contain the new actual destination displays as an icon in the Servers pane in the Work Area of the Servers window. If it does not, use the **Select Servers...** button to select the server.
2. Select the **Actual Destination Template Type** icon from the Types column in the Template Area to display actual destination templates.
3. Drag the actual destination template you want to use from the Template Area.
  - In the basic InfoPrint administrator's GUI, drop the template in the Actual Destinations pane. You will be prompted to select the server that will contain the actual destination.
  - In the advanced InfoPrint administrator's GUI, drop the template on the appropriate server icon.

The Add Actual Destination dialog window displays.

4. Fill in the information in the fields that are required based on the type of actual destination that you are creating. For detailed information on the fields, select the **Help** button on the dialog window.
5. Select the **OK** button.

InfoPrint creates a new actual destination using the information you supplied and any attribute values specified by the actual destination template you used. In the basic InfoPrint administrator's GUI only, it also creates a new logical destination and a new default job. The new default job is associated with the new logical destination and requests the new actual destination.

The new actual destination is not enabled at this point. To use the actual destination, you must enable it.

## Using the AIX Command Line

Because there are no templates for PSF upload-TCP/IP-attached physical printers or PSF upload-SNA-attached physical printers, you must use the **pdcreate** command to create these physical printers. Because there are no templates for 3170 physical printers in the advanced InfoPrint administrator's GUI, you may wish to use the **pdcreate** command to create these physical printers.

You must specify the following information when you create a physical printer:

- The name of the server where you want to create the new physical printer
- The name of the new physical printer

For PSF upload-SNA-attached physical printers and PSF upload-TCP/IP-attached physical printers, you must also specify:

- The attachment type
- The printer model
- The ASCII code page used on AIX
- The EBCDIC code page used on MVS (default **ibm-037**)

For PSF upload-TCP/IP-attached physical printers, you must also specify:

- The IP address of the printer device
- The port number used by the physical printer

For 3170 physical printers, you must also specify:

- The IP address of the printer device

For example, you might enter the following command:

```
pdcreate -x "destination-realization=actual
attachment-type=upload-tcpip associated-queue=Server1-q
destination-model='IBM 3820' ascii-character-mapping=ibm-850
destination-tcpip-internet-address=westmvs3.boulder.ibm.com
destination-tcpip-port-number=6001" Server1:Destination9
```

For more information, refer to *IBM InfoPrint Manager for AIX: Reference* or the **pdcreate** and **pd\_att\_act\_dest** man pages.

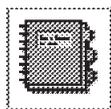
---

## Specifying the Media Supported by a Physical Printer

Media are the types of paper or forms on which jobs print. Typically, you will have certain types of jobs that require a specific type of medium. To configure your physical printers so that they reflect the different types of media operators can load (the media supported), see “Associating a Medium with a Physical Printer” on page 148.

---

## Specifying the Default Form Definition for an Actual Destination



The form definition used to process a job specifies:

- The input tray (and consequently the medium loaded in that input tray)
- Whether the job is printed on one or two sides of the paper
- For two-sided jobs, the relative orientation of consecutive pages
- Whether the job is oriented in portrait or landscape mode
- The X- and Y-offsets
- The number of pages imposed on a sheet
- Finishing values
- Overlays
- The output bin

For information about the available form definitions, refer to *IBM InfoPrint Manager for AIX: Reference*.

When a form definition is not specified with the job, included inline, or generated especially for the job, the default is the form definition associated with the actual destination. To specify this default form definition:

1. In the advanced InfoPrint administrator's GUI, open the attributes notebook for the actual destination.
2. Select the **Summary** attribute group button. A list displays.
3. Select **PSF Resources**.
4. In the **Form definition** field, enter the name of the form definition.
5. Select the **OK** button.

---

## Specifying the Default Input Tray for a PSF Physical Printer



To specify the input tray that a PSF physical printer uses when neither the job nor the form definition specifies one::

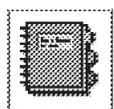
1. Open the attributes notebook for the PSF physical printer.
2. Select the **Summary** attribute group button. A list displays.
3. In the basic InfoPrint administrator's GUI, select **Media**. In the advanced InfoPrint administrator's GUI, select **PSF Configuration**.
4. In the **Default Input Tray** field, enter the name of the input tray.
5. Select the **OK** button.

---

## Specifying Output Bin Information for a PSF Physical Printer

The output bin is a bin on the printer device where printed jobs are delivered. You can use the attributes notebook for a PSF physical printer to map output-bin names, such as `top`, to bin numbers that the printer device uses for output-bin identification. You can also specify which output bin is the default for printed output.

### Mapping Output-Bin Names to Output-Bin Numbers

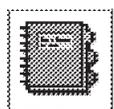


To map output-bin names to corresponding output-bin numbers:

1. Open the attributes notebook for the PSF physical printer.
2. Select the **Summary** attribute group button. A list displays.
3. In the basic InfoPrint administrator's GUI, select **Media**. In the advanced InfoPrint administrator's GUI, select **PSF Configuration**.
4. Use one or more of the buttons next to the **Output Bin Numbers** list box to set up output-bin mapping for the actual destination. After selecting a button, a separate dialog window displays. You can use the **Help** button or the **?** button to view information on using the buttons.
5. After specifying values on the separate dialog window, select the appropriate button to save your values and return to the attributes notebook. InfoPrint updates the values listed in the **Output Bin Numbers** list box.
6. Select the **OK** button.

InfoPrint closes the attributes notebook.

### Specifying the Default Output Bin for a PSF Physical Printer



To specify the default output bin for the printer device:

1. Open the attributes notebook for the PSF physical printer.
2. Select the **Summary** attribute group button. A list displays.
3. In the basic InfoPrint administrator's GUI, select **Media**. In the advanced InfoPrint administrator's GUI, select **PSF Configuration**.
4. Either use the **List** button or type the bin name in the **Default Output Bin** field.
5. Select the **OK** button.

**Note:** If the form definition used with the job or the job itself specifies an output bin, InfoPrint ignores the value you set in the **Default Output Bin** field.

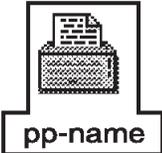
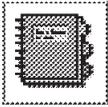
---

## Setting the Actual Destination Attributes for Resource Search Paths

See "Assigning Resource-Context Objects to an Actual Destination" on page 165.

---

## Changing the Queue from Which the Actual Destination Receives Jobs



You can use the advanced InfoPrint administrator's GUI to change the queue from which an actual destination receives jobs. You may want to do this if you have a queue containing many queued jobs and, for some reason, the actual destinations currently associated with that queue are unable to process the jobs. You can associate a different actual destination with the queue so that InfoPrint can process the queued jobs.

**Note:** You cannot use the basic InfoPrint administrator's GUI to do this task because all actual destinations in the same server receive jobs from the same queue.

To change the queue from which an actual destination receives jobs:

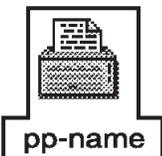
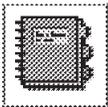
1. Open the attributes notebook for the actual destination.
2. In the **Queue Jobs are Received from** field, type in the name of the queue.
3. Select the **OK** button.

If this actual destination is enabled, it starts processing and printing the queued jobs whose attributes it supports.

**Note:** You can also change the queue by dragging the actual destination icon and dropping it on a queue icon.

---

## Forcing Messages from Actual Destinations When Attributes Require Modification



You can configure a PSF, AIX, or 3170 actual destination so that InfoPrint disables it and notifies you when a job assigned to the actual destination requires a resource that is either not supported or not ready. You may find this useful when you have jobs that must print in sequence and one or more of the jobs require different resources. By default, InfoPrint places a hold on any job that requires a resource that the actual destination does not support or have ready and the job remains in the queue; InfoPrint then processes and prints or transmits the next job in the queue. If you have jobs that must be processed in a specific order, change the actual destination configuration as follows.

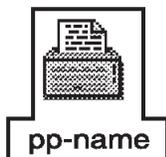
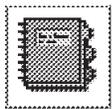
To disable an actual destination and force notification when a job requires resources that are either not ready or not supported:

1. Open the attributes notebook for the actual destination.
2. In the basic InfoPrint administrator's GUI, find the **Disable on Job Setup Mismatch** field on the **Scheduling** tab. In the advanced InfoPrint administrator's GUI, find the the **Force Printer Setup** field on the **Summary** tab.
3. Select **Yes** for forcing the printer setup.
4. Select the **OK** button.

Now InfoPrint disables the actual destination whenever a job assigned to it requires resources that are either not supported or not ready.

---

## Configuring BSD Physical Printers That Do Not Support the -Z Flag



Certain printer devices, for example, the IBM 4317 Network Printer 17, IBM InfoPrint 20 Printer, and IBM InfoPrint 32 Printer, do not support the BSD **-Z** flag. If you configure one of these printer devices as a BSD physical printer and take the default attribute to option mapping, you will receive the following error message when you try to print:

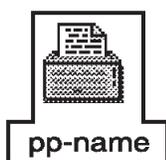
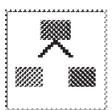
```
0782-597 The value of _Z attribute is not in the ring list
          specified in the limits field
```

To correct this error, delete the mapping for the **-Z** flag:

1. Open the attributes notebook for the actual destination.
2. In the basic InfoPrint administrator's GUI, find the **Attribute to Option Mapping** field on the **General** tab. In the advanced InfoPrint administrator's GUI, find the the **Attribute to Option Mapping** field on the **Capability** tab.
3. Select the value for the **-Z** flag, then select the **Delete** button.
4. Select the **OK** button.

---

## Placing Actual Destinations in Unmanaged Mode



You can place an actual destination in unmanaged mode so that the InfoPrint administrator's GUI does not reflect changes in its status through the icon for the actual destination. Also, when an actual destination is in unmanaged mode, it does not send "problem child" information to its server or to its associated queue.

You may want to put an actual destination in unmanaged mode if it has a problem and:

- You do not want to be notified of the problem repeatedly.
- You are using the advanced InfoPrint administrator's GUI to monitor other objects in the same server. Because a managed actual destination with a problem causes the problem child symbol to overlay the server icon, you would not know if one of the other actual destinations or queues in the server had a problem.

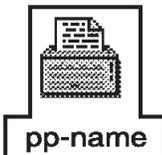
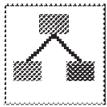
To place an actual destination in unmanaged mode:

1. Open an actual destinations well or a window with an actual destinations pane that contains the actual destination that you want to place in unmanaged mode.
2. Drag the **Unmanage** icon from the Actions area and drop it on the actual destination icon.

InfoPrint places the actual destination in unmanaged mode and adds an unmanaged symbol to its icon. If there is a problem with this actual destination and it is the only problem child of the server that contains it, InfoPrint removes the problem child symbol from the server icon.

---

## Placing Unmanaged Actual Destinations in Managed Mode



To return an actual destination in unmanaged mode to managed mode:

1. Open an actual destinations well or a window with an actual destinations pane that contains the actual destination you want to return to managed mode.
2. Drag the **Manage** icon from the Actions area and drop it on the actual destination icon.

InfoPrint removes the unmanaged symbol from the actual destination icon. Now, the InfoPrint administrator's GUI reflects any status changes to the actual destination. It also sends information to the server containing the actual destination and the queue associated with the actual destination.

---

## Deleting Actual Destinations



If you take an output device out of service permanently, you can delete the actual destination that represents the output device.

To delete an actual destination:

1. Open an actual destinations well or a window with an actual destinations pane that contains the actual destination you want to delete.
2. Drag the icon for the actual destination and drop it on the **Trash Can** icon at the lower right corner of the window.

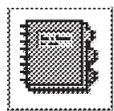
InfoPrint displays a confirmation message.

3. Select the **Yes** button.

InfoPrint deletes the actual destination.

---

## Setting the Notification Profile for an Actual Destination



When you create an actual destination using an InfoPrint-supplied actual destination template, InfoPrint sets the notification profile components to their default values.

You can use the advanced InfoPrint administrator's GUI to see what the default values are or to change the values. To do this:

1. Open an actual destinations well or a window with an actual destinations pane that contains the actual destination whose notification profile you want to review.
2. Drag the **Notebook** icon from the Actions area and drop it on the actual destination icon.

InfoPrint opens the attributes notebook for that actual destination.

3. Select the **Summary** attribute group button. A list displays.
4. Select **Notification**.
5. Select the **Modify...** button to see the default values set when the actual destination was created.

The Notification - Modify dialog window opens. You can use the **Help** button or the **?** button to view information about the fields in this window.

**Note:** The **Help** button provides information concerning the notification profile, its various components, and their purpose.

6. Select the **List** button to the right of the \* **Delivery Method** field to see the various delivery methods available.

**Note:** The default value for delivery method is **message**. When you use a delivery method of **message**, you must have an open AIX window to view the messages.

You can change the method or leave it as presently set:

- To change the method, select a new value; InfoPrint closes the Methods Selection dialog window.
- To keep the present method, select the **Cancel** button.

InfoPrint closes the Methods Selection dialog window.

7. Select the **List** button to the right of the **Events** field to see the various events on which InfoPrint can report. You can change the events or leave them as presently set:

- To change the events, select new values then select the **OK** button.
- To keep the present events, select the **Cancel** button.

InfoPrint closes the Events Selection dialog window.

8. Select the **Modify** button to save any changes you have made and to exit the Notification - Modify window. Select the **Cancel** button to exit the Notification - Modify window without making any changes.

For more information about notification profiles, see Chapter 15, "Setting Notification Profiles" on page 169 and *IBM InfoPrint Manager for AIX: Reference*.



---

## Chapter 9. Creating and Managing Queues

InfoPrint queues receive jobs from logical destinations and manage the jobs until the server schedules them to actual destinations. Use the information in this chapter to create additional queues and perform configuration and maintenance tasks.

---

### Preparing to Work with Queues

You create and manage InfoPrint queues with the advanced InfoPrint administrator's GUI. The basic InfoPrint administrator's GUI does not display queue icons, because it is designed for installations in which queues require little management. In these installations, every server contains one queue created when the server is first configured.

The following topics describe usage tips for displaying queue information.

### Activating the Event Log

While the advanced InfoPrint administrator's GUI provides you with visual indicators of changes in queue status, you may want to record event information in an event log. See "Activating the Event Log" on page 66 for the procedure.

### Searching for Queue Events in the Event Log

To locate the log entry for a particular queue:

1. If the event log is minimized, restore it.
2. Enter a search string in the **Search for** field.
3. Use the **Find Newest** and **Find Next** buttons:

- a. Select the **Find Newest** button.

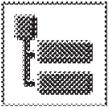
This causes the list to scroll from the top of the list to the first occurrence of the search string. That log entry is highlighted.

- b. Select the **Find Next** button.

This causes the list to scroll to the next occurrence of the search string. That log entry is highlighted.

4. After viewing the information, you can minimize the window. InfoPrint continues to log event information when the event log is open or minimized.

## Displaying Queues in the InfoPrint Administrator's GUI



Expand to Wells



Open Printers Window

All of the procedures described in this section require you to have either a queues well or a queues pane open. There are several ways to open a queues well or pane. Two of the easiest ways are to open a queues well or pane from the Servers window:

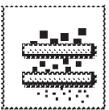
- Either double-click on a server icon or drag the **Expand to Wells** icon from the Display Controls area and drop it on a server icon.

This opens a queues well and a actual destinations well below the server icon in the Work Area of the Servers window.

- Drag the **Open Window** icon from the Actions area and drop it on a server icon.

This opens the Server/Objects window, which contains a queues pane.

## Controlling the Queues Displayed in the Work Area



Filter (Include)

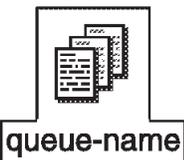
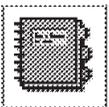
You can set up filter criteria to control which queues display in the Work Area of the advanced InfoPrint administrator's GUI. You may find this useful if you have several queues and you only want to work with a selected group of them.

To filter for specific queues:

1. Open a queues well or a window containing a queues pane.
2. Drag the **Filter (Include)** icon from the Display Controls area and drop it on an open area of the queues well or pane. The Filter Queues window displays.
3. Use the fields on the window to enter your filter criteria. You can use the **Help** button or the **?** button to view information on the fields.
4. Select the **OK** button.

Only queues matching your filter criteria display.

## Displaying the Attributes Notebook for a Queue



You view and change queue attributes through the attributes notebook for the queue. You perform many of the configuration and maintenance tasks in this section using the attributes notebook.

To display a notebook for a queue:

1. Open a queues well or a window containing a queues pane.
2. Drag the **Notebook** icon from the Actions area and drop it on the queue icon.

InfoPrint opens the attributes notebook for the queue.

## Determining Queue Status



Any time you pause a queue, the queue icon turns black. The last page of the queue icon turns red if the queue is backlogged. The problem child symbol overlays the queue icon for other problems. You can use the attributes notebook for the queue for information on its status.

### Paused



To check the status of a queue, the logical destinations that send jobs to it, and the actual destinations that receive jobs from it:

1. Select the **Preferences** button.

The User Preferences window displays.

### Backlogged



2. Select **Yes** for the **Display attributes for advanced users in notebooks** field.

3. Select the **OK** button.

4. Open a queue's well or a window containing a queue's pane that contains the blacked-out icon.

### Problem Child

5. Drag the **Notebook** icon from the Actions area and drop it on the blacked-out queue icon.

The View and Change Queue Properties dialog window appears.

6. Check the **State** field under the **Summary** tab for the queue status and the fields under the **Status** tab to determine which logical destinations and actual destinations are ready.

7. Select the **Preferences** button.

The User Preferences window displays.

8. Select **No** for the **Display attributes for advanced users in notebooks** field.

9. Select the **OK** button.

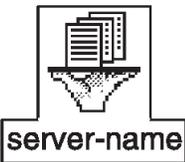
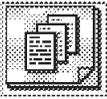
This returns you to the normal notebook setting.

---

## Creating Additional Queues



A queue can receive jobs from one or more logical destinations and can send jobs to one or more actual destinations. You can create queues using the InfoPrint-supplied queue template or a custom template that you have created.



1. From the Servers window, ensure that the server that will contain the new queue displays in the Servers pane of the Work Area. If it does not, use the **Select Servers...** button to select the server.
2. In the Template Area, select the **Queue Template Type** icon to display queue templates.
3. Drag the queue template that you want to use and drop it on the appropriate server icon. An Add Queue dialog window displays.
4. In the \* **Queue Name** field, enter a name for the queue.
5. Select the **OK** button.

InfoPrint creates the new queue using the attribute values from the queue template you used.

---

## Disabling and Enabling All Logical Destinations in a Queue

If you need to make all logical destinations associated with a queue unavailable for the same period of time so that the logical destinations cannot send any more jobs to the queue, you can disable the queue.

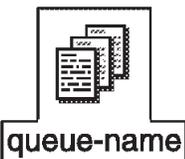
**Note:** If jobs sent to the logical destinations you disable are generated through application programs, problems may occur when InfoPrint rejects the jobs. You may want to coordinate disabling the logical destinations with the owners of the application programs generating jobs.

## Disabling All Logical Destinations That Send Jobs to a Queue



Perform the following steps to disable all logical destinations:

1. Open a queues well or a window containing a queues pane.
2. Drag the **Disable** icon from the Actions area and drop it on the queue icon.



InfoPrint disables all logical destinations that send jobs to that queue. The logical destination icons turn black to show that they are disabled. InfoPrint adds the problem child symbol to the queue and server icons.

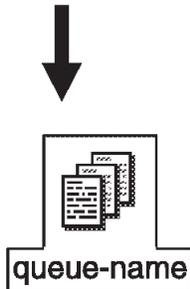
## Enabling All Disabled Logical Destinations That Send Jobs to a Queue



To enable all disabled logical destinations that send jobs to the queue so that they will accept new jobs:

1. Open a queues well or a window containing a queues pane.
2. Drag the **Enable** icon from the Actions area and drop it on the queue icon.

InfoPrint enables all logical destinations and returns their icons to normal appearance. InfoPrint also removes the problem child symbol from the queue and server icons if there are no other problem children affecting these objects.



---

## Cleaning Queues



Cleaning a queue deletes all jobs in the queue. It also, if possible, removes any jobs that are processing or printing on the actual destinations that receive jobs from the queue. You cannot recover jobs once the queue is cleaned. Job submitters must submit the jobs again.

To clean a queue:

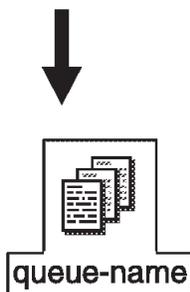
1. Open a queues well or a window with a queues pane that contains the queue that you want to clean.

2. Drag the **Clean** icon from the Actions area and drop it on the queue icon.

InfoPrint displays a confirmation message.

3. Select the **Yes** button.

InfoPrint removes all jobs.



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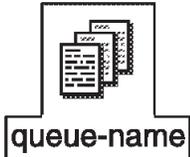
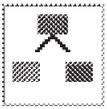
## Placing Queues in Unmanaged and Managed Modes

You can place a queue in unmanaged mode so that changes in the status of the queue are not reflected by the advanced InfoPrint administrator's GUI. You may want to do this when there is a problem child situation.

**Note:** When the queue icon is in unmanaged mode, the icon appearance will not change for any reason.

When the problem is fixed, you can return an unmanaged queue to managed mode so that the InfoPrint administrator's GUI will provide you with visual notification when changes in the state of the queue occur.

## Placing Queues in Unmanaged Mode

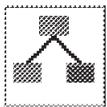


To place queue in unmanaged mode:

1. Open a queues well or a window containing a queues pane.
2. Drag the **Unmanage** icon from the Actions area and drop it on the queue icon.

InfoPrint adds an unmanaged symbol to the queue icon to show that it is in unmanaged mode. If there is a problem with this queue and it is the only problem child of the server that contains it, InfoPrint removes the problem child symbol from the server icon.

## Placing Queues in Managed Mode



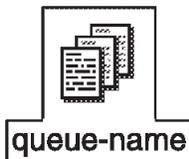
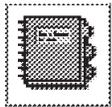
To return an unmanaged queue to managed mode:

1. Open a queues well or a window containing a queues pane.
2. Drag the **Manage** icon from the Actions area and drop it on the unmanaged queue icon.

InfoPrint removes the unmanaged symbol from the queue icon to show that it is in managed mode. If there is a problem with the queue that you just returned to managed mode and it is the only problem child of the server containing it, InfoPrint adds the problem child symbol to the server icon.

---

## Controlling How Queues Handle Failed Jobs



You can control whether jobs that fail to RIP or print, for reasons other than output device problems, remain in the queue or are discarded if a retention value is not set. You do this by setting the **Requeue Jobs that Failed** field of the **General** tab in the queue notebook to **Yes** or **No**.

**Note:** Jobs that fail to process because of output device problems remain in the queue in the **pending** state, regardless of how the queue normally handles failed jobs.

To set the **Requeue jobs that failed** field:

1. Select the **Preferences** button.

The User Preferences window displays.

2. Select **Yes** for the **Display attributes for advanced users in notebooks** field.
3. Select the **OK** button.
4. Open a queues well or a window containing a queues pane.
5. Drag the **Notebook** icon from the Actions area and drop it on the queue icon.

InfoPrint opens the attributes notebook for the queue.

6. Go to the **General** tab.
7. Select the value setting you want:

- **Yes**

Jobs that fail to print for either of these reasons remain in the queue in the **held** state:

- InfoPrint cancels the job
- Raster-image processing (RIPping) of a PostScript job fails

- **No**

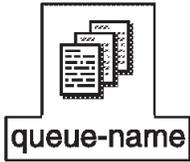
Jobs that fail to print are retained if there is a value for the **job-retain-until** or **job-retention-period** job attribute. Otherwise, these jobs are discarded.

8. Select the **Preferences** button.
9. Select **No** for the **Display attributes for advanced users in notebooks** field.
10. Select the **OK** button.

This returns you to the normal notebook setting.

---

## Deleting Queues



If you no longer need a queue, you can delete it. You may find this useful if you permanently take the output devices that the queue sends jobs to out of service.

To delete a queue:

1. Open a queues well or a window with a queues pane that contains the queue you want to delete.
2. Drag the icon for the queue and drop it on the **Trash Can** icon at the lower right corner of the window.

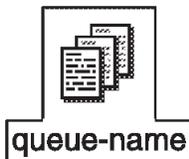
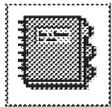
InfoPrint displays a confirmation window.

3. Select the **Yes** button.

InfoPrint deletes the queue.

---

## Setting the Notification Profile for a Queue



When you create a queue using the InfoPrint-supplied queue template, InfoPrint sets the notification profile components to their default values.

To see what the default values are or to change the values:

1. Open a queues well or a window containing a queues pane that contains the queue whose notification profile you want to review.
2. Drag the **Notebook** icon from the Actions area and drop it the queue icon.  
InfoPrint opens the attributes notebook for that queue.

3. Select the **Modify...** button to see the default values set when the queue was created.

The Notification - Modify dialog window opens. You can use the **Help** button or the **?** button to view information about the fields in this window.

**Note:** The **Help** button provides information concerning the notification profile, its various components and their purposes.

4. Select the **List** button to the right of the \* **Delivery Method** field to see the various delivery methods available.

**Note:** The default value for delivery method is **message**. When you use a delivery method of **message**, you must have an open AIX window to view the messages.

You can change the method or leave it as presently set:

- To change the method, select a new value; InfoPrint closes the Methods Selection dialog window.
- To keep the present method, select the **Cancel** button.

InfoPrint closes the Methods Selection dialog window.

- Select the **List** button to the right of the **Events** field to see the various events on which InfoPrint can report. You can change the events or leave them as presently set:

- To change the events, select new values then select the **OK** button.
- To keep the present events, select the **Cancel** button.

InfoPrint closes the Events Selection dialog window.

- Select the **Modify** button to save any changes you have made and exit the Notification - Modify window or select the **Cancel** button to exit the Notification - Modify window without making any changes.

For more information about notification profiles, see Chapter 15, "Setting Notification Profiles" on page 169 and *IBM InfoPrint Manager for AIX: Reference*.



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## Chapter 10. Creating and Managing Logical Destinations

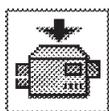
Users and applications submit jobs to an IBM InfoPrint Control (InfoPrint) logical destination. A logical destination is associated with a queue, which can send jobs to one or more actual destinations. Use the information in this section to create and manage logical destinations.

---

### Preparing to Work with Logical Destinations

You create and manage InfoPrint logical destinations through the InfoPrint administrator's GUI. The following topics provide information you need to create new logical destinations and usage tips for displaying logical destination information.

### Displaying Logical Destination Templates

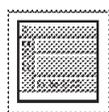


Logical  
Destination  
Template Type

InfoPrint provides a template that you can use to create logical destinations. You can select which types of templates display in the Template Area of the Servers/Objects window. By default, the last type of template selected before the window was closed displays when you open the Server/Objects window. If the logical destination templates are not displayed in the Server/Objects window, select the **Logical Destination Template Type** icon from Types column in the Template Area to display existing logical destination templates.

You can also access the logical destination template from the Queue/Destinations window. The only type of template available from this window is for logical destinations.

### Displaying Logical Destinations in the InfoPrint Administrator's GUI



All the procedures described in this section require that you have either a logical destinations pane or a logical destinations well open.

In the basic InfoPrint administrator's GUI, open the **Print Administration** window from the desktop. This window contains a logical destinations pane.



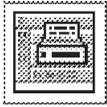
In the advanced InfoPrint administrator's GUI, you can either open a logical destinations well in the Server/Objects window or open the Queue/Destinations window, which contains a logical destinations pane.



To open a logical destinations well in the Server/Objects window:

1. From the main Servers window, ensure that the server that contains or will contain the logical destination is displayed in the Servers pane of the Work Area. If it does not, use the **Select Servers...** button to select the server.
2. Drag the **Open Window** icon from the Actions area and drop it on the server icon. InfoPrint opens the Server/Objects window.
3. Either double-click on the queue icon or drag the **Expand to Destinations** icon from the Display Controls area and drop it on the queue icon that is associated with or will be associated with the logical destination.

A logical destinations well opens below the queue icon.

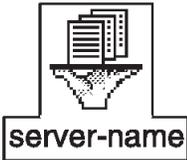


You can access a logical destinations pane from the Queue/Destinations window.

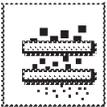
To open the Queue/Destinations window:

1. From the main Servers window, ensure that the server that contains or will contain the logical destination is displayed in the Servers pane of the Work Area. If it does not, use the **Select Servers...** button to select the server.
2. Drag the **Open Destinations Window** icon from the Actions area and drop it on the server icon.

InfoPrint opens the Queue/Destinations window, which contains a logical destinations pane.



## Controlling the Logical Destinations Displayed in the Work Area



Filter (Include)

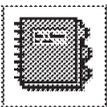
You can set up filter criteria to control which logical destinations display in the Work Area of the InfoPrint administrator's GUI. You may find this useful if you have several logical destinations and you only want to work with a selected group of them.

To filter for specific logical destinations:

1. Open a logical destinations well or a window with the logical destinations pane.
2. Drag the **Filter (Include)** icon from the Display Controls area and drop it on an open area of the logical destinations well. The Filter Logical Destinations dialog window displays.
3. Use the fields on the window to enter your filter criteria. You can use the **Help** button or the **?** button to view information on the fields.
4. Select the **OK** button.

Only logical destinations matching your filter criteria display.

## Displaying the Attributes Notebook for a Logical Destination



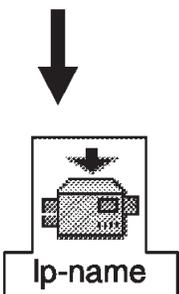
You view logical destination attributes through the attributes notebook for the logical destination.

To display a notebook for a logical destination:

1. Open a logical destinations well or a window with the logical destinations pane.
2. Drag the **Notebook** icon from the Actions area and drop it on the logical destination icon.

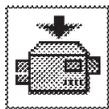
InfoPrint opens the attributes notebook for the logical destination.

**Note:** If you wish to change the attributes, you must first disable the logical destination. When you have made the changes, you must reenable the logical destination so that it can accept jobs. See "Disabling and Enabling Logical Destinations" on page 127.

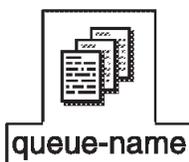
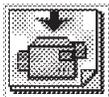


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## Creating Additional Logical Destinations



In the basic InfoPrint administrator's GUI, you automatically create a logical destination whenever you create an actual destination. You can also create logical destinations using an InfoPrint-supplied template in either the basic or the advanced InfoPrint administrator's GUI.



1. If you are using the advanced InfoPrint administrator's GUI, ensure that the Queues pane in the Work Area contains an icon for the queue that will receive jobs from the new logical destination.
2. Select the **Logical Destination Template Type** icon from the Types column in the Template Area to display logical destination templates.
3. Drag a logical destination template from the Template Area.
  - In the basic InfoPrint administrator's GUI, drop the template in the Logical Destinations pane. You will be prompted to select the server that will contain the logical destination. The logical destination is automatically associated with the single queue in that server.
  - In the advanced InfoPrint administrator's GUI, drop the template on the appropriate queue icon.

The Add Logical Destination dialog window displays.

4. Fill in the name for the new logical destination.
5. Select the **OK** button.

InfoPrint creates a new logical destination using the name you supplied and the attribute values specified by the logical destination template.

**Note:** The new logical destination is not enabled at this point. To use the logical destination, you must enable it.

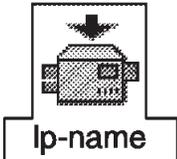
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## Disabling and Enabling Logical Destinations

If you need to make a logical destination unavailable so that it does not accept new jobs, you can disable that logical destination.

**Note:** If jobs sent to the logical destination you disable are generated through application programs, problems may occur when InfoPrint rejects the jobs. You may want to coordinate disabling the logical destination with the owners of the application programs generating jobs sent to the logical destination.

## Disabling a Logical Destination



To disable a logical destination:

1. Open a logical destinations well or a window with the logical destinations pane that contains the logical destination you want to disable.
2. Drag the **Disable** icon from the Actions area and drop it on the logical destination icon.

InfoPrint disables the logical destination. The logical destination icon turns black to show that it is disabled.

## Enabling a Disabled Logical Destination



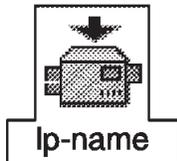
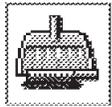
To enable a disabled logical destination so that it will accept new jobs:

1. Open a logical destinations well or a window with the logical destinations pane that contains the blacked-out icon of the logical destination you want to enable.
2. Drag the **Enable** icon from the actions area and drop it on the blacked-out logical destination icon.

InfoPrint enables the logical destination and returns its icon to normal appearance.

---

## Cleaning Logical Destinations



You can clean a logical destination to remove all jobs contained in its associated queue that were submitted through the selected logical destination. If possible, InfoPrint also removes any jobs that were submitted by the selected logical destination that are processing or printing on the actual logical destinations that receive jobs from the queue. You cannot recover jobs once the logical destination is cleaned. Job submitters must submit the jobs again.

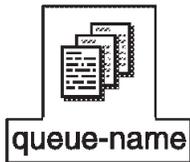
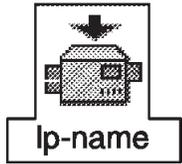
To clean a logical destination:

1. Open a logical destinations well or a window with the logical destinations pane that contains the logical destination you want to clean.
2. Drag the **Clean** icon from the Actions area and drop it on the logical destination icon. InfoPrint displays a confirmation message.
3. Select the **Yes** button.

InfoPrint removes all jobs submitted through the logical destination.

---

## Changing the Queue to Which a Logical Destination Sends Jobs



You can use the advanced InfoPrint administrator's GUI to change the queue to which a logical destination sends jobs. You may want to do this if an actual destination that receives jobs from the queue is disabled or if new jobs submitted to this logical destination require attribute values supported by an actual destination that receives jobs from a different queue.

**Note:** You cannot use the basic InfoPrint administrator's GUI to do this task because all logical destinations in the same server send jobs to the same queue. You can route jobs to different actual destinations in either of these ways:

- Change the **Actual Destinations Requested** field on the **Scheduling** tab of the attributes notebook for the default job associated with the logical destination (see “Changing the Actual Destinations Requested by a Default Job Object” on page 142).
- Replace the default job associated with the logical destination with a default job that requests the desired actual destinations (see “Associating a Default Job or Document Object with a Logical Destination” on page 140).

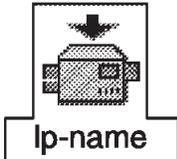
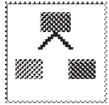
To change the queue associated with a logical destination:

1. Open a logical destinations well or a window with the logical destinations pane that contains the logical destination whose queue association you want to change.
2. Perform one of the following:
  - If you are working from a logical destinations well, drag the logical destination icon and drop it on the queue icon of the queue with which you now want the logical destination associated.
  - If you are working from a logical destinations pane:
    - a. Open the attributes notebook for the logical destinations.
    - b. In the **Queue Jobs are Sent to** field, enter the name of the new queue. You can also use the **List** button next to the field and select a queue from the list.
    - c. Select the **OK** button.

The logical destination now sends jobs to the queue you specified.

---

## Placing Logical Destinations in Unmanaged Mode



You can place a logical destination in unmanaged mode so that the InfoPrint administrator's GUI does not reflect changes in its status through the icon for the logical destination. Also, when a logical destination is in unmanaged mode, it does not send "problem child" information to its associated queue or to the server. Should you disable that logical destination, its icon does not turn black.

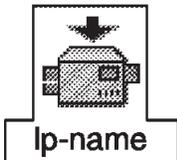
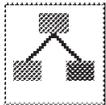
To place a logical destination in unmanaged mode:

1. Open a logical destinations well or a window with a logical destinations pane that contains the logical destination that you want to place in unmanaged mode.
2. Drag the **Unmanage** icon from the Actions area and drop it on the logical destination icon.

InfoPrint places the logical destination in unmanaged mode and adds an unmanaged symbol to its icon. If this logical destination has a problem and it is the only problem child of the server containing it and the queue associated with it, InfoPrint removes the problem child symbols from the server and queue icons.

---

## Placing Unmanaged Logical Destinations in Managed Mode



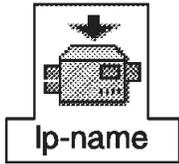
To return a logical destination in unmanaged mode to managed mode:

1. Open a logical destinations well or a window with a logical destinations pane that contains the logical destination you want to return to managed mode.
2. Drag the **Manage** icon from the Actions area and drop it on the logical destination icon.

InfoPrint removes the unmanaged symbol from the logical destination icon. Now, the InfoPrint administrator's GUI reflects any status changes to the logical destination. It also sends information to the server containing the logical destination and the queue associated with the logical destination.

---

## Deleting a Logical Destination



Maybe you have a logical destination that you do not want to support any more. To get rid of a logical destination, place it in the trash. To delete a logical destination:

1. Ensure that you have a logical destinations well or pane open that contains the logical destination you want to delete.
2. Drag the logical destination icon that you want to delete and drop it on the **Trash** icon.

InfoPrint displays a confirmation message.

3. Select the **Yes** button.

InfoPrint removes the logical destination.

---

## Associating Default Objects with Logical Destinations

You associate a default job or default document object with a logical destination to automatically apply the attributes and values specified by the default object to every job submitted to the logical destination. You can associate either or both types of default objects with a single logical destination. See “Associating a Default Job or Document Object with a Logical Destination” on page 140 for the procedure.

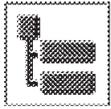
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## Orphan Logical Destinations

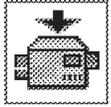
An orphan logical destination is a logical destination that is not associated with a existing queue. Orphan logical destinations reside in the Orphan Logical Destinations folder in the Server/Objects window of the advanced InfoPrint administrator's GUI. Orphan logical destinations cause InfoPrint to add a problem child symbol to the icon of the server in which they reside.

**Note:** There are no orphan logical destinations in the basic InfoPrint administrator's GUI because all logical destinations in a server are automatically associated with the same queue.

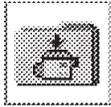
## Determining Logical Destinations with No Queue Assigned



To determine if there are any orphan logical destinations or which logical destinations are identified as orphans:

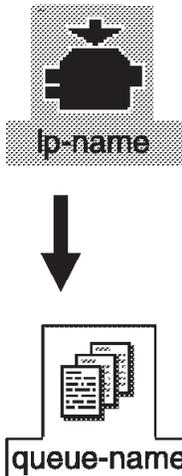


1. Open the Server/Objects window. See “Displaying Logical Destinations in the InfoPrint Administrator’s GUI” on page 125 if you do not know how to open the window.
2. Drag either the **Expand to Wells** or the **Expand to Destinations** from the Display Controls area and drop it on the Orphan Logical Destinations folder icon in the Other Objects pane. You can also double-click on the folder icon.



InfoPrint opens the Orphan Logical Destinations well below the folder icon. If there are any orphan logical destinations, their icons display within the well. If any of the orphan logical destinations were left in unmanaged mode, their icons are shown with the unmanaged symbol. All orphan logical destinations that are in managed mode have their icons shown in black.

## Associating an Orphan Logical Destination with a Queue



You can change an orphan logical destination into a logical destination associated with a queue:

1. Ensure that the Orphan Logical Destination folder icon in the Other Objects pane is visible.
2. Expand the Orphan Logical Destination folder so the orphan logical destinations well is displayed.
3. Drag the orphan logical destination and drop it on the queue icon that you want the logical destination to be associated with.

InfoPrint moves the logical destination and leaves it in the same mode, managed or unmanaged, that it was as an orphan and in the disabled state. You must change the mode if you want and you must enable it.

---

## Configuring a Logical Destination for Workstation Clients

In order for OS/2 or Windows workstation clients to submit jobs to a logical destination, you must configure the logical destination to support the workstation print drivers. First you must determine the names of the workstation print drivers, then specify that the logical destination can accept jobs from those drivers.

### Determining Driver Names

On the workstation where InfoPrint Submit or InfoPrint Select is installed, follow one of the procedures in this section to determine the names of the available print drivers.

## Windows 95 and Windows NT Printer Drivers

To determine the names of available print drivers on Windows 95 or Windows NT, follow these steps:

- Select the **My Computer** icon.
- Select the **Control Panel** icon.
- Select the **Printers** icon.
- Select **Add Printer** to display a list of printer drivers.
- If you will submit jobs from this workstation to PSF physical printers, select a generic driver, such as a PostScript driver, instead of one for a specific printer model.
- Record the driver name exactly as it appears in the list.

## Windows 3.1.1 and WIN-OS/2 Printer Drivers

To determine the names of available print drivers on Windows 3.1.1 or WIN-OS/2, follow these steps:

- For WIN-OS/2, start a WIN-OS/2 full-screen session to access the Windows **Program Manager**.
- Select the **Control Panel** icon.
- Select the **Printers** icon.
- Select **Add >>** to display a list of printer drivers.
- If you will submit jobs from this workstation to PSF physical printers, select a generic driver, such as a PostScript driver, instead of one for a specific printer model.
- Record the driver name exactly as it appears in the list.

## OS/2 Print Drivers

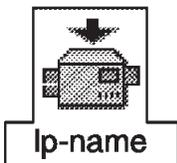
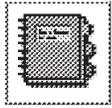
To determine the names of available print drivers on OS/2, follow these steps:

- Open the **Templates** folder.
- Drag the **Printer** icon to your desktop. The Create a Printer window is displayed.
- Select **Install new destination driver...** to display a list of available drivers.
- If the driver you want is not listed, select **Other OS/2 destination driver** and load the diskette containing the driver. OS/2 refreshes the list with the drivers from the diskette.
- Record the driver name in this format: the driver file name, without the **DRV** extension, but with the period, followed by the descriptive name of the driver. For example, if the file name is LASERJET.DRV and the descriptive name is IBM 4019 Laser Printer E, record the driver name as LASERJET.IBM 4019 Laser Printer E.

## Specifying Driver Names

After you have determined the names of the workstation print drivers, you must configure the logical destination to accept jobs from those drivers. You can use the advanced InfoPrint administrator's GUI or the AIX command line.

### Using the Advanced InfoPrint Administrator's GUI



You can use the advanced InfoPrint administrator's GUI to specify the device drivers that can submit jobs to a logical destination. To do this:

1. Open a logical destinations well or a window with a logical destinations pane.
2. Drag the **Notebook** icon from the Actions area and drop it on the logical destination icon.

InfoPrint opens the attributes notebook for that logical destination.

3. Select the **Summary** attribute group button. A list displays.
4. Select the **Type** tab.
5. Use the buttons to the right of the appropriate field to add the driver name that you recorded to the list:

- For Windows 95 or Windows NT, add the driver name to the list in the **Windows NT Drivers** field.
- For Windows 3.1.1 or WIN-OS/2, add the driver name to the list in the **Windows Drivers** field.
- For Windows 3.1.1 or WIN-OS/2, add the driver name to the list in the **OS/2 Drivers** field.
- Select **OK**.

### Using the AIX Command Line

Use the **pdset** command and the appropriate logical destination attribute to specify the device drivers that can submit jobs to a logical destination.

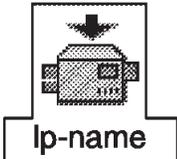
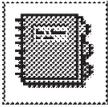
- For Windows 95 or Windows NT, use the **windows-nt-drivers** attribute.
- For Windows 3.1.1 or WIN-OS/2, use the **windows-drivers** attribute.
- For OS/2, use the **os2-drivers** attribute.

For example, to configure the logical destination **morris** to accept jobs from the OS/2 printer driver **LASERJET.IBM 4019 Laser Printer E**, enter the following command:

```
pdset -c destination -x "os2-driver-names+='LASERJET.IBM
4019 Laser Printer E'" morris
```

---

## Setting the Notification Profile for a Logical Destination



When you create a logical destination using an InfoPrint-supplied logical destination template, InfoPrint sets the notification profile components to their default values.

You can use the advanced InfoPrint administrator's GUI to see what the default values are or to change the values. To do this:

1. Open a logical destinations well or a window with a logical destinations pane that contains the logical destination whose notification profile you want to review.
2. Drag the **Notebook** icon from the Actions area and drop it on the logical destination icon.

InfoPrint opens the attributes notebook for that logical destination.

3. Select the **Summary** attribute group button. A list displays.
4. Select **Notification**.
5. Select the **Modify...** button to see the default values set when the logical destination was created.

The Notification - Modify dialog window opens. You can use the **Help** button or the **?** button to view information about the fields in this window.

**Note:** The **Help** button provides information concerning the notification profile, its various components, and their purpose.

6. Select the **List** button to the right of the \* **Delivery Method** field to see the various delivery methods available.

**Note:** The default value for delivery method is **message**. When you use a delivery method of **message**, you must have an open AIX window to view the messages.

You can change the method or leave it as presently set:

- To change the method, select a new value; InfoPrint closes the Methods Selection dialog window.
- To keep the present method, select the **Cancel** button.

InfoPrint closes the Methods Selection dialog window.

7. Select the **List** button to the right of the **Events** field to see the various events on which InfoPrint can report. You can change the events or leave them as presently set:

- To change the events, select new values then select the **OK** button.
- To keep the present events, select the **Cancel** button.

InfoPrint closes the Events Selection dialog window.

8. Select the **Modify** button to save any changes you have made and to exit the Notification - Modify window. Select the **Cancel** button to exit the Notification - Modify window without making any changes.

For more information about notification profiles, see Chapter 15, "Setting Notification Profiles" on page 169 and *IBM InfoPrint Manager for AIX: Reference*.

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## Chapter 11. Creating and Managing Default Job and Document Objects

Default job and document objects are collections of attributes and values that you can apply to jobs. By creating and associating these objects with logical destinations, you can streamline job submission. Job submitters do not have to explicitly include attributes and values with the job-submission requests, InfoPrint automatically applies the attributes and values associated with the logical destination through its default job and document objects.

**Note:** If both the default object and the job specify the same attribute, InfoPrint uses the attribute value supplied by the job.

---

### Preparing to Work with Default Jobs and Default Documents

You create and manage default job and document objects through the InfoPrint administrator's GUI. The following topics describe information you need to obtain before creating default job and default document objects, and usage tips for displaying information about them.

#### Defining Job and Document Characteristics

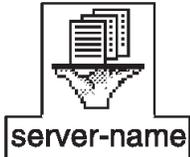
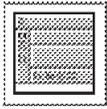
Job characteristics define information about the job, regardless of whether the job contains a single document or many documents. For example, if a job requires a retention period to prevent InfoPrint from discarding it until a specified time, the retention period applies to the entire job. Some document characteristics apply to all documents within a multi-document job, such as the orientation in which documents print, while other document characteristics can vary between documents. For example, a job may consist of two or more documents, and the documents may have different formats, such as ASCII and PostScript formats.

When you create default objects, you should create them for a class of jobs that have the same characteristics and requirements. You may want to get information from job submitters about their job and document requirements. Then, look at the available job attributes and document attributes that you can specify in default objects.

To read about job and document attributes, enter the following commands at an AIX command prompt to view the associated man pages:

```
man pd_att_job  
man pd_att_document
```

## Opening the GUI Application Window Containing Default Objects



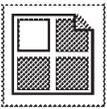
All of the procedures described in this section require you to have a default job or default document well open in the InfoPrint administrator's GUI. To open these wells:

1. Open a window that shows default objects.
  - In the basic InfoPrint administrator's GUI, open the Print Administration window from the desktop.
  - In the advanced InfoPrint administrator's GUI, open the the Servers window from the desktop. Then drag the **Open Window** icon from the Actions area and drop it on a server icon to open the Server/Objects window.
2. In the Other Objects pane, scroll through or enlarge the pane until the **Default Jobs** and **Default Document** folder icons are visible.
3. Double-click on each of the folder icons. A well opens for each type of default object.

## Displaying Default Object Templates Supplied with InfoPrint



Default Job  
Template Type



Default  
Document  
Template Type

InfoPrint provides a template for a default job object and a template for a default document object that you can use to create default objects.

To access the templates provided with InfoPrint:

1. Ensure that the Print Administration window of the basic InfoPrint administrator's GUI, or the Server/Objects window of the advanced InfoPrint administrator's GUI, is open.
2. To display the template for a default job object, select the **Default Job Template Type** icon from the Types section of the Template Area.
3. To display the template for a default document object, select the **Default Document Template Type** icon from the Types section of the Template Area.

## Creating Your Own Default Object Templates

If you need to create several default job or default document objects, you may want to create customized templates that include specific values to streamline the process.

To create your own templates:

1. Ensure that the Print Administration window of the basic InfoPrint administrator's GUI, or the Server/Objects window of the advanced InfoPrint administrator's GUI, is open.
2. Select the appropriate icon in the Types section of the Template Area for the type of default object template you want to create. This displays existing templates.
3. Drag one of the existing templates and drop it on an open area of the Template Area. A Create Default Template dialog window for the selected type of default object displays.

4. Enter the values that you need for your custom template. Select the **Help** button to display help for the dialog.

**Note:** You can also use the ? button to view help information in each field.

5. Select the **OK** button.

InfoPrint adds the template you created to the default object templates displayed in the Template Area.

---

## Creating Default Objects

To create a default document or default job object:

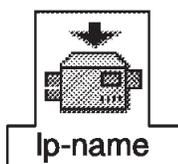
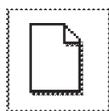
1. Ensure that the Print Administration window of the basic InfoPrint administrator's GUI, or the Server/Objects window of the advanced InfoPrint administrator's GUI, is open.
2. Select the appropriate icon in the Types section of the Template Area for the type of default object template you want to create.
3. Drag and drop a template onto a Default Documents folder or Default Jobs folder, or into a Default Documents well or Default Jobs well.
4. In the basic InfoPrint administrator's GUI, a dialog window displays requesting you to select the server where you want to create the default object.
5. A Create Default Document or Create Default Job dialog window displays.
6. Enter the values that you need for your default object. Select the **Help** button to display help for the dialog.

**Note:** You can also use the ? button to view help information in each field.

7. Select the **OK** button.

---

## Associating a Default Job or Document Object with a Logical Destination



You associate a default job or default document object with a logical destination to automatically apply the attributes and values specified by the default object to every job submitted to the logical destination. You can associate either or both types of default objects with a single logical destination.

**Note:** The icons shown in the margin of this procedure are for associating a default job object with a logical destination.

To associate a default object with a logical destination:

1. Ensure that the Print Administration window of the basic InfoPrint administrator's GUI, or the Server/Objects window of the advanced InfoPrint administrator's GUI, is open.
2. Display the icon for the logical destination.
  - In the Print Administration window, scroll through or enlarge the logical destinations pane until the icon for the logical destination is visible.
  - In the Queues pane of the Server/Objects window, open a logical destinations well for the queue associated with the logical destination.
3. Open the appropriate default object folder in the Other Objects pane of the Work Area.
4. Drag the appropriate default object icon and drop it on the logical destination icon.

InfoPrint will apply the attributes and values of the default object to each job submitted to the logical destination.

**Note:** If you no longer need to associate a particular default object with a logical destination, open the attributes notebook for the logical destination. In the advanced InfoPrint administrator's GUI, go to the **General** tab. (The logical destination attributes notebook in the basic InfoPrint administrator's GUI has no tabs.) Delete the entry in either the **Default Job** field or **Default Document** field, or delete the entries in both fields. Select the **OK** button to apply the change and close the window.

---

## Adjusting Print Quality in a Default Document Object

If you are not satisfied with the print quality of jobs containing halftone images, you can adjust the default print quality of all jobs submitted to a logical destination by using the basic InfoPrint administrator's GUI to configure the default document associated with the logical destination. (The advanced InfoPrint administrator's GUI does not display the required attributes.)

1. If the logical destination does not have an associated default document, create one for it. See "Creating Default Objects" on page 139.
2. Drag and drop the **Notebook** action onto the default document to open the attributes notebook.
3. On the **Processing** tab, modify the value of the following attributes:

**Printer resolution requested**

If the actual destination supports more than one resolution, or if another actual destination is available, try a different printer resolution. You may have to modify the **Resolutions Ready** attribute on the **Scheduling** tab of the attributes notebook for the actual destination.

**Screen frequency**

If you see moire or two-dimensional repeating patterns in halftone output, try a different screen frequency. If you see light and dark bands, possibly with a herringbone pattern under magnification, set the screen frequency to 106 lines per inch.

**RIP for**

Select a value for this attribute that matches the physical printer where jobs will actually be printed, unless you are proofing the jobs. In that case, be aware that a proof job will not look as good as the final copy.

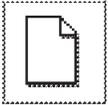
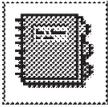
**Output appearance**

Select **standard**, **highlight-midtones**, **dark**, or the name of a customized PostScript transfer function. If you migrated from a previous version of InfoPrint, a customized transfer function can preserve your old settings.

4. If you created a new default document, drag and drop it onto the logical destination.

---

## Changing the Actual Destinations Requested by a Default Job Object



When more than one actual destination receives jobs from a queue, jobs submitted to the logical destinations that send jobs to that queue may be assigned to any actual destination that supports the job's attributes. You can route jobs to specific actual destinations by modifying the default job associated with the logical destination.

When you use the basic InfoPrint administrator's GUI to create an actual destination, you automatically create:

- A logical destination. Because the basic InfoPrint administrator's GUI sets up all the logical destinations in a server to send jobs to the same queue, and all actual destinations to receive jobs from the same queue, this logical destination has the capability to route jobs to any actual destination in the server.
- A default job associated with the logical destination. When this default job is created, it is configured to route jobs to the actual destination created at the same time.

You may want to route jobs to another actual destination if for some reason the output device cannot accept jobs.

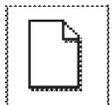
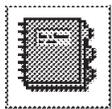
**Note:** If the queue is configured for early binding, as is always the case in the basic InfoPrint administrator's GUI, this change affects only new jobs. All jobs already in the queue have been assigned to an actual destination, unless no actual destination supports them. Jobs assigned to an actual destination that represents an unavailable output device will not be printed or transmitted unless you reassign them to another actual destination.

To change the actual destinations where a default job routes jobs::

1. Ensure that the **Print Administration** window of the basic InfoPrint administrator's GUI, or the **Server/Objects** window of the advanced InfoPrint administrator's GUI, is open.
2. In the **Other Objects** pane, scroll through or enlarge the pane until the **Default Jobs** folder icon is visible.
3. Double-click on the **Default Jobs** folder icon. A well opens for default jobs.
4. Drag the **Notebook** icon from the **Actions** area and drop it on the default job icon. InfoPrint opens the attributes notebook for that default job object.
5. Select the **Summary** attribute group button. A list displays.
6. Select **Scheduling** in the basic InfoPrint administrator's GUI, or **Routing** in the advanced InfoPrint administrator's GUI.
7. Use the buttons to the right of the **\*Actual Destinations Requested** field to add or delete actual destinations.
8. Select the **OK** button.

---

## Setting the Notification Profile for a Default Job Object



When you create a default job object using the InfoPrint-supplied template, InfoPrint does not set any values for the notification profile components.

To set values:

1. Ensure that the Server/Objects window of the advanced InfoPrint administrator's GUI is open. (You cannot do this task in the basic InfoPrint administrator's GUI.)
2. In the Other Objects pane, scroll through or enlarge the pane until the **Default Jobs** folder icon is visible.
3. Double-click on the **Default Jobs** folder icon. A well opens for default jobs.
4. Drag the **Notebook** icon from the Actions area and drop it on the default job icon whose notification profile you want to set up.

InfoPrint opens the attributes notebook for that default job object.

5. Select the **Summary** attribute group button. A list displays.
6. Select **Notification**.
7. Select the **Add...** button.

The Notification - Add dialog window opens. You can use the **Help** button or the **?** button to view information about the fields in this window.

**Note:** The **Help** button provides information concerning the notification profile, its various components, and their purposes.

8. Select the **List** button to the right of the \* **Delivery Method** field to see the various delivery methods available.
9. Select a method.  
InfoPrint closes the Methods Selection dialog window.
10. Select the \* **Delivery Address** field and enter the address where InfoPrint is to deliver notification.
11. Select the **List** button to the right of the **Events** field to see the various events on which InfoPrint can report.
12. Select those events for which you want notification.
13. Select the **OK** button.
14. Select the **Add** button.

InfoPrint applies the notification profile to the default job object and closes the Notification - Add dialog window.

For more information about notification profiles, see Chapter 15, "Setting Notification Profiles" on page 169 and *IBM InfoPrint Manager for AIX: Reference*.



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## Chapter 12. Configuring Media

This section describes how to create, configure, and manage media. Because the basic InfoPrint administrator's GUI displays medium icons and the advanced InfoPrint administrator's GUI does not, some of these tasks cannot be done in the advanced InfoPrint administrator's GUI. If you have the advanced InfoPrint administrator's GUI, you must use the AIX command line instead. Other tasks can be done in the advanced InfoPrint administrator's GUI using a different method from the basic InfoPrint administrator's GUI.

---

### Determining the Media That Are in the Servers

You can use the basic InfoPrint administrator's GUI to show the media in the servers monitored by the `Print Administration` window. Because the advanced InfoPrint administrator's GUI does not display medium icons, if you have the advanced InfoPrint administrator's GUI, you must use the AIX command line.

### Using the Basic InfoPrint Administrator's GUI

Open the `Print Administration` window to see the media in the servers. They are in the `Media` folder in the `Other Objects` pane. Double-click on the `Media` folder to open a well that contains all of the available media.

### Using the AIX Command Line

To display all the media in specified servers, use the `pdls` command. For example, to display the media in **Server1**, enter:

```
pdls -c medium Server1:
```

InfoPrint returns information similar to the following:

```
A4:          medium-identifier=A4
A4:          associated-server=Server1
A4           medium-type=

letter:      medium-identifier=letter
letter:      associated-server=Server1
letter:      medium-type=

legal:       medium-identifier=letter
legal:       associated-server=Server1
legal:       medium-type=

A4-colored:  medium-identifier=A4-colored
A4-colored:  associated-server=Server1
A4-colored:  medium-type=stationery
```

For more information, refer to *IBM InfoPrint Manager for AIX: Reference* or the `pdls` man page.

---

## Creating a Medium

You can use the basic InfoPrint administrator's GUI to create a medium object. Because the advanced InfoPrint administrator's GUI does not display medium icons, if you have the advanced InfoPrint administrator's GUI, you must use the AIX command line.

### Using the Basic InfoPrint Administrator's GUI

Drag and drop a medium template onto the **Media Folder** icon. A dialog window displays requesting you to select the server where you want to create the medium; then another dialog window requesting you to enter the identifier and dimensions for the medium. Be sure to enter the dimensions accurately so that printed output will be aligned correctly on both sides of the medium. The new medium displays in the Media well.

**Note:** To specify whether medium dimensions are displayed in inches or millimeters, click the Preferences button to open the User Preferences dialog.

### Using the AIX Command Line

To create a medium, use the **pdcreate** command and the medium attributes. Specify:

- The name of the server where you want to create the medium
- The medium identifier
- The size of the medium, using one of these attributes:
  - **medium-dimensions** specifies the width and length of the medium in millimeters. Be sure to enter the dimensions accurately so that printed output will be aligned correctly on both sides of the medium. You must use this attribute if AIX physical printers are to use the medium.
  - **medium-size** specifies a predefined size by name.

For example, to create a letter-size (8.5 by 11 inches) medium called na-letter-colored in Server1, enter the following command:

```
pdcreate -c medium -x "medium-size=letter" Server1:na-letter-colored
```

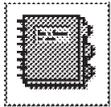
For more information, refer to *IBM InfoPrint Manager for AIX: Reference* or the **pdcreate** and **pd\_att\_medium** man pages.

---

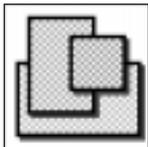
## Viewing or Changing Attributes of a Medium

You can use the basic InfoPrint administrator's GUI to view or change attributes of a medium. Because the advanced InfoPrint administrator's GUI does not display medium icons, if you have the advanced InfoPrint administrator's GUI, you must use the AIX command line.

### Using the Basic InfoPrint Administrator's GUI



Drag and drop the **Notebook** action onto the medium object to view or change the values of the medium attributes.



### Using the AIX Command Line

To view the attributes of a medium, use the **pdls** command. For example, to view all the attributes of na-letter-colored in Server1, enter the following command:

```
pdls -c medium -r all Server1:na-letter-colored
```

To change the attributes of a medium, use the **pdset** command. For example, to change the description of na-letter-colored in Server1, enter the following command:

```
pdset -c medium -x "descriptor='Any color but white'"  
Server1:na-letter-colored
```

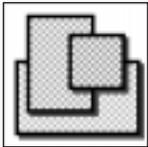
For more information, refer to *IBM InfoPrint Manager for AIX: Reference* or the **pdls**, **pdset**, and **pd\_att\_medium** man pages.

---

## Associating a Medium with a Physical Printer

You can use either the basic or the advanced InfoPrint administrator's GUI to associate a medium with a physical printer. Because the advanced InfoPrint administrator's GUI does not display medium icons, the method is different from the basic InfoPrint administrator's GUI.

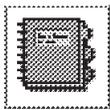
### Using the Basic InfoPrint Administrator's GUI



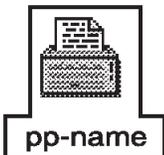
Drag and drop a **Medium** icon onto a physical printer icon to add it to the list of media that the physical printer supports.



### Using the Advanced InfoPrint Administrator's GUI



Depending on the input trays and paper feed mechanisms, a printer device may be capable of having a wide variety of paper sources loaded. You can use the attributes notebook for a physical printer to define the different paper types that operators can load in the printer.



To specify the media supported by the physical printer:

1. Open the attributes notebook for the physical printer.
2. Select the **Summary** attribute group button. A list displays.
3. Select **Forms**.
4. Use one or more of the buttons next to the **Media supported** list box to set up the media supported by the physical printer. You can use the **Help** button or the **?** button to view information on using the buttons.
5. Select the **OK** button. InfoPrint updates the physical printer attribute to the values you specified.

---

## Chapter 13. Creating and Managing Auxiliary Sheets and User Exit Programs

Besides logical destinations, queues, and actual destinations, the InfoPrintserver also controls auxiliary-sheet objects. This section contains information and procedures for creating and configuring these objects.

---

### Preparing to Work with Auxiliary Sheets

The following topics describe auxiliary-sheet terms, default auxiliary sheets, and user-exit programs supplied by InfoPrint, and provides examples of printed auxiliary sheets.

### Terms Relating to Auxiliary Sheets

To understand auxiliary sheets and how InfoPrint generates the information that appears on them, you need to understand the following terms:

#### Auxiliary sheet

Represents a particular sheet of paper, blank or otherwise, that can precede a job, separate documents within a job, or follow the job. PSF, AIX, and 3170 physical printers print auxiliary sheets.

#### Auxiliary-sheet object

Represents a set of user-exit programs that you can specify for InfoPrintPSF, fax, and email actual destinations. User-exit programs process information that can be printed on an auxiliary sheet or recorded in an accounting or audit log. Both the actual destination and the auxiliary-sheet objects must reside in the same InfoPrint server.

**Note:** AIX and 3170 physical printers print auxiliary sheets, but they do not support auxiliary-sheet objects. Fax and email destinations support the input-data and output-data auxiliary-sheet objects, but they do not transmit auxiliary sheets.

Two auxiliary-sheet styles supplied with InfoPrint generate a file that you can use with an executable reporting utility to view job statistics. See Chapter 22, "Viewing Accounting and Auditing Data about the Job (PSF, Fax, and Email DSS Only)" on page 237 for more information on viewing statistics.

#### Auxiliary-sheet object name

Identifies the auxiliary sheet. The names of some of the default auxiliary sheets indicate the style of the auxiliary sheet: **brief**, **full**, or **blank**.

#### User exit

A point during InfoPrint processing that allows you to run a user-exit program and return control of processing to InfoPrint after the user-exit program ends. InfoPrint provides data at each exit point that can serve as input to the user-exit program. InfoPrint can use the output from the user-exit program for InfoPrintprocessing; for example, a user-exit program can pass instructions about how to format a start sheet to InfoPrint. InfoPrint provides user exits for the following InfoPrintauxiliary-sheet objects:

- Start sheet
- End sheet
- Separator sheet

- Accounting log
- Accounting sheet
- Audit log
- Audit sheet
- Input data stream
- Output data stream

**Note:** Fax and email destinations support only the input data stream and output data stream user exits.

See “Sequence of User-Exit Programs” on page 155 for more information about user exits and user-exit programs.

### User-exit program

Defines the data that prints and creates the format of the auxiliary sheet style. InfoPrint extends its function by providing user-exit programs that you can use to format start, end, or separator sheets for the job, track accounting and auditing information, or extract information about the incoming and outgoing job data streams.

### Form definition

Defines the characteristics of the form or printed media, which includes: overlays used, the paper source (for cut-sheet printers), duplex printing, text suppression, fonts, and the position of composed-text data on the form.

See *IBM InfoPrint Manager for AIX: Reference* for more information about form and page definitions.

### Edge marks

Marks that print at the edges of auxiliary sheets and help to identify job boundaries in printed output.

## InfoPrint Default Auxiliary-Sheet Objects

InfoPrint provides six default auxiliary-sheet objects, which it creates when you first create a server. InfoPrint automatically identifies these as supported values for PSF actual destinations. The default auxiliary-sheet objects and their associated user-exit programs and form definitions are:

<b>none</b>	InfoPrint generates no auxiliary-sheet information.
<b>brief</b>	InfoPrint generates a brief style of auxiliary-sheet information, using form definition <b>F1A10110</b> and the following user-exit programs: <ul style="list-style-type: none"> <li><b>ainuxhdr</b> Start sheet</li> <li><b>ainuxsep</b> Separator sheet</li> <li><b>ainuxtlr</b> End sheet</li> <li><b>ainuxacc</b> Accounting exit</li> <li><b>ainuxaud</b> Audit exit</li> </ul>
<b>full</b>	InfoPrint generates a full style of auxiliary-sheet information, using form definition <b>F1A10110</b> and the following user-exit programs: <ul style="list-style-type: none"> <li><b>ainuxhdr2</b> Start sheet</li> <li><b>ainuxsep2</b> Separator sheet</li> </ul>

	<b>ainuxtlr2</b> End sheet
	<b>ainuxacc2</b> Accounting exit
	<b>ainuxaud2</b> Audit exit
<b>blank</b>	InfoPrint generates a blank style of auxiliary-sheet information, using form definition <b>F1A10110</b> and the following user-exit programs: <ul style="list-style-type: none"> <li><b>pduxblkh</b> Start sheet</li> <li><b>pduxblks</b> Separator sheet</li> <li><b>pduxblkt</b> End sheet</li> </ul>
	.
<b>accounting-log</b>	InfoPrint generates accounting or audit information, using the the following user-exit programs: <ul style="list-style-type: none"> <li><b>ainacclog</b> Accounting exit. This program writes accounting information to the <b>/var/psf/accounting.log</b> file. It does not produce a printed sheet, but does allow the information to be displayed using the report generator programs. See Chapter 22, “Viewing Accounting and Auditing Data about the Job (PSF, Fax, and Email DSS Only)” on page 237.</li> <li><b>ainaudlog</b> Audit exit. This program writes audit information to the <b>/var/psf/audit.log</b> file. It does not produce a printed sheet, but does allow the information to be displayed using the report generator programs. See Chapter 22, “Viewing Accounting and Auditing Data about the Job (PSF, Fax, and Email DSS Only)” on page 237.</li> </ul>
	.
<b>job-ticket</b>	InfoPrint generates a printed start, separator, end, or audit sheet showing information from the job ticket in ASCII format, or logs accounting information from the job ticket, using the following user-exit programs: <ul style="list-style-type: none"> <li><b>ainuxhdrp</b> Start sheet</li> <li><b>ainuxsepp</b> Separator sheet</li> <li><b>ainuxtlrp</b> End sheet</li> <li><b>ainuxaccp</b> Accounting exit. This program writes accounting information to the <b>/var/psf/podaccount.log</b> file. It does not produce a printed sheet, but does allow the information to be displayed using the report generator programs. See Chapter 22, “Viewing Accounting and Auditing Data about the Job (PSF, Fax, and Email DSS Only)” on page 237.</li> <li><b>ainuxaudp</b> Audit exit</li> </ul>

You can create your own auxiliary-sheet styles using the InfoPrint **pdcreate** command on the AIX command line. See “Creating New Auxiliary-Sheet Objects Using the pdcreate Command” on page 157 for the procedure.

## Examples of Brief-Style and Full-Style Auxiliary Sheets

The examples of auxiliary-sheet printouts were produced using the InfoPrint **brief** and **full** default auxiliary-sheet objects.

### Start Sheet Examples

In Figure 38, the user-exit program **ainuxhdr** generated the brief style of the start sheet and user-exit program **ainuxhdr2** generated the full style of the start sheet.

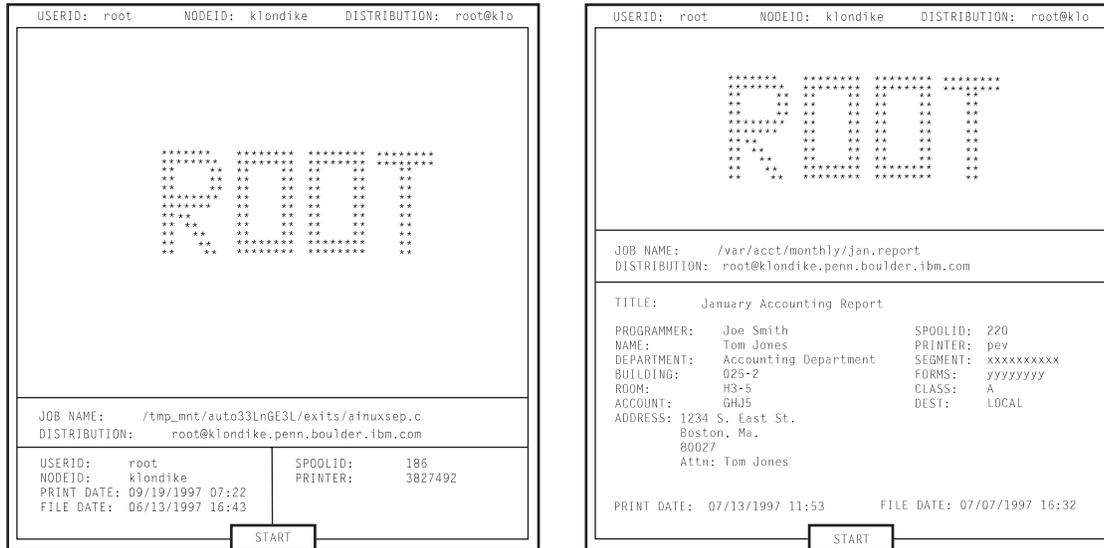


Figure 38. Brief and Full Styles of Start Sheets

### Separator Sheet Examples

In Figure 39 on page 153, the user-exit program **ainuxsep** generated the brief style of the separator sheet and user-exit program **ainuxsep2** generated the full style of the separator sheet.

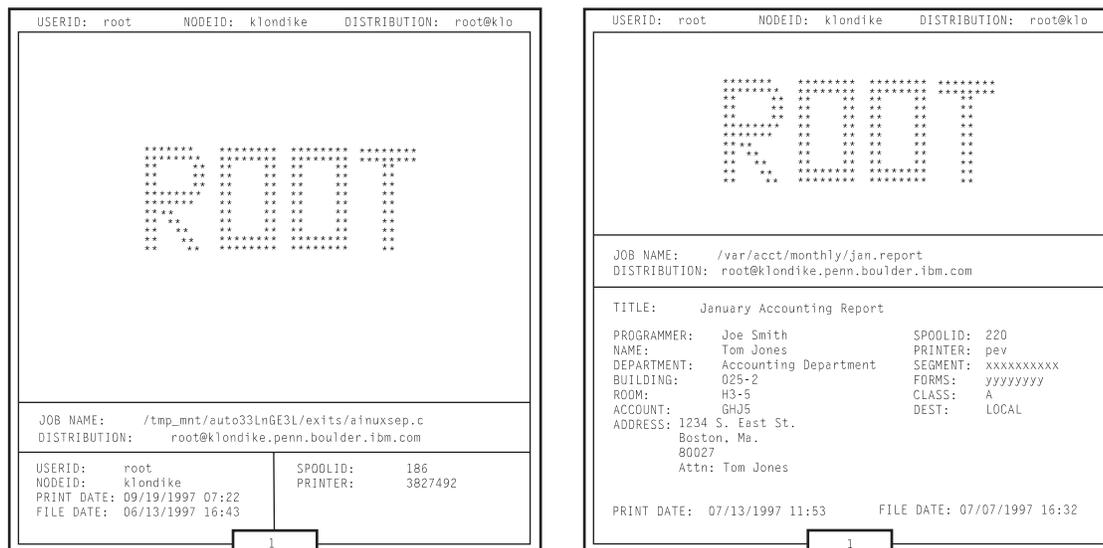


Figure 39. Brief and Full Styles of Separator Sheets



```

ACCOUNTING:
UserID=root
NodeID=klondike
JobName=/tmp/letter/ainuxsep.c
SpoolID=186
PrinterName=3827492
PagesPrinted=17
BinOneSheets=9
BinTwoSheets=0
FontsUsed=2
ResidentFontsUsed=0
OverlaysUsed=0
HardSegmentsUsed=0
SoftSegmentsUsed=0
StartDate=09/19/1997
StartTime=07:22
EndDate=09/19/1997
EndTime=07:22
FileDate=06/13/1997
FileTime=16:43

```

```

ACCOUNTING::
System      UserID=peverley
System      NodeID=nome
JobName=/var/acct/monthly/jan.report
SpoolID=724
PrinterName=e3
PagesPrinted=1
BinOneSheets=1
BinTwoSheets=0
FontsUsed=2
ResidentFontsUsed=0
OverlaysUsed=0
HardSegmentsUsed=0
SoftSegmentsUsed=0
StartDate=09/01/1997
StartTime=15:41
EndDate=09/01/1997
EndTime=15:41
FileDate=08/03/1997
FileTime=08:06
Name=Tom Jones
Supplied    Userid=root
Supplied    Nodeid=staff
Address1=1234 S. East St.
Address2=Boston, Ma.
Address3=80027
Address4=Attn: Tom Jones
Account=GHJ5
Building=025-2
Department=Accounting Department
Programmer=Joe Smith
Room=H3-5
Title=January Accounting Report
Segmentid=xxxxxxxxxx
Class=A
Forms=yyyyyyyy
Destination=LOCAL
Passthru=segmentid=xxxxxxxxxx,forms=
yyyyyyyy,language=Roman,class=A,
destination=LOCAL

```

Figure 41. Brief and Full Styles of Accounting-Log Sheets

**Audit Sheet Examples**

In Figure 42 on page 155, the user-exit program **ainuxaud** generated the brief style of the audit sheet and the user-exit program **ainuxaud2** generated the full style of the audit sheet.

```

AUDIT:
UserID=root
NodeID=klondike
JobName=/tmp/letter/ainuxsep.c
SpoolID=186
PrinterName=3827492
PagesPrinted=17
BinOneSheets=9
BinTwoSheets=0
FontsUsed=2
ResidentFontsUsed=0
OverlaysUsed=0
HardSegmentsUsed=0
SoftSegmentsUsed=0
StartDate=09/19/1997
StartTime=07:22
EndDate=09/19/1997
EndTime=07:22
FileDate=06/13/1997
FileTime=16:43

AUDIT:
System      UserID=peverley
System      NodeID=nome
JobName=/var/acct/monthly/jan.report
SpoolID=724
PrinterName=e3
PagesPrinted=1
BinOneSheets=1
BinTwoSheets=0
FontsUsed=2
ResidentFontsUsed=0
OverlaysUsed=0
HardSegmentsUsed=0
SoftSegmentsUsed=0
StartDate=09/01/1997
StartTime=15:41
EndDate=09/01/1997
EndTime=15:41
FileDate=08/03/1997
FileTime=08:06
Name=Tom Jones
Supplied    Userid=root
Supplied    Nodeid=staff
Address1=1234 S. East St.
Address2=Boston, Ma.
Address3=80027
Address4=Attn: Tom Jones
Account=GHJ5
Building=025-2
Department=Accounting Department
Programmer=Joe Smith
Room=H3-5
Title=January Accounting Report
Segmentid=xxxxxxxxxx
Class=A
Forms=yyyyyyyy
Destination=LOCAL
Passthru=segmentid=xxxxxxxxxx,forms=
yyyyyyyy,language=Roman,class=A,
destination=LOCAL

```

Figure 42. Brief and Full Styles of Audit Sheets

### Sequence of User-Exit Programs

Figure 43 shows the order in which InfoPrint calls the user-exit programs during job processing. You cannot change this order.

**Note:** Separator sheets are printed only between copies of a job, not between documents within a job.

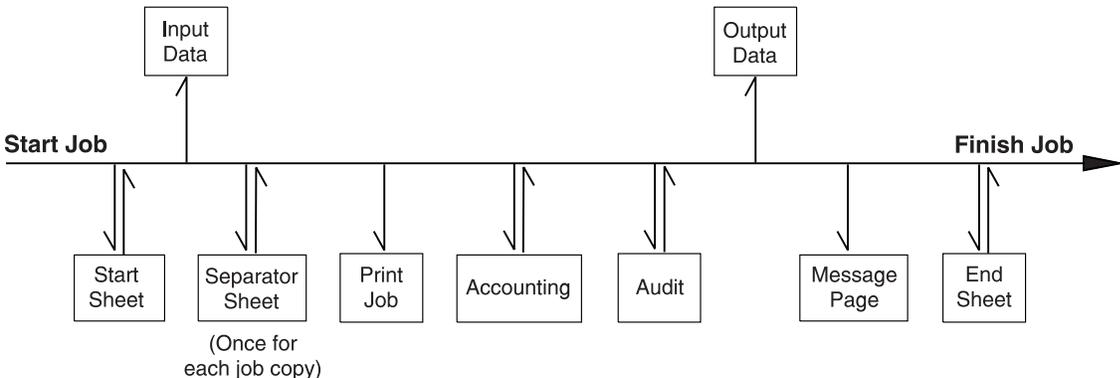


Figure 43. User Exits for InfoPrint

## Directory Locations of User-Exit Programs Supplied with InfoPrint

When you create the auxiliary-sheet object, you specify the name of the user-exit program and other options, such as the form definition, if the program produces printed output. You identify which auxiliary-sheet objects you want associated with each actual destination using the GUI attributes notebook for each actual destination. InfoPrint loads the user-exit programs that are called out into memory and runs the programs when you submit a job to that printer.

Table 4 shows the sample executable user-exit programs that InfoPrint supplies.

<i>Table 4 (Page 1 of 2). User-Exit Programs</i>	
<b>Program</b>	<b>Description</b>
Start Sheets	
<code>/usr/lpp/psf/bin/pduxblkh</code>	Prints a blank start sheet
<code>/usr/lpp/psf/bin/ainuxhdr</code>	Prints a brief-style start sheet
<code>/usr/lpp/psf/bin/ainuxhdr2</code>	Prints a full-style start sheet
<code>/usr/lpp/psf/bin/ainuxhdrp</code>	Prints job ticket information on the start sheet
<code>/usr/lpp/psf/bin/ainuxhdrx</code>	Prints a start sheet without vertical lines for IBM 64xx printers
Separator Sheets	
<code>/usr/lpp/psf/bin/pduxblks</code>	Prints a blank separator sheet
<code>/usr/lpp/psf/bin/ainuxsep</code>	Prints a brief-style separator sheet
<code>/usr/lpp/psf/bin/ainuxsep2</code>	Prints a full-style separator sheet
<code>/usr/lpp/psf/bin/ainuxsepp</code>	Prints job ticket information on the separator sheet
<code>/usr/lpp/psf/bin/ainuxsepx</code>	Prints a separator sheet without vertical lines for IBM 64xx printers
End Sheets	
<code>/usr/lpp/psf/bin/pduxblkt</code>	Prints a blank end sheet
<code>/usr/lpp/psf/bin/ainuxtlr</code>	Prints a brief-style end sheet
<code>/usr/lpp/psf/bin/ainuxtlr2</code>	Prints a full-style end sheet
<code>/usr/lpp/psf/bin/ainuxtlrp</code>	Prints job ticket information on the end sheet
<code>/usr/lpp/psf/bin/ainuxtlrx</code>	Prints an end sheet without vertical lines for IBM 64xx printers
Accounting	
<code>/usr/lpp/psf/bin/ainuxacc</code>	Prints a brief-style accounting sheet
<code>/usr/lpp/psf/bin/ainuxacc2</code>	Prints a full-style accounting sheet
<code>/usr/lpp/psf/bin/ainuxaccp</code>	Writes accounting information to <b><code>/var/psf/podaccount.log</code></b>
<code>/usr/lpp/psf/bin/ainacclog</code>	Writes accounting information to <b><code>/var/psf/accounting.log</code></b>

<i>Table 4 (Page 2 of 2). User-Exit Programs</i>	
<b>Program</b>	<b>Description</b>
Auditing	
<code>/usr/lpp/psf/bin/ainuxaud</code>	Prints a brief-style audit sheet
<code>/usr/lpp/psf/bin/ainuxaud2</code>	Prints a full-style audit sheet
<code>/usr/lpp/psf/bin/ainuxaudp</code>	Prints job ticket information on the audit sheet
<code>/usr/lpp/psf/bin/ainaudlog</code>	Writes accounting information to <b><code>/var/psf/audit.log</code></b>
Input Data	
<code>/usr/lpp/psf/bin/ainuxind</code>	Performs no tasks; use it as a model for writing your own user exit program
Output Data	
<code>/usr/lpp/psf/bin/ainuxout</code>	Performs no tasks; use it as a model for writing your own user exit program

In addition, you can use the source code of the sample user-exit programs to write your own user-exit programs. InfoPrint provides the source code in the `usr/lpp/psf/exits` directory.

---

## Creating and Configuring Auxiliary-Sheet Objects (PSF, Fax, and Email DSS Only)

When you first create a server, InfoPrint creates the default auxiliary-sheet objects described in “InfoPrint Default Auxiliary-Sheet Objects” on page 150. The following topics describe how you can create and configure auxiliary-sheet objects.

### Creating New Auxiliary-Sheet Objects Using the `pdcreate` Command

You create auxiliary-sheet objects from the AIX command line; you cannot create them through the InfoPrint administrator's GUI. Use **`-c auxiliary-sheet`** with the **`pdcreate`** command and specify the server name and an auxiliary-sheet object name to create a new auxiliary-sheet object. Specify a name that uniquely identifies the auxiliary-sheet object within the server. Two servers can each contain an auxiliary-sheet object with the same name, but possibly with different values for their attributes.

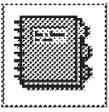
You also specify the **`psf-exit-form-definition`**, **`psf-exit-page-mark`**, and **`psf-exit-program-name`** attributes with the command to specify the form definition, whether edge marks print, and the user-exit program used.

For example, to create an auxiliary-sheet object named `custom-start` contained in `Server1` that specifies the `ainuxhdr` user-exit program, the `F1A10110` form definition, and includes edge marks, enter the command:

```
pdcreate -c auxiliary-sheet -x "psf-exit-program-name=ainuxhdr
    psf-exit-form-definition=F1A10110 psf-exit-page-mark=true"
    Server1:custom-start
```

To read more about auxiliary-sheet attributes, enter the following at the AIX command prompt to view the associated man pages:

## Associating Auxiliary-Sheet Objects with a PSF Physical Printer



When you create a PSF actual destination, InfoPrint automatically makes all of the default auxiliary sheets and any auxiliary sheets you have created available for use by the actual destination.

To view the auxiliary-sheet styles available to the actual destination:

1. Open an actual destinations pane or well that contains the desired actual destination icon. See “Displaying Actual Destinations in the InfoPrint Administrator's GUI” on page 104 if you do not know how to open an actual destinations pane or well.

2. Drag the **Notebook** icon from the Actions area and drop it on the actual destination icon.

The View and Change PSF Actual Destination Properties dialog window appears.

3. Select the **Summary** button to display a list of tabs.
4. In the basic InfoPrint administrator's GUI, select the **Separator Sheets** tab. In the advanced InfoPrint administrator's GUI, select the **Auxiliary Sheets** tab.

The three fields for auxiliary sheets are:

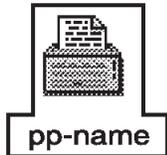
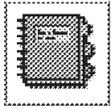
- **Start Sheet**
- **Slip Sheet** (basic) or **Separator Sheet** (advanced)
- **End Sheet**

You can use the **Help** button or the **?** button to view information about the fields.

5. Select the **List** button to the right of the field you want to set.
6. Select the auxiliary sheet that you want to use.
7. Repeat the last two steps for either or both of the other auxiliary-sheet fields.
8. Select the **OK** button.

Jobs processed by this actual destination now include the auxiliary sheets you specified, unless the job explicitly defines another auxiliary sheet supported by the actual destination.

## Activating Auxiliary Sheets for Accounting or Auditing Information



You can also set up auxiliary sheets for accounting and auditing information.

To set which auxiliary-sheet styles you want associated with an actual destination for accounting and auditing information:

1. Open an actual destinations well or pane that contains the desired actual destination icon. In the basic InfoPrint administrator's GUI, this pane must be in the Print Administration window.
2. Drag the **Notebook** icon from the Actions area and drop it on the actual destination icon.

The View and Change PSF Actual Destination Properties window displays.

3. Select the **Summary** button to display a list of tabs.
4. In the basic InfoPrint administrator's GUI, select the **Customization** tab. In the advanced InfoPrint administrator's GUI, select the **PSF Customization** tab.

The fields for accounting and audit auxiliary sheets are:

- **Accounting Exit**
- **Audit Exit** (advanced only)

You can use the **Help** button or the **?** button to view information about the fields.

5. Select the **List** button to the right of the field you want to set.
6. Select the auxiliary sheet that you want to use.
7. Repeat the last two steps for the other auxiliary-sheet field.
8. After you have selected auxiliary sheets for either or both of the fields, select the **OK** button.

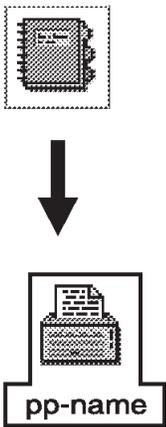
InfoPrint uses the auxiliary sheets you specified to collect information about jobs processed by the actual destination.

## Associating an Input Data User-Exit Program with an Actual Destination

You use the input data user-exit program to monitor the contents of the data stream coming into InfoPrint. InfoPrint looks at the data and tracks items such as the size and name of the job, the type of the job, and the buffer size of the incoming data stream.

An example where the input data user-exit program is useful is when you want to change paper in the paper bin, depending on the type of job you are printing. You can set up the input data user-exit program to display a message on the operator console, informing the printer operator to change paper, whenever the user-exit program detects a particular data stream.

**Note:** Unless you modify the sample input data user-exit program supplied with InfoPrint, **ainuxind.c** in the **/var/psf** directory, the user exit only returns a return code value and performs no other function.



To activate the input data user exit for a PSF physical printer, fax destination, or email destination:

1. In the advanced InfoPrint administrator's GUI, open an actual destinations well or pane that contains the desired actual destination icon. See "Displaying Actual Destinations in the InfoPrint Administrator's GUI" on page 104 if you do not know how to open an actual destinations pane or well.

2. Drag the **Notebook** icon from the Actions area and drop it on the actual destination icon.

The View and Change PSF Actual Destination Properties window displays.

3. Select the **Summary** attribute group button.

A list displays.

4. Select **PSF Customization**.

5. Use the **List** button next to the **Input data user exit** field to display a selection list of user-exit programs. Select the user-exit program you want to use to monitor the input data streams of jobs processed by this actual destination.

6. Select the **OK** button.

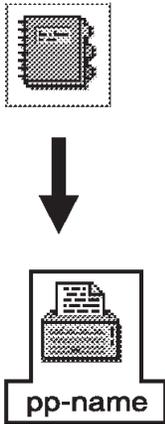
InfoPrint uses the user-exit program associated with the user exit you selected for jobs processed by this actual destination.

## Associating an Output Data User-Exit Program with an Actual Destination

You use the output data user-exit program to monitor the contents of the data stream created by InfoPrint. InfoPrint looks at the data and tracks items such as the size and name of the job, the type of the job, and the buffer size of the outgoing data stream.

An example where the output data user-exit program is useful is when you want to monitor the performance of a printer. You can set up the output data user-exit program to print the number of fonts, page segments, and overlays used in the print job, as well as the starting and ending times of jobs.

**Note:** Unless you modify the sample output data user-exit program supplied with InfoPrint, **ainuxout.c** in the **/var/psf** directory, the user exit only returns a return code value and performs no other function.



To activate the output data user exit for a PSF physical printer, fax destination, or email destination:

1. In the advanced InfoPrint administrator's GUI, open an actual destinations well or pane that contains the desired actual destination icon.
2. Drag the **Notebook** icon from the Actions area and drop it on the actual destination icon.

The View and Change PSF Actual Destination Properties dialog window appears.

3. Select the **Summary** attribute group button.

A list displays.

4. Select **PSF Customization**.
5. Use the **List** button next to the **Output data user exit** field to display a selection list of user exits. Select the user-exit program you want to use to monitor the output data streams of jobs processed by this actual destination.

Enter the name of the user exit you want to use.

6. Select the **OK** button.

InfoPrint uses the user-exit program associated with the user exit you selected for jobs processed by this actual destination.

---

## Modifying Start Sheets for 3170 Physical Printers

Although 3170 physical printers do not support auxiliary-sheet objects, they do print start sheets when the value of the **printer-start-sheet** actual destination attribute is **full**.

The shell script that generates these start sheets is called **/usr/lpp/pd/bin/ic70hdr.ksh**. It reads from the **/usr/lpp/pd/bin/ic70hdr.ps** file. You can modify either of these programs to produce a customized start sheet. The output must be a valid PostScript file.



---

## Chapter 14. Creating and Managing Resource-Context Objects (PSF, Fax, and Email DSS Only)

Resource-context objects identify the locations of different types of Advanced Function Presentation (AFP) resources that jobs sent to PSF physical printers, fax destinations, and e-mail destinations can reference. Resource-context objects let you encapsulate the directory path name in one place. Then you specify the resource-context object name rather than directory names with documents and actual destinations when specifying where to find resources. Later, if the location of a resource subsequently changes, you only need to modify the path name specified in the corresponding resource-context object.

The different types of AFP resources are:

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

You use the **pdcreate** command to identify the directory or directories where the AFP resources reside and provide a name for the resource-context object. You use the **PSF Resources** tab of the actual destination and default document attributes notebooks in the advanced InfoPrint administrator's GUI, or the AIX command line, to identify the resource-context object name or which paths you want to associate with that object. Jobs can also reference resource-context objects through their contained documents. See "The Search Order for AFP Resources" for the search order InfoPrint uses to locate resource-context objects for a job. Both the actual destination and the resource-context objects that are referenced must reside in the same InfoPrint server.

---

### The Search Order for AFP Resources

The following describes the order and the conditions on which InfoPrint searches for AFP resources.

1. For fonts, paths specified by the **-osrchfontlib** keyword on the **enq**, **lp**, **qpvt**, or **lprafp** command

2. Paths specified by the **-oreslib** keyword on the **enq**, **lp**, **qprt**, or **lprafp** command
3. The path specified by the **resource-context-user** document attribute.
4. The paths specified by one of the following document attributes, depending on the type of resource:
  - **resource-context-font**
  - **resource-context-form-definition**
  - **resource-context-overlay**
  - **resource-context-page-definition**
  - **resource-context-page-segment**

**Note:** If one of these document attributes contains a value, InfoPrint ignores any location specified by the same attribute of a default document object, if one is used with the job.
5. The path specified by the **resource-context** document attribute.
6. The path specified by the **PSFPATH** environment variable.
7. The paths specified by the resource-context attributes of the actual destination. These attributes have the same names as the document attributes identified in step 4.
8. The **/usr/lpp/psf/reslib** directory.
9. For fonts, the **/usr/lpp/afpfonts** directory.
10. For fonts, the **/usr/lpp/psf/fontlib** directory.

If InfoPrint cannot find the resource in any of the paths, it still processes the job and prints an error message at the end of the job. InfoPrint reports that the job completed successfully.

---

## Creating a New Resource-Context Object

You create resource-context objects from the AIX command line; you cannot create them through the InfoPrint administrator's GUI. Use **-c resource-context** with the **pdcreate** command and specify the **context-address**, the server name, and resource-context object name to create a new resource-context object. Specify a name that uniquely describes the resource-context object within the server. All resource-context objects within a server appear in the selection lists for the fields in the **PSF Resource** tab of the actual destination attributes notebook. Two servers can each contain a resource-context object with the same name, but possibly with different values for their attributes.

InfoPrint uses resource-context object names as values for the lists associated with the fields in the actual destination attributes notebook or as valid values you can enter in the fields of the default document attributes notebook. Job submitters can also use them as values for attributes of a document within a job.

For example, to create a resource-context object named Resfont1 contained in server Server1 that identifies `/resource/fonts/group1` as the directory containing AFP font resources, enter the command:

```
pdcreate -c resource-context -x "context-address=/resource/fonts/group1"
Server1:Resfont1
```

---

## Changing a Directory Path for a Resource-Context Object

If you need to change the path to a resource-context object, you use the **pdset** command.

For example, to change the path for the resource-context object named `Resfont1` contained in server `Server1` to `/resource/fonts/group2` as the directory containing AFP font resources, enter the command:

```
pdset -c resource-context -x "context-address=/resource/fonts/group2"
      Server1:Resfont1
```

To read more about resource-context attributes, enter the following at the AIX command prompt to view the associated man pages:

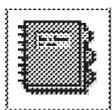
```
pd_att_res_context
```

---

## Assigning Resource-Context Objects to an Actual Destination

If you have the advanced InfoPrint administrator's GUI, you can use it to assign resource-context objects to a PSF physical printer, fax destination, or e-mail destination. The basic InfoPrint administrator's GUI does not have this function, so if you have the basic GUI, you must use the AIX command line.

## Using the Advanced InfoPrint Administrator's GUI



To associate a given resource-context object with a given PSF physical printer, fax destination, or e-mail destination:

1. Open a well or pane containing the actual destination that you want.

See "Displaying Actual Destinations in the InfoPrint Administrator's GUI" on page 104 if you do not know how to open an actual destinations well or pane.

2. Drag the **Notebook** icon from the Actions area and drop it on the actual destination icon.

3. Select the **Summary** attribute group button.

A list displays.

4. Select **PSF Resources**.

5. Select the **List** button for the resource-context object you want to associate with the actual destination. You can use the **Help** button or the **?** button to view information on the selections.

**Note:** If no resource-context objects have been created, the list is empty. You can manually enter a directory path containing resources.

6. Select the value you want from the list or enter a path value.
7. Repeat the same action for other resource-context objects you want to associate with the actual destination.
8. When you have made your selections, select the **OK** button.

InfoPrint searches the directories specified by the resource-context objects or the directories you specified for resources required by jobs.

## Using the AIX Command Line

To assign resource-context objects to a PSF physical printer, fax destination, or e-mail destination from the AIX command line, use the **pdset** command and the **resource-context-font**, **resource-context-overlay**, **resource-context-form-definition**, **resource-context-page-definition**, or **resource-context-page-segment** attribute. For example, to associate the font resource context object Resfont1 with the PSF physical printer Serv1-pp residing in server Server1, enter the following command:

```
pdset -c destination -x "resource-context-font=Resfont1"
Server1:Serv1-pp
```

If you have not created a resource-context object, you can assign the path name of a directory containing resources to the actual destination in the same way. For example, to associate the directories /resource/overlays/julia and /resource/overlays/henry, which contain overlays, with the fax destination Serv1-fax residing in server Server1, enter the following command:

```
pdset -c destination -x
"resource-context-overlay=/resource/overlays/julia:/resource/overlays/henry"
Server1:Serv1-fax
```

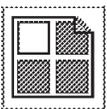
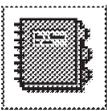
InfoPrint searches the directories specified by the resource-context objects or the directories you specified for resources required by jobs.

---

## Assigning a Resource-Context Object to a Default-Document Object

If you have the advanced InfoPrint administrator's GUI, you can use it to assign resource-context objects to a default-document object. The basic InfoPrint administrator's GUI does not have this function, so if you have the basic GUI, you must use the AIX command line.

## Using the Advanced InfoPrint Administrator's GUI



To assign a resource-context object to a default-document object:

1. Ensure the Server/Objects window is open.  
See "Opening the GUI Application Window Containing Default Objects" on page 138 if you do not know how to open the window.
2. Open the Default Documents folder in the Other Objects pane of the Work Area.  
The Default Documents well opens.
3. Drag the **Notebook** icon from the Actions area and drop it on a default document icon.
4. Select the **Summary** attribute group button.  
A list displays.
5. Select **PSF Resources**.
6. Enter the resource-context object name or the resource path for each resource field you want to associate with the default document. You can use the **Help** button or the ? button to view information on the selections.
7. When you have made your entries, select the **OK** button.

You can now assign the default-document object to an actual destination (see “Associating a Default Job or Document Object with a Logical Destination” on page 140) or inform the job submitters of the resource objects assigned to this default-document object.

## Using the AIX Command Line

To assign resource-context objects to a default-document object from the AIX command line, use the **pdset** command and the **resource-context-font**, **resource-context-overlay**, **resource-context-form-definition**, **resource-context-page-definition**, **resource-context-page-segment**, or **resource-contextattribute**. For example, to associate the font resource context object Resfont1 with the default document report residing in server Server1, enter the following command:

```
pdset -c initial-value-document -x "resource-context-font=Resfont1"  
Server1:report
```

If you have not created a resource-context object, you can assign the path name of a directory containing resources to the default document in the same way. For example, you want InfoPrint to search for resources of any type that it cannot find in the other resource contexts associated with a default document in the directory /resource/any. To associate this directory with the default document report residing in server Server1, enter the following command:

```
pdset -c initial-value-document -x "resource-context=/resource/any"  
Server1:report
```

You can now assign the default-document object to an actual destination (see “Associating a Default Job or Document Object with a Logical Destination” on page 140) or inform the job submitters of the resource objects assigned to this default-document object.



---

## Chapter 15. Setting Notification Profiles

InfoPrint provides notification that you can tailor depending on the needs of job submitters, operators, and administrators. For example, job submitters can receive information about their own jobs, operators can receive information on InfoPrint objects requiring their action, and administrators can receive InfoPrint configuration information.

---

### What Is Notification?

Notification is the detection of events as they occur and the automatic generation and delivery of notification messages relating to those events. InfoPrint sends notification messages related to objects to one or more people based on the **notification-profile** attribute of these objects. You may want InfoPrint to notify the person who manages a queue of all jobs that it cannot schedule. You may also want the individual job submitters to receive the same notification about their jobs.

Notification is an effective way to inform job submitters, operators, and administrators of specific events and enhances your ability to manage a production printing system; you no longer need to query for the important information that helps you maintain your printing operations. And, because InfoPrint does not limit the distribution of notification information to a single person, you can distribute notification messages among many people in your organization.

---

### Understanding Default Notification

By default, the person who creates an object, such as a server, receives the notification messages for that object. The notification messages for the default events provide information on topics, such as status conditions, error conditions, or configuration changes. Some of these events require the person managing the object to intervene, such as when a printer device requires attention for a paper jam. Determining how much notification administrators, operators, and job submitters require takes some planning and, as you familiarize yourself with InfoPrint, you should discover when you require more or less notification. You can start by using the defaults provided by InfoPrint to see how much information InfoPrint generates for the default events and to determine if that amount of notification meets your needs.

The default events set for each object are:

<b>Object</b>	<b>Events</b>
Actual destination	<b>destination-needs-administrator</b> <b>destination-needs-attention</b> <b>destination-needs-operator</b> <b>destination-timed-out</b> <b>object-cleaned</b> <b>object-deleted</b>
Default job	No default

<i>Table 5 (Page 2 of 2). Default Notification Events</i>	
<b>Object</b>	<b>Events</b>
Job	<b>destination-needs-attention</b> <b>destination-needs-operator</b> <b>destinations-not-ready-for-job</b> <b>document-aborted-by-destination</b> <b>document-aborted-by-server</b> <b>document-cancelled-at-destination</b> <b>job-aborted-by-server</b> <b>job-cancelled-by-operator</b> <b>job-cannot-be scheduled</b> <b>job-completed</b> <b>past-discard-time</b>
Logical destination	<b>object-cleaned</b> <b>object-deleted</b>
Queue	<b>object-cleaned</b> <b>object-deleted</b> <b>queue-backlogged</b>
Server	<b>internal-server-error</b> <b>object-cleaned</b> <b>object-deleted</b> <b>server-shutdown-complete</b>

Refer to *IBM InfoPrint Manager for AIX: Reference* for a complete list of notification events and event classes, with descriptions of each event and class.

---

## Getting Help for Notification Messages

Use the **pdmsg** utility and specify the message number to display help for notification messages you receive.

For example, you receive notification messages similar to the following regarding the backlogged status of QueueName contained in the server ServerName.

```
To:nrharvey@hope.bpc.boulder.ibm.com
Subject: 5010-192 Message from InfoPrint server: ServerName
-----
[05/30/97 07:26:38] 5010-304 The queue ServerName:QueueName is backlogged.
```

To receive help for message 5010-304, enter the command:

```
pdmsg 5010-304
```

InfoPrint displays information similar to the following:

```
5010-304 The queue _____:_____ is backlogged.
5010-304
EXPLANATION:InfoPrint calculates that there are too many jobs in
this queue for all the jobs to print within the time specified by the
queue-backlog-upper-bound value.
A notification-profile value requested that you be notified of the event
queue-backlogged.
SYSTEM ACTION:The queue continues to accept jobs, but there will
be a delay before they print.
RESPONSE:Alleviate the backlog by moving some of the
jobs to a different queue or by adding actual destinations to this queue.
```

**Note:** The **LANG** environment variable and the message catalogs installed control the language in which the **pdmsg** utility displays message help information.



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---

## Chapter 16. Queue Tasks for Operators

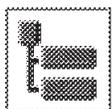
InfoPrint queues receive jobs from logical destinations and manage the jobs until the server schedules them to logical destinations. Use the information in this chapter to create additional queues and perform configuration and maintenance tasks.

---

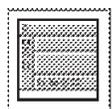
### Preparing to Work with Queues

You create and manage InfoPrint queues through the advanced InfoPrint administrator's GUI. The basic InfoPrint administrator's GUI does not display queue icons, because it is designed for installations in which queues require little management. In these installations, every server contains one queue that is created when the server is first configured.

### Displaying Queues in the InfoPrint Administrator's GUI



Expand to Wells



Open Printers Window

All of the procedures described in this section require you to have either a queues well or a queues pane open. There are several ways to open a queues well or pane. Two of the easiest ways are to open a queues well or pane from the Servers window.

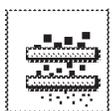
- Either double-click on a server icon or drag the **Expand to Wells** icon from the Display Controls area and drop it on a server icon.

This opens a queues well and an actual destinations well below the server icon in the Servers window Work Area.

- Drag the **Open Window** icon from the Actions area and drop it on a server icon.

This opens the Server/Objects window, which contains a queues pane.

### Controlling the Queues Displayed in the Work Area



Filter (Include)

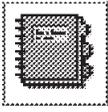
You can set up filter criteria to control which queues display in the Work Area of the InfoPrint administrator's GUI. You may find this useful if you have a several queues and you only want to work with a selected group of them.

To filter for specific queues:

1. Open a queues well or a window containing a queues pane.
2. Drag the **Filter (Include)** icon from the Display Controls area and drop it on an open area of the queue well or pane. The Filter Queues window displays.
3. Use the fields on the window to enter your filter criteria. You can use the **Help** button or the ? button to view information on the fields.
4. Select the **OK** button.

Only queues matching your filter criteria display.

## Displaying the Attributes Notebook for a Queue

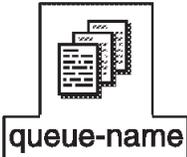


You view and change queue attributes through the attributes notebook for the queue. You perform many of the configuration and maintenance tasks in this section using the attributes notebook.

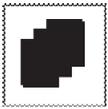
To display a notebook for a queue:

1. Open a queues well or a window containing a queues pane.
2. Drag the **Notebook** icon from the Actions area and drop it on the queue icon.

InfoPrint opens the attributes notebook for the queue.



## Determining Queue Status



Paused

Any time that you pause a queue, the queue icon turns black. The last page of the queue icon turns red if the queue is backlogged. The problem child symbol overlays the queue icon for other problems. You can use the attributes notebook for the queue for information on its status.

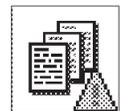
To check queue status and the status of its associated printers:

1. Select the **Preference** button.  
The User Preferences window displays.
2. Select **Yes** for the Display attributes for advanced users in notebooks field.
3. Select the **OK** button.

Backlogged



4. Open a queues well or a window containing a queues pane that contains the blacked-out icon.



Problem Child

5. Drag the **Notebook** icon from the Actions area and drop it on the blacked-out queue icon.

The View and Change Queue Properties dialog window appears.

6. Check the **State** field under the **Summary** tab for the queue status and the fields under the **Status** tab to determine which logical destinations and actual destinations are ready.

7. Select the **Preference** button.

The User Preferences window displays.

8. Select **No** for the Display attributes for advanced users in notebooks field.

9. Select the **OK** button.

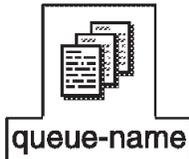
This returns you to the normal notebook setting.

---

## Pausing and Resuming Queues

You can pause a queue if you need to prevent the server from scheduling any of the jobs in the queue to actual destinations. Pausing a queue is useful if you need to make modifications to one or more jobs in the queue. You can also pause a queue before shutting down a server. You will need to resume the queue after restarting the server.

### Pausing a Queue

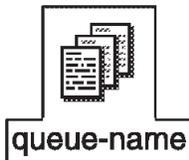
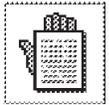


To pause a queue:

1. From the Servers window, open a queues well for the server containing the queue that you want to pause.
2. Drag the **Pause** icon from the Actions area and drop it on the queue icon.

The queue icon turns black and the icon for the server containing the queue has the problem child symbol added to its icon, if that indicator was not already there.

### Resuming a Queue



To resume a paused queue so that InfoPrint can schedule jobs it contains to actual destinations:

1. From the Servers window, open a queues well for the server containing the queue that you want to resume.
2. Drag the **Resume** icon from the Actions area and drop it on the black queue icon.

The queue icon returns to normal appearance and the problem child symbol is removed from the server icon if this was the only problem child of the server.

---

## Disabling and Enabling All Logical Destinations that Send Jobs to a Queue

If you need to make all logical destinations that send jobs to a queue unavailable for the same period of time so the logical destinations cannot send any more jobs to the queue, you can disable the queue.

**Note:** If jobs sent to the logical destinations you disable are generated through application programs, problems may occur when InfoPrint rejects the jobs. You may want to coordinate disabling the logical destinations with the owners of the application programs that generate jobs.

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## Chapter 17. Actual Destination Tasks for Operators

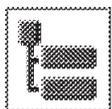
The InfoPrint actual destination is the InfoPrint software representation of an output device. The attributes of the actual destination reflect how the output device connects to the RS/6000 and describe the features, functions, and capabilities of the printer. Through actual destination configuration, you can ensure that InfoPrint validates that an available output device supports the requirements of a job before accepting the job. You also configure actual destinations to control how InfoPrint schedules jobs.

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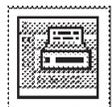
### Preparing to Work with Actual Destinations

You create and manage InfoPrint actual destinations through the InfoPrint administrator's GUI. The following topics describe information you need to obtain before creating new actual destinations and usage tips for displaying actual destination information.

### Displaying Actual Destinations in the InfoPrint Administrator's GUI



Expand to Wells



Open Printers Window

All of the procedures described in this section require you to have either an actual destinations well or an actual destinations pane open.

In the basic InfoPrint administrator's GUI, open the Print Management window or the Print Administration window from the desktop. Either of these windows contains an actual destinations pane.

**Note:** The Print Management window allows you to perform operator tasks. The Print Administration window allows you to perform both operator and administrator tasks.

In the advanced InfoPrint administrator's GUI, there are several ways to open an actual destinations well or pane. Two of the easiest ways are to open an actual destinations well or pane from the Servers window:

- Either double-click on a server icon or drag the **Expand to Wells** icon from the Display Controls area and drop it on a server icon.

This opens an actual destinations well and a queues well below the server icon in the Servers window Work Area.

- Drag the **Open Printers Window** icon from the Actions area and drop it on a server icon.

This opens the Server/Actual Destinations window, which contains an actual destination pane.

## Controlling the Actual Destinations Displayed in the Work Area



Filter (Include)

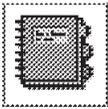
You can set up filter criteria to control which actual destinations display in the Work Area of the InfoPrint administrator's GUI. You may find this useful if you have a large number of actual destinations and you only want to work with a selected group of them.

To filter for specific actual destinations:

1. Open an actual destinations well or a window with an actual destinations pane.
2. Drag the **Filter (Include)** icon from the Display Controls area and drop it on an open area of the actual destinations well or pane. The Filter Actual Destinations window displays.
3. Use the fields on the window to enter your filter criteria. You can use the **Help** button or the ? button to view information on the fields.
4. Select the **OK** button.

Only actual destinations matching your filter criteria display.

## Displaying the Attributes Notebook for an Actual Destination



You view and change actual destination attributes through the attributes notebook for the printer. You perform many of the configuration and maintenance tasks in this section using the attributes notebook.

To display a notebook for an actual destination:

1. Open an actual destinations well or a window with an actual destinations pane.
2. Drag the **Notebook** icon from the Actions area and drop it on the actual destination icon.

InfoPrint opens the attributes notebook for the actual destination.

**Note:** If you wish to change the attributes, you must first disable the actual destination. When you have made the changes, you must reenable the actual destination so that it can accept jobs. See “Disabling and Enabling Actual Destinations” on page 186.

## Determining the Status of an Actual Destination

The following conditions indicate that an actual destination or the output device it represents has a problem:

- The icon for the actual destination is red or black.
- The Problem Destination dialog displays.
- The output device is not processing jobs.

More than one of these conditions can occur at the same time. You need to determine the problem and fix it.

## Red or Black Icon

Actual destination icons change color to indicate changes in status.

- In the basic InfoPrint administrator's GUI, the icon for an actual destination turns red whenever:
  - You pause the job processing on the actual destination.
  - The system determines that the actual destination has a problem.
- In the basic InfoPrint administrator's GUI, the icon for an actual destination turns black whenever:
  - You disable the actual destination.
  - You shut down the actual destination.
- In the advanced InfoPrint administrator's GUI, the icon for an actual destination turns black whenever:
  - You pause the actual destination or the job processing on the actual destination.
  - You disable the actual destination.
  - You shut down the actual destination.
  - The system determines that an actual destination has a problem.

If you do not know why the icon has changed color, you can find out by checking its properties. Follow these steps:

1. Open an actual destinations well or a window with an actual destinations pane that contains the changed icon.
2. Drag the **Notebook** icon from the Actions area and drop it on the changed actual destination icon.

The View and Change Actual Destination Properties notebook appears.

3. Check the following fields:

- On the Summary tab, check the **Enabled**, **State**, and **Problem Message** fields. If the actual destination state is **needs-attention** or **needs-key-operator**, go to the Status tab to determine when the actual destination entered that state.
- On the Scheduling tab of the basic InfoPrint administrator's GUI, check the **Disable on Job Setup Mismatch** field. If the value of the **Enabled** field is No and the value of this field is **Yes**, a job may require a resource that this actual destination does not have ready or does not support.
- On the Summary tab of the advanced InfoPrint administrator's GUI, check the **Force Printer Setup** field. If the value of the **Enabled** field is **No** and the value of this field is **Yes**, a job may require a resource that this actual destination does not have ready or does not support.

## The Problem Destination Dialog

The Problem Destination dialog displays the actual destination attributes causing the problem and their current values. The attributes appear in the same way as in the actual destination attributes notebooks. This includes any buttons or other controls used to modify the value of an attribute, such as a **List** button, radio

buttons, or a **Modify** button. Change the attribute value to a different value to correct the problem.

If the Problem Destination dialog does not fix the problem, follow these steps:

1. Open an actual destinations well or a window with an actual destinations pane that contains the changed icon.
2. Drag the **Notebook** icon from the Actions area and drop it on the changed actual destination icon.

The View and Change Actual Destination Properties notebook appears.

3. Check the following fields:
  - On the Summary tab, check the **Enabled**, **State**, and **Problem Message** fields. If the actual destination state is **needs-attention** or **needs-key-operator**, go to the Status tab to determine when the actual destination entered that state.
  - On the Scheduling tab of the basic InfoPrint administrator's GUI, check the **Disable on Job Setup Mismatch** field. If the value of the **Enabled** field is No and the value of this field is **Yes**, a job may require a resource that this actual destination does not have ready or does not support.
  - On the Summary tab of the advanced InfoPrint administrator's GUI, check the **Force Printer Setup** field. If the value of the **Enabled** field is **No** and the value of this field is **Yes**, a job may require a resource that this actual destination does not have ready or does not support.

## Making the Same Change to More Than One Actual Destination



You can make the same change to multiple actual destinations at the same time. You may want to do this if you have a pool of printers used for printing the same types of jobs and you need to update one or more actual destination attributes to support the jobs.

To make a change to more than one actual destination:

1. Open an actual destinations well or a window with an actual destinations pane.
2. Select two or more of the actual destination icons using one of the following methods:
  - Use the mouse and marquee select the icons by holding down the mouse button and drawing a box around the icons.
  - Hold down the **Shift** key and select two or more of the actual destination icons.
1. Drag one of the highlighted actual destination icons and drop it on the **Global Change** icon in the Actions area. The Global Change - Select Actual Destination Attributes dialog window displays.
2. Select one or more attributes.
3. Select the **OK** button. The Global Change - Specify Attribute Values dialog window displays listing fields, lists, or buttons for all of the attributes you selected.
4. Fill in the value changes for the attributes. Then select the **OK** button.

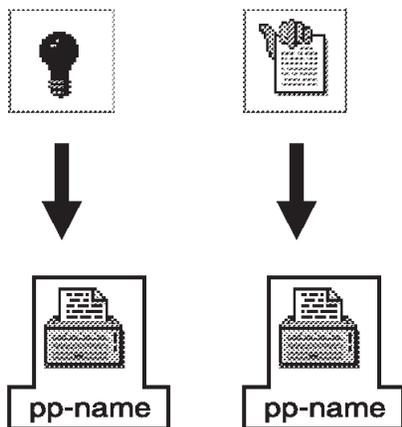
InfoPrint applies the attribute values to all of the selected actual destinations.

---

## Pausing and Resuming Actual Destinations

If you need to make an output device unavailable for a short period of time, for example, while you change the media, you can pause the actual destination. Pausing the actual destination causes InfoPrint to stop sending data about the currently processing and printing jobs to the output device. However, pausing an actual destination does not prevent InfoPrint from assigning new jobs to it. Jobs resume processing and printing when you resume the actual destination.

### Pausing an Actual Destination



To pause an actual destination:

1. Open an actual destinations well or a window with an actual destinations pane that contains the actual destination you want to pause.
2. In the basic InfoPrint administrator's GUI, drag the **Interrupt** icon from the Actions area and drop it on the actual destination icon. In the advanced InfoPrint administrator's GUI, drag the **Pause** icon from the Actions area and drop it on the actual destination icon. A dialog window displays.
3. Specify how you want to pause the actual destination. You can use the **Help** button or the ? button to view information on the selections.

In the advanced InfoPrint administrator's GUI, you can choose whether to pause the actual destination itself or the job processing on the actual destination. If you pause the actual destination, it stops processing the current job and does not accept other jobs. If you pause the job, the actual destination continues to accept and process other jobs. Pausing the job is the only option in the basic InfoPrint administrator's GUI.

4. Select the **OK** button.

InfoPrint pauses the actual destination. The printer icon changes color to show that it is paused.

**Note:** Depending on how you choose to pause the printer and the size of jobs currently processing and printing, the pause action may take a long time to complete.

## Resuming a Paused Actual Destination



To resume a paused actual destination so that it resumes processing and printing jobs assigned to it:

1. Open an actual destinations well or a window with an actual destinations pane that contains the icon of the actual destination you want to resume.
2. In the basic InfoPrint administrator's GUI, drag the **Release** icon from the Actions area and drop it on the actual destination icon. In the advanced InfoPrint administrator's GUI, drag the **Resume** icon from the Actions area and drop it on the actual destination icon.

InfoPrint resumes the actual destination and returns its icon to its normal appearance.

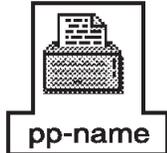
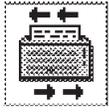
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## Forward Spacing and Backspacing PSF Physical Printers

You can cause the printer device to skip forward or back a number of sides within the current job and then resume printing. You can forward space or backspace the job that is currently printing by a specified number of sides. If the job is printing only on one side of the medium (single-sided printing), one side is equivalent to one sheet. If the job is printing on both sides of the medium (duplexed printing), two sides are equivalent to one sheet. You can space a physical printer that is stopped (the printer device was physically stopped with the **STOP** button), paused, or currently printing a job. In this case, InfoPrint spaces the job in the direction you specify when you restart the printer device or resume the physical printer.

**Note:** You cannot forward space or backspace an ASCII job.

## Forward Spacing a PSF Physical Printer



Forward spacing a PSF physical printer is useful if you have canceled or canceled and retained a job after a portion of the job has printed. You can resubmit the job and then forward space to resume printing from a specified point in the job. This prevents InfoPrint from reprinting pages that were already completed before the job was cancelled.

To forward space a PSF physical printer:

1. Ensure that the printer is stopped.
2. Open an actual destinations well or a window with an actual destinations pane that contains the PSF physical printer that you want to forward space.
3. Drag the **Space** icon from the Actions area and drop it on the physical printer icon.

InfoPrint displays the Space PSF Actual Destinations window dialog. By default, the **Backspace** button on the dialog window is selected.

4. Select the **Forwardspace** button and specify how many sides you want to forward space the job currently printing.
5. Select the **OK** button.

InfoPrint forward spaces the job.

6. Start the printer.

## Backspacing a PSF Physical Printer



Backspacing a PSF physical printer is useful for conditions that you notice at the printer device as a job is printing. For example, a low toner supply in the printer device could cause the printer to no longer print the job legibly.

To backspace a PSF physical printer:

1. Ensure the printer is stopped.
2. Open an actual destinations well or a window with an actual destinations pane that contains the PSF physical printer that you want to backspace.
3. Drag the **Space** icon from the Actions area and drop it on the physical printer icon. InfoPrint displays the Space PSF Actual Destinations dialog window. By default, the **Backspace** button on the dialog window is already selected.
4. Specify how you want to backspace the job currently printing. You can use the **Help** button or the ? button to view information on the selections.
5. Select the **OK** button.

InfoPrint backspaces the job.

6. Start the printer.

---

## Disabling and Enabling Actual Destinations

If you need to make an output device unavailable for a longer period of time, for example, for service, you can disable the actual destination representing the output device. Disabling the actual destination prevents InfoPrint from sending any more jobs to it. Typically, you will allow all jobs currently processing on the actual destination to complete before disabling it.

### Disabling an Actual Destination



To disable an actual destination:

1. Open an actual destinations well or a window with an actual destinations pane that contains the actual destination you want to disable.
2. Drag the **Disable** icon from the Actions area and drop it on the actual destination icon.

InfoPrint disables the actual destination. The actual destination icon turns black to show that it is disabled.

### Enabling a Disabled Actual Destination



To enable a disabled actual destination so that it will accept new jobs:

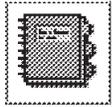
1. Open an actual destinations well or a window with an actual destinations pane that contains the blacked-out icon of the actual destination you want to enable.
2. Drag the **Enable** icon from the actions area and drop it on the blacked-out actual destination icon.

InfoPrint enables the actual destination and returns its icon to its normal appearance.

**Note:** You also use this procedure to enable actual destinations that you have shut down. See "Shutting Down Actual Destinations" on page 191.

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## Changing the Media in a Physical Printer



To change the media in a physical printer:

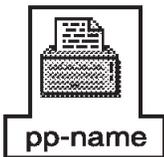
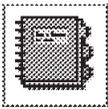
1. Press the **Stop** button on the printer device. InfoPrint automatically disables the physical printer.
2. Load the new medium into the input tray of the printer device.
3. If the printer device is a continuous-forms printer, for example, an InfoPrint 4000, select a form corresponding to the new medium at the operator's console of the printer device.
4. If the printer device has a cutter-trimmer-stacker, adjust the cut length, cut width, and slitting options as necessary.
5. Open the attributes notebook for the physical printer.
6. Update the appropriate field:
  - In the basic InfoPrint administrator's GUI, go to the **Media** tab. In the **Media Ready** field, delete the old medium and add the new medium.
  - In the advanced InfoPrint administrator's GUI, go to the **Forms** tab. In the **PSF Tray Characteristics** field for a PSF physical printer, or the **Input Tray to Medium Mapping** field for an AIX or BSD physical printer, find the entry for the input tray where you loaded the new medium. Modify this entry to show the new medium name. InfoPrint automatically updates the **Media Ready** field with your change.
7. Enable the physical printer.
8. Restart the printer device.

---

## Specifying the Job Batches Ready for an Actual Destination

You can use the advanced InfoPrint administrator's GUI to set up batch processing for groups of jobs to control job flow. By setting one or more **job-batches-ready** values at the actual destinations and having job submitters submit jobs that use the same values, you can control which jobs are processed at the actual destination and when the jobs are processed.

For example, you may have certain jobs that require stapling and delivery to the mail room after they print. You want all of these jobs to print on a specific printer capable of stapling at a time when an operator is available to pick up and deliver the jobs. Jobs requiring this type of handling are submitted with a specific value, such as **staple-and-mail**, for their **job-batch** attribute. InfoPrint holds these jobs in the queue until an actual destination is available that has a value of **staple-and-mail** for its **job-batches-ready** attribute. The operator can set this value for the actual destination when they are ready to print and deliver the jobs.



To set up an actual destination so that it accepts jobs that have a specific value for their **job-batch** attribute:

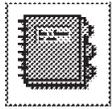
1. Open the attributes notebook for the actual destination.
2. Select the **Summary** attribute group button. A list displays.
3. Select **Jobs/Documents**.
4. Select the **Add...** button next the **Job batches ready** list box.
5. In the \* **Value** field, enter a value.
6. Select the **Add** button. InfoPrint adds the value to the **Job batches ready** list box.
7. Select the **OK** button.

Now, any jobs using the same value for their **job-batch** attribute print on this actual destination.

**Note:** After you have completed controlling and processing jobs using job batch, you can delete the job-batches-ready values from the actual destination.

---

## Modifying the Order in Which Jobs Are Scheduled to an Actual Destination



You can control the order in which jobs are scheduled to process on an actual destination. You can process jobs:

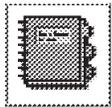
- In the order that they are submitted (first-in-first-out)
- According to their size (smallest or largest first)
- Based on their deadline time or their assigned priority

To specify the order for scheduling jobs and the way to break ties:

1. Open the attributes notebook for the actual destination.
2. In the basic InfoPrint administrator's GUI, go to the **Scheduling** tab. In the advanced InfoPrint administrator's GUI, go to the **Summary** tab.
3. In the **Primary Scheduler** and **Secondary Scheduler** fields, select a value from the list.
4. Select the **OK** button.

---

## Querying Actual Destination Attributes



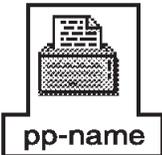
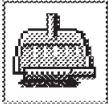
You can query for actual destination information that reflects status, such as its state or the media that is currently ready.

1. Open the attributes notebook for the actual destination.
2. Select the **Search...** button. The Search for an Attribute dialog window opens.
3. Either type in an attribute name in the **Search for** field or select an attribute from the list.
4. Select the **OK** button.

InfoPrint displays the notebook tab containing the attribute.

---

## Cleaning Actual Destinations



You can clean an actual destination to remove all jobs assigned to it. If the actual destination is printing or transmitting a job when you clean it, InfoPrint cancels the job at the soonest possible point. Then InfoPrint disables the actual destination to prevent it from accepting new jobs. After disabling the actual destination, InfoPrint removes all jobs and then enables the actual destination.

To clean an actual destination:

1. Open an actual destinations well or a window with an actual destinations pane that contains the actual destination you want to clean.
2. Drag the **Clean** icon from the Actions area and drop it on the actual destination icon. InfoPrint displays a confirmation message.
3. Select the **YES** button.

InfoPrint removes all jobs assigned to the actual destination.

---

## Recovering from a RIP Server Failure

By default, jobs submitted to a 3170 actual destination are RIPped on the AIX system where the InfoColor 70 printer is attached. Your print administrator can specify additional AIX systems as RIP servers to speed up RIP processing. Any document in a job submitted to a 3170 actual destination can be RIPped on any RIP server. If a job contains multiple documents, they can be RIPped on different RIP servers.

If a RIP server goes down, any job containing a document that is being RIPped on that server will fail. To recover, follow these steps:

1. From the AIX command line, enter the following command to disable the actual destination:

```
pddisable -c destination DestinationName
```

2. To remove the failed RIP server from the list of RIP servers for the actual destination, enter one of the following commands:

```
pdset -c destination -x "rip-server==IPAddress" DestinationName
```

or

```
pdset -c destination -x "rip-server==HostName" DestinationName
```

3. To verify that the failed RIP server has been removed, enter the following command:

```
pdls -c destination -r "rip-server" DestinationName
```

4. To reenable the actual destination, enter the following command:

```
pdenable -c destination DestinationName
```

5. Follow the instructions in "Reassigning a Job" on page 204 or "Resubmitting a Job" on page 204 to reassign or resubmit the failed job.

6. When the RIP server is working again, follow these steps to restore the RIP server to the list of RIP servers for the actual destination:

- a. Disable the actual destination.

b. Enter one of the following commands:

```
pdset -c destination -x "rip-server+=IPAddress" DestinationName
```

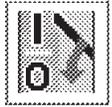
or

```
pdset -c destination -x "rip-server+=HostName" DestinationName
```

c. Reenable the actual destination.

---

## Shutting Down Actual Destinations



You can shut down a PSF physical printer, fax destination, or email destination to release any jobs assigned to it. You may find shutting down an actual destination useful if the output device requires maintenance. For example, a hardware problem has occurred and the output device will be unavailable for an undetermined period of time. You may also find shutting down an actual destination useful if InfoPrint can no longer communicate with the output device. If InfoPrint cannot communicate with the output device prior to shutdown, the shutdown process cannot request new checkpoint information about any jobs assigned to the output device. (Depending on the job, InfoPrint may have earlier checkpoint information.)

Shutting down an actual destination causes InfoPrint to:

- Terminate all communication with the output device.
- Pause the current job on the output device, if checkpoint information about the job exists.
- Stop all jobs that are processing at the actual destination. InfoPrint returns these jobs to the queue and places them in the pending state.
- Disable the actual destination.

To shut down an actual destination:

1. Open an actual destinations well or a window with an actual destinations pane that contains the actual destination that you want to shut down.
2. Drag the **Shut Down** icon from the Actions area and drop it on the actual destination icon.
  - If the actual destination is a fax destination or an email destination, InfoPrint shuts it down immediately and turns its icon black.
  - If the actual destination is a PSF physical printer, the Shut Down PSF Physical Printers dialog window displays.
    - a. Select one of the buttons to specify how you want to shut down the PSF physical printer. You can use the **Help** button or the **?** button to view information on the selections.
    - b. Select the **OK** button.

InfoPrint shuts down the PSF physical printer using the method that you selected and turns its icon black.

**Note:** To enable an actual destination after you have shut it down, use the procedure described in “Enabling a Disabled Actual Destination” on page 186.

---

## Calibrating the Printer Device



To produce a clear PostScript or TIFF halftone image when printing, you might have to calibrate the printer device. You need a densitometer to measure the density of the printer's grayscale output.

1. In a basic installation, select the **Printer Calibration** icon from the desktop front panel.
2. From the Printer Calibration popup menu, select **Print Calibration Pages**. A window listing the available printers opens. When you select a printer, a patch file is submitted to that printer. The patch file shows patches in different shades of gray for all screen frequencies.
3. Use a densitometer to measure the density of each gray patch.
4. From the Printer Calibration popup menu, select **Enter Calibration Values** to display the Printer Calibration Values dialog.
5. The button in the top left corner displays the printer model to calibrate. To change this model, click on the button and select the appropriate model from the dialog.
6. The button under the printer model displays the screen frequency. To change this frequency, click on the button and select the appropriate frequency from the dialog.
7. Enter the densitometer measurements in the boxes. You must enter values for **paper** (0%) and **black** (100%). The other values are optional.
8. Click on **Apply** to calibrate the printer and keep the dialog open so that you can select another printer model, or **OK** to calibrate the printer and close the dialog.
9. To return to the default printer calibration, select **Reset Calibration** from the Printer Calibration popup menu and select the printer model from the dialog.

---

## Chapter 18. Job Tasks for Operators

In addition to working with queues and actual destinations, you can perform a number of job-related tasks from the InfoPrint administrator's GUI. Performing these tasks can help you manage job flow through your printing system.

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### Preparing to Work with Jobs

The following topics describe usage tips for displaying jobs and job information. If you do not know how to start the InfoPrint administrator's GUI, see Chapter 3, "Using the InfoPrint Administrator's GUI" on page 19.

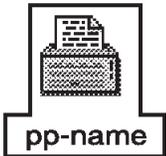
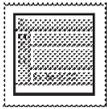
### Displaying Queued or Assigned Jobs in the InfoPrint Administrator's GUI

The InfoPrint administrator's GUI displays jobs from the time they are accepted until they are discarded. Normally, jobs are discarded after completion, but job submitters can also specify that jobs should be retained after printing.

In the basic InfoPrint administrator's GUI, jobs are normally assigned to an actual destination as soon as they are accepted. Therefore, the basic InfoPrint administrator's GUI displays the jobs that are assigned to each actual destination in a separate window. Jobs that are not assigned to an actual destination are displayed in a pane of the Print Management window.

In the advanced InfoPrint administrator's GUI, jobs are not normally assigned to an actual destination until they are about to be processed. Therefore, the advanced InfoPrint administrator's GUI displays all the jobs in a queue in the same window. Jobs that are not assigned to an actual destination are treated no differently from assigned jobs.

## Using the Basic InfoPrint Administrator's GUI



In the basic InfoPrint administrator's GUI, you can display a Print Queue window for any actual destination you are monitoring. This window contains a jobs pane and shows jobs in any state that are assigned to that actual destination. The type of job icon displayed for a job represents the job state, such as held or processing.

To display the Print Queue window:

1. In the Print Management window, Drag the **Open Window** icon from the Actions area and drop it on the actual destination icon.

InfoPrint opens the Print Queue window. This window contains a jobs pane in the Work Area.

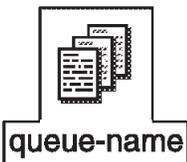
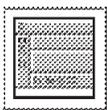
In the Print Queue window, you can display either an icon for each job, with no information except the job name (Grid view), or a line of attributes for each job (Details view). The Grid view allows you to work with the icons; the Details view shows more information. To change the view:

1. Look in the Display Controls area of the Print Queue window for the **Grid View**, **Normal View**, and **Expand to Wells** icons. If these icons are not displayed:
  - a. Click on the **Preferences** button to open the User Preferences dialog.
  - b. Under **Allow display of documents**, select **Yes**.
  - c. Select **Apply** to close the User Preferences dialog.
2. Drag and drop the **Grid View** or **Details View** icon into the work area.

## Using the Advanced InfoPrint Administrator's GUI

In the advanced InfoPrint administrator's GUI, you can open either a Queue/Jobs window or a jobs well displaying all the jobs in a queue.

### *Opening a Queue/Jobs Window*



In the advanced InfoPrint administrator's GUI, you can display a Queue/Jobs window for any queue you are monitoring. This window contains a jobs pane and shows jobs in any state, except retained, that the queue has handled. The type of job icon displayed for a job represents the job state, such as held or processing.

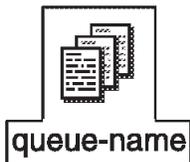
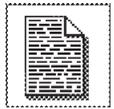
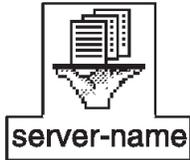
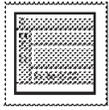
To display the Queue/Jobs window:

1. From the Servers window, open a queues well for the server containing the queue whose jobs you want to view. See "Displaying Queues in the InfoPrint Administrator's GUI" on page 175 if you do not know how to open the queues well.
2. Drag the **Open Window** icon from the Actions area and drop it on the queue icon.

InfoPrint opens the Queue/Jobs window. This window contains a jobs pane in the Work Area.

In the Queue/Jobs window, you can display either an icon for each job, with no information except the job name (Grid view), or a line of attributes for each job (Details view). The Grid view allows you to work with the icons; the Details view shows more information. To change the view, drag and drop the **Grid View** or **Details View** icon into the work area.

### Opening a Jobs Well in the Server/Objects Window



You can also open wells containing jobs for each queue from the Server/Objects window of the advanced InfoPrint administrator's GUI. To do this you must have the Display Queued Jobs well in Server Window field value set to **Yes**; the default setting is **No**. The following procedure describes changing this setting.

To display the window and open a jobs well:

1. From the Servers window, drag the **Open Window** icon from the Actions area and drop it on a server icon.

InfoPrint opens the Server/Objects window. This window contains a queues pane in the Work Area.

2. Select the **Preferences** button.

The User Preferences window displays.

3. Select **Yes** for the Display Queued Jobs well in Server Window field value.

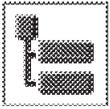
4. Select the **OK** button.

5. Drag the **Expand to Jobs** icon from the Display Controls area and drop it on a queue icon in the Work Area.

A jobs well opens below the queue icon.

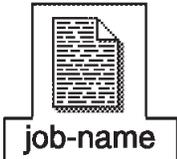
When you have completed your task, you should set the Display Queued Jobs well in Server Window field value to **No**. Displaying jobs can affect performance of the InfoPrint administrator's GUI, depending on the volume of jobs.

## Displaying the Documents in a Job



Jobs can contain one or more documents. You can view the documents of a job in the Print Queue or Queue/Jobs window.

To view the documents of a job:



1. Ensure you have the Print Queue or Queue/Jobs window opened and the Grid view displayed. See “Displaying Queued or Assigned Jobs in the InfoPrint Administrator's GUI” on page 193.
2. In the basic InfoPrint administrator's GUI, look in the Display Controls area of the Print Queue window for the **Expand to Wells** icon. If the **Expand to Wells** icon is not displayed:
  - a. Click on the **Preferences** button to open the User Preferences dialog.
  - b. Under **Allow display of documents**, select **Yes**.
  - c. Select **Apply** to close the User Preferences dialog. The **Expand to Wells** icon, **Grid View**, and **Normal View** icons are displayed.
3. Either double-click on a job icon or drag the **Expand to Wells** icon from the Display Controls area and drop it on the job icon.

A documents well opens below the job icon.

## Displaying Retained Jobs

Retained jobs have either printed or were cancelled and have a value for either their **job-retention-period** or **job-retain-until** attributes. You can resubmit retained jobs as necessary.

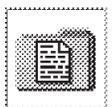
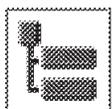
### Using the Basic InfoPrint Administrator's GUI

In the basic InfoPrint administrator's GUI, open the Print Management window. Retained jobs appear in the Retained Jobs pane.

### Using the Advanced InfoPrint Administrator's GUI

In the advanced InfoPrint administrator's GUI, you can display retained jobs either in a retained jobs well in the Server/Objects window or in a Server/Retained Jobs window. The Server/Retained Jobs window allows you to display the documents in a retained job.

### ***Opening a Retained Jobs Well in the Server/Objects Window***



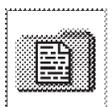
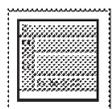
Retained Jobs

To display retained jobs in the Server/Objects window:

1. Ensure you have the Server/Objects window opened. See “Opening a Jobs Well in the Server/Objects Window” on page 195.
2. In the Other Objects pane, either double-click on the **Retained Jobs** folder icon or drag the **Expand to Wells** icon from the Display Controls area and drop it on the folder icon.

The retained jobs well opens below the folder icon.

### ***Opening a Server/Retained Jobs Window***



Retained Jobs

Retained jobs can include more than one document; you can display both the jobs and their documents in the Server/Retained Jobs window.

To open the Server/Retained Jobs window and display retained jobs and their associated documents:

1. Ensure you have the Server/Objects window opened. See “Opening a Jobs Well in the Server/Objects Window” on page 195.
2. Drag the **Open Window** icon from the Actions area and drop it on the **Retained Jobs** folder icon in the Other Objects pane.

InfoPrint opens the Server/Retained Jobs window.

3. Double-click on a job icon in the Work Area.

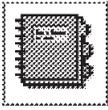
A documents well opens below the job icon.

## **Displaying Unassigned Jobs**

To display jobs that have not been assigned to an actual destination in the basic InfoPrint administrator's GUI, open the Print Management window. Unassigned jobs are displayed in the Unassigned Jobs pane.

In the advanced InfoPrint administrator's GUI, jobs are not normally assigned to an actual destination until they are about to be processed. Jobs that are not assigned to an actual destination are displayed along with assigned jobs in the jobs wells of the Server/Objects window or in the Queue/Jobs window.

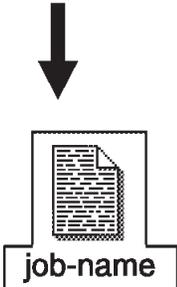
## Displaying Attributes Notebooks for Jobs



You view and change job attributes through the attributes notebook for the job. Any changes you make apply to all documents in the job. You perform many of the job tasks in this section using the attributes notebook.

To display an attributes notebook for a job:

1. Open a jobs well or a window with a jobs pane that contains the job whose attributes notebook you want to view.
2. Drag the **Notebook** icon from the Actions area and drop it on the job icon.  
InfoPrint opens the attributes notebook for the job.
3. Click on the **Summary** attribute group button to display a list of the notebook tabs.
4. Use the **Help** button or the **?** button to view information about the fields on the different tabs. You can also view information for the buttons on the tabs, which you use to make changes to attribute values.

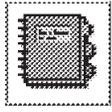


**Note:** To read about job attributes, enter the following command at an AIX command prompt to view the associated man page:

```
man pd_att_job
```

**Note:** Some attributes, such as **output-bin**, **default-medium**, **x-image-shift**, and **y-image-shift**, cause InfoPrint to generate the equivalent of an inline form definition if these attributes vary from document to document within a job. If the job also specifies a form definition, InfoPrint uses the form definition specified and ignores the varying document attributes.

## Displaying Attributes Notebooks for Documents



You can also view and change attributes for documents within a job through the attributes notebooks for each document. Changes you make apply to the individual document, not all of the documents in the job.

To display an attributes notebook for a document:

1. Open a documents well in either the Queue/Jobs or Server/Retained Jobs window. See either “Displaying Queued or Assigned Jobs in the InfoPrint Administrator's GUI” on page 193 or “Displaying Retained Jobs” on page 196.
2. Drag the **Notebook** icon from the Actions area and drop it on the document icon. InfoPrint opens the attributes notebook for the document.
3. Click on the **Summary** attribute group button to display a list of the notebook tabs.
4. Use the **Help** button or the **?** button to view information about the fields on the different tabs. You can also view information for the buttons on the tabs, which you use to make changes to attribute values.

**Note:** To read about document attributes, enter the following command at an AIX command prompt to view the associated man page:

```
man pd_att_document
```

## Displaying the Job Ticket



You can use the basic InfoPrint administrator's GUI to view the job ticket that was created on an InfoPrint Submit system and submitted to IBM InfoPrint Control. The job ticket shows the files, resources, and settings that make up the job. To view the job ticket:

1. Drag and drop the **Show** icon from the Actions area onto the job.

The Job Information dialog displays.

2. Select **Job Ticket** from the list.

The job ticket displays.



## Displaying the Job Log



You can view the job log that was created after a job was submitted. The log details the history of the job and includes state changes that have occurred. To view the job log in the basic InfoPrint administrator's GUI:

1. Drag and drop the **Show** icon from the Actions area onto the job.



The Job Information dialog displays.

2. Select **Job Log** from the list.

The job log displays.

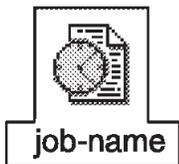
To view the job log in the advanced InfoPrint administrator's GUI, drag and drop the **Show** icon from the Actions area onto the job. The job log displays.



## Determining Job Status



Pending or Retained



Processing, Ripping, or Printing



Held or Paused

The InfoPrint administrator's GUI uses different types of icons to indicate the status of jobs. The following shows the different icons and the job states they represent:

- The normal job icon represents a job whose state is pending or retained. A pending job displays in a jobs pane or well, a retained job displays in a retained jobs well.
- A job icon with a clock represents a job whose state is processing, ripping, or printing. A job state of ripping means that InfoPrint is performing raster-image processing on the job. A processing, ripping, or printing job displays in a jobs pane or well. In the basic InfoPrint administrator's GUI, this icon turns red if the job is in danger of not completing by the deadline.
- A colored job icon represents an abnormal job. A black job icon represents a job whose state is held, paused, or cancelled. In the basic InfoPrint administrator's GUI, a red job icon represents a job that requires a resource that is not ready on the actual destination to which it has been assigned or not supported on any actual destination to which it could be routed, or a job that is in danger of not completing by the deadline.

Unless a task in this chapter is specific to a particular job state, all tasks will use the first job icon described here to represent jobs.

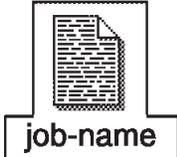
For more information about a job, look at the Details view of the jobs pane. The **Status** and **Reason** fields in the Print Queue window, or the **State** and **State Reason** fields in the Queue/Jobs window, tell you the job state and the reason it is in that state.

---

## Performing Job Tasks

The following topics describe job tasks that you can perform. Jobs can consist of one or more documents and the actions you perform on a job apply to all of the documents that the job contains.

## Pausing a Job



In the advanced InfoPrint administrator's GUI, you can pause pending, processing, printing, ripping, and held jobs to prevent them from printing. Paused jobs remain in the queue until you resume or delete them. You can make modifications to paused jobs, however, when you resume a modified job, it begins printing from the first page of the job.

To pause a job:

1. Open a jobs well or a window with a jobs pane that contains the job you want to pause.
2. Drag the **Pause** icon from the Actions area and drop it on the job icon

InfoPrint displays a message box showing that it is processing the pause request. When InfoPrint has paused the job, the job icon turns black.

In either the basic or the advanced InfoPrint administrator's GUI, you can pause a processing or printing job by pausing the actual destination. See "Pausing an Actual Destination" on page 183.

## Resuming a Job



You may have paused a job to modify its attributes or to prevent it from printing until a later time. When you are ready to print the paused job, you resume it.

To resume a paused job:

1. Open a jobs well or a window with a jobs pane that contains the paused job you want to resume.
2. Drag the **Resume** icon from the Actions area and drop it on the paused job.

InfoPrint returns the job icon to normal appearance and processes the job according to the scheduling method in place.

### Notes:

1. If you do not want to resume a paused job and need to remove it from the system, you can delete it. See "Deleting a Job" on page 203.
2. Jobs which are modified while paused are resumed from the beginning of the job.

## Holding a Job

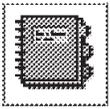


You can place a hold on a job to prevent it from processing. Held jobs remain in the queue until you release the hold or, if the job specifies a job-discard time, until the discard time is reached.

To hold a job using the basic InfoPrint administrator's GUI:

1. Open the Print Queue window that contains the job you want to hold.
2. Drag the **Hold** icon from the Actions area and drop it on the job icon.

The job icon turns black.



To hold a job using the advanced InfoPrint administrator's GUI:

1. Open a jobs well or a window with a jobs pane that contains the job you want to hold.
2. Open the attributes notebook for the job.
3. Select the **Summary** attribute group button.

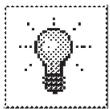
A list displays.

4. Select **Scheduling**.
5. Select the **Yes** button at the top of the tab next to **Hold**.
6. Select the **OK** button.

InfoPrint places a hold on the job and prevents it from processing. The job icon turns black.



## Releasing a Held Job



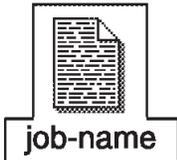
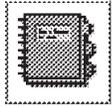
You can release a held job when you are ready to print the job.

To release a job using the basic InfoPrint administrator's GUI:

1. Open the Print Queue window that contains the job you want to hold.
2. Drag the **Release** icon from the Actions area and drop it on the job icon.

After you release the hold, InfoPrint schedules the job for processing.



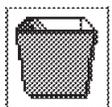


To release a job using the advanced InfoPrint administrator's GUI:

1. Open a jobs well or a window with a jobs pane that contains the job you want to release.
2. Open the attributes notebook for the job.
3. Select the **Summary** attribute group button.  
A list displays.
4. Select **Scheduling**.
5. Select the **No** button at the top of the tab next to **Hold**.
6. Select the **OK** button.

After you release the hold, InfoPrint schedules the job for processing.

## Deleting a Job



You can delete jobs that display in a jobs pane, jobs well, or retained jobs well. If the job you want to delete is processing or printing, InfoPrint deletes it at the soonest possible point; part of the job may print.

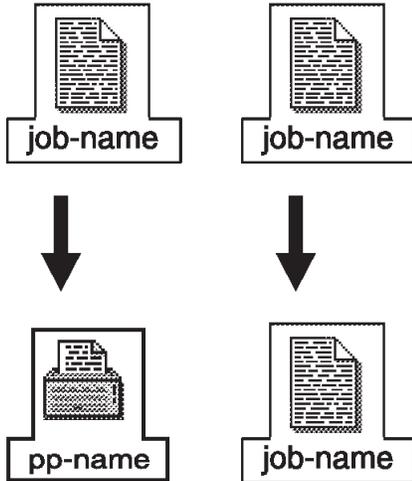
To delete a job:

1. Open a jobs pane or well, or a retained jobs well containing the job you want to delete.
2. Drag the job icon and drop it on the **Trash Can** icon at the lower right of the window.  
InfoPrint displays a message window asking you to confirm the job deletion.
3. Select **Yes**.

InfoPrint deletes the job.

**Note:** You can delete more than one job with a single action. Select two or more jobs. Then drag one of the selected job icons and drop it on the **Trash Can** icon. InfoPrint displays the confirmation message window and lists all of the selected jobs.

## Reassigning a Job



In the basic InfoPrint administrator's GUI, you can reassign pending or retained jobs to a different actual destination or to the unassigned jobs area. You may want to reassign jobs if there are problems with the actual destination, or if modifications to the job require different actual destination capabilities. You can also reassign a job to the same actual destination in order to change its position in the queue.

**Note:** You cannot reassign jobs in the advanced InfoPrint administrator's GUI, but you can get similar results by resubmitting them. See "Resubmitting a Job."

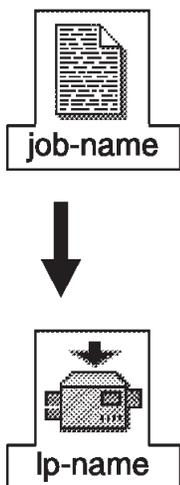
To reassign a job, drag and drop the job icon either:

- Onto an actual destination icon in the Print Management window. InfoPrint reassigns the job to that actual destination.
- Onto a job icon in the Print Queue window for the same actual destination or another actual destination.

InfoPrint reassigns the job to that actual destination and schedules it before or after the job you dropped it on, according to your selection in the User Preferences dialog.

- Into the unassigned jobs area in the Print Management window.

## Resubmitting a Job



In the advanced InfoPrint administrator's GUI, you can resubmit pending or retained jobs to a different logical destination than the one to which the job was originally submitted. You may want to resubmit jobs if there are problems with the associated actual destinations based on the original submission, or if modifications to the job require different actual destination capabilities.

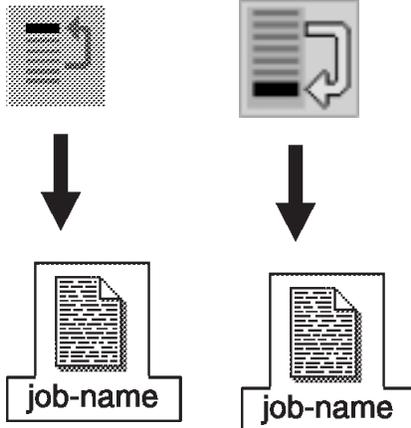
**Note:** You cannot resubmit jobs in the basic InfoPrint administrator's GUI, but you can get similar results by reassigning them. See "Reassigning a Job."

To resubmit a job:

1. In the Server/Objects window, open a jobs well or a retained jobs well that contains the job you want to resubmit.
2. Open a logical destinations well for the queue associated with the logical destination to which you will resubmit the job.
3. Drag the job icon from the jobs or retained jobs well and drop it on the logical destination icon.

InfoPrint resubmits the job.

## Reordering a Job



In the basic InfoPrint administrator's GUI, you can reorder a pending job so that it prints before or after all other pending jobs assigned to the same actual destination.

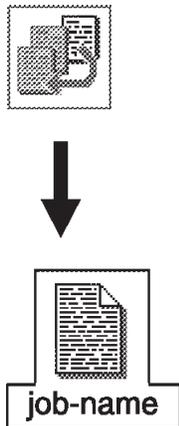
**Note:** You cannot reorder a job in the advanced InfoPrint administrator's GUI, but you can promote it to the top of the queue. See "Promoting a Job."

To reorder a job:

1. Open a Print Queue window containing the job you want to reorder.
2. Drag the **Reorder First** or **Reorder Last** icon from the Actions area and drop it on the job icon.

You can also reorder a job to print immediately before or after a specific job by reassigning it. See "Reassigning a Job" on page 204.

## Promoting a Job



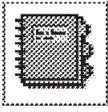
In the advanced InfoPrint administrator's GUI, you can promote a pending job so that it prints ahead of other jobs in a queue. The actual destinations associated with the queue must use the job-priority scheduling method. Otherwise, promoting the job has no effect.

**Note:** You cannot promote a job in the basic InfoPrint administrator's GUI, but you can reorder it so that it prints before or after all other pending jobs assigned to the same actual destination. See "Reordering a Job."

To promote a job:

1. Open a jobs pane or well containing the job you want to promote.
2. Drag the **Promote** icon from the Actions area and drop it on the job icon.

## Setting a Job-Batch Value for a Job

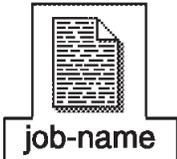


In the advanced InfoPrint administrator's GUI, you can set a job-batch value for a job that causes InfoPrint to process it on a specific actual destination when the printer has the same value set for its **job-batches-ready** attribute. This is useful when you need to control when and where similar jobs process.



To set a job-batch value for a job:

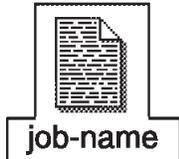
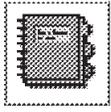
1. Open a jobs well or a window with a jobs pane that contains the job you want to assign a job-batch value.
2. Open the attributes notebook for the job.
3. Select the **Summary** attribute group button.
4. Select **Routing**.
5. Enter a value in the **Job Batch** field.
6. Select the **OK** button.



InfoPrint sets the job-batch for the job and processes it on an actual destination with a corresponding value for its **job-batches-ready** attribute.

**Note:** If no actual destination has a corresponding value, InfoPrint places a hold on the job. The job remains in the queue until you set up an actual destination or delete the job. See “Specifying the Job Batches Ready for an Actual Destination” on page 188 for information on setting up the actual destination.

## Requesting a Specific Actual Destination for a Job



If a pending job has not been assigned to an actual destination, you can request that a specific actual destination process it. This is useful if the queue in which the job resides sends jobs to more than one actual destination and you want to select the actual destination that processes the job.

**Note:** While you can perform this task using the basic InfoPrint administrator's GUI, it is easier to use the procedure in "Resubmitting a Job" on page 204 to assign the job to a specific actual destination.

To request a specific printer for a job:

1. Open a jobs well or a window with a jobs pane that contains the job you want to assign to a specific printer.
2. Open the attributes notebook for the job.
3. Select the **Summary** attribute group button.
4. In the advanced InfoPrint administrator's GUI, select **Routing**. (In the basic InfoPrint administrator's GUI, select **Scheduling**.)
5. Select the **Add...** button to the right of the **Physical Printers Requested** field.  
An Add Value window displays.
6. In the \* **Value** field, enter the name of the actual destination.
7. Select the **Add** button.

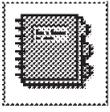
**Note:** You can request more than one actual destination, if necessary. Use the **Help** button or the ? button for more information.

8. Select the **OK** button.

If late binding is in effect (normal for the advanced InfoPrint administrator's GUI), InfoPrint sends the job to the actual destination you specified when it is ready for scheduling. If you specified more than one actual destination, InfoPrint sends the job to the actual destination that is available first.

If early binding is in effect (enforced for the basic InfoPrint administrator's GUI), InfoPrint immediately assigns the job to the actual destination you specified. If you specified more than one actual destination, InfoPrint assigns the job to the first actual destination that it determines to be suitable.

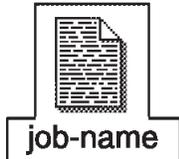
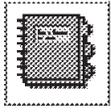
## Changing the Number of Copies of a Job



To change the number of copies of a job to be printed:

1. Drag and drop the **Notebook** action onto the job.
2. In the basic InfoPrint administrator's GUI, type over the value in the **Copies to Print** field on the **Summary** tab. In the advanced InfoPrint administrator's GUI, type over the value in the **Copies** field on the **Documents—Summary** tab.

## Adjusting the Print Quality of a Job



If you are not satisfied with the print quality of a job containing halftone images, you can use the basic InfoPrint administrator's GUI to adjust the quality when you print it again. (The advanced InfoPrint administrator's GUI does not support print quality attributes.)

1. Drag and drop the **Notebook** action onto the job to open the Job attributes notebook.
2. On the **Documents** tab, modify the value of the following attributes:

### Printer resolution requested

If your physical printer supports more than one resolution, or if another physical printer is available, try a different printer resolution. You may have to modify the Resolutions Ready attribute on the Scheduling tab of the PSF Physical Printer attributes notebook or assign the job to a different physical printer.

**RIP for** Select a value for this attribute that matches the physical printer where the job will actually be printed, unless you are proofing the job. In that case, be aware that a proof job will not look as good as the final copy.

3. Open a documents well for the job (see “Displaying the Documents in a Job” on page 196).
4. For each document in the job that is not printing as you would like, drag and drop the **Notebook** action onto the document to open the Document attributes notebook.
5. On the **Processing** tab, modify the value of the following attributes:

### Screen frequency

If you see moire or two-dimensional repeating patterns in halftone output, try a different screen frequency. If you see light and dark bands, possibly with a herringbone pattern under magnification, set the screen frequency to 106 lines per inch.

### Output appearance

Select **standard**, **highlight-midtones**, **dark**, or the name of a customized PostScript transfer function. If you migrated from a previous version of InfoPrint, your administrator may have created a customized transfer function to preserve your old settings.



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## Chapter 19. Controlling Access to InfoPrint

This chapter describes:

- How to add users and groups to your AIX system and change user passwords
- How to use AIX file permissions to control who can perform actions on your InfoPrint system
- For installations with Distributed Computing Environment (DCE) security, how to control who can access InfoPrint objects

---

### Working with AIX Users, Groups, and Passwords

You can use the Users and Groups Manager to add users and groups to your AIX system, make users members of AIX groups, and change user passwords. To access the Users and Groups Manager, select the **Application Manager** control located on the front panel. A window containing other icons will display. Select the **System\_Admin** icon to display the Users and Groups Manager.

The Users and Groups Manager provides easy visual management of the user accounts and groups on your system. To start the application, select this icon. To learn the basics about using a Visual System Management (VSM) interface, select:

- Template Area
- Actions
- Work Area
- View Controls
- Display Controls

The Actions area contains activities you can perform. Each activity, or action, has an icon that graphically represents the task or tasks associated with managing user accounts and groups on your system.

### Users and Groups Manager Work Area

The Work Area contains the Users and Groups Manager objects and allows you to perform actions on those objects. In the Work Area, objects may be displayed in panes or wells to show the relationships between objects or groups of objects.

To learn how to manipulate objects in the work area, select the online help topic using the work area.

### Creating a User

To create a user account:

- If the Groups Templates area is displayed, select the **user template type** icon located in the Template area. The Users Templates area replaces the Groups Templates area.
- Select the **newuser** icon located in the Users Templates area and drag it into the Users Work Area. You will be prompted to provide a name and additional optional information for the new user.

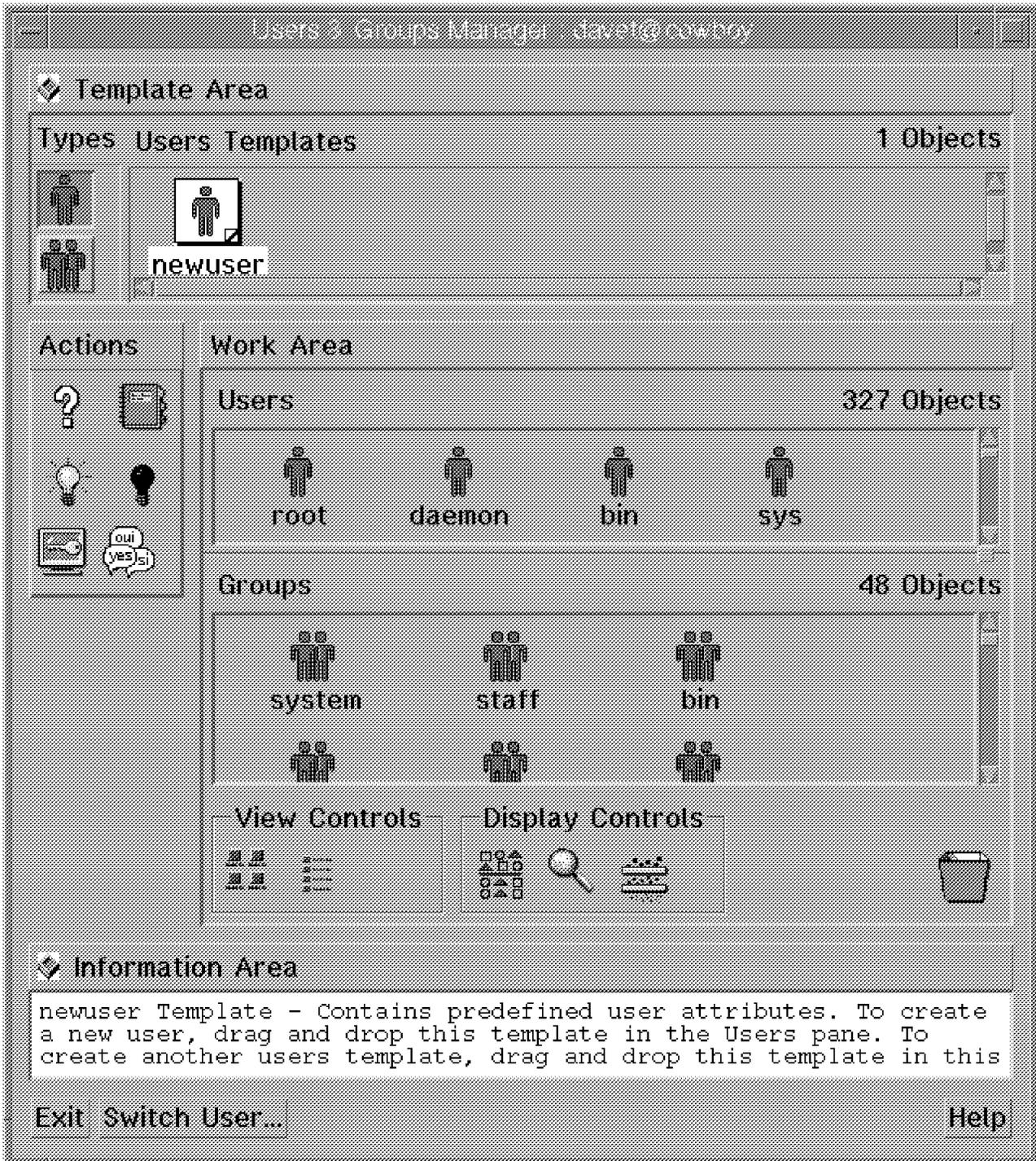


Figure 44. Users and Group Manager Window

## AIX Groups for InfoPrint

AIX assigns users to groups in order to provide a level of access to files between completely public and completely private. You can set file permissions so that only the file owner can access the file, so that all users in the same group as the file owner can access it, or so that everyone can access it.

When you install InfoPrint without DCE, InfoPrint grants permission to issue the InfoPrint commands to the following AIX groups:

- system** Users in this group can issue all InfoPrint commands by default.
- printq** Users in this group can issue most InfoPrint commands by default. They cannot create or delete InfoPrint objects, except jobs; and they cannot clean all the jobs from a server, queue, or destination.

**Note:** If you install InfoPrint with DCE, all users can issue the commands because DCE protects the InfoPrint objects instead.

The following AIX groups are created if you install InfoPrint Library:

- libwrite** Users in this group can archive files to the library and retrieve files from the library.
- libuser** Users in this group can archive files to the library and retrieve and delete files from the library.
- libadmin** Users in this group can archive files to the library and retrieve and delete files from the library.
- libread** Users in this group can only retrieve files from the library.

## Creating a Group

To create a group:

1. If the Users Templates area is displayed, select the **group template type** icon located in the Template area. The Groups Templates area replaces the Users Templates area.
2. Select the **newgroups** icon located in the Groups Templates area and drag it into the Groups Work Area. You will be prompted to provide a name and additional optional information for the new group.

## Adding a User to a Group

To add a user to an AIX group, drag and drop the user icon onto the group icon.

## Changing a Password

Drag the **Password** icon onto the user icon representing the account you want to change.

The **Password** action displays a dialog window for you to set or change a user's password. Because a password is known only by the account user and the system, you must know the user's password to change a user's password.

You are prompted to enter the new password and then enter the new password again. A system message signals that the password has been changed successfully. The password is changed immediately in the user database files and takes effect the next time the user logs in.

**Notes:**

1. Changing the password while a user is logged in does not affect the user's current session and processes.
2. If you are the root user when you change a user's password, the system sets the **ADMCHG** flag on the password so the user is forced to change the password the next time they log in.

---

## Working with InfoPrint Command Permissions

For InfoPrint installations without DCE, InfoPrint provides a set of files that control base permissions for who can perform various InfoPrint operations. This section describes the files, the operations they control, and how you can modify the command permissions.

### Where Are the Files Controlling InfoPrint Command Permissions Installed?

The files for InfoPrint commands are stored in the `/var/pddir/default_cell/acl` directory. Figure 45 shows the list of files and the permission settings for each InfoPrint command. The read permission bit (**r**) controls who can issue the command.

-rw-r-----	1	root	system	0	Jun 10 11:22	pdclean
-rw-r-----	1	root	system	0	Jun 10 11:22	pdcreate
-rw-r-----	1	root	system	0	Jun 10 11:22	pddelete
-rw-r-----	1	root	printq	0	Jun 10 11:22	pddisable
-rw-r-----	1	root	printq	0	Jun 10 11:22	pdenable
-rw-r--r--	1	root	printq	0	Jun 10 11:22	pdls
-rw-r--r--	1	root	printq	0	Jun 10 11:22	pdmod
-rw-r-----	1	root	printq	0	Jun 10 11:22	pdpause
-rw-r--r--	1	root	printq	0	Jun 10 11:22	pdpr
-rw-r-----	1	root	printq	0	Jun 10 11:22	pdpromote
-rw-r--r--	1	root	printq	0	Jun 10 11:22	pdq
-rw-r-----	1	root	printq	0	Jun 10 11:22	pdreorder
-rw-r-----	1	root	printq	0	Jun 10 11:22	pdresubmit
-rw-r-----	1	root	printq	0	Jun 10 11:22	pdresume
-rw-r--r--	1	root	printq	0	Jun 10 11:22	pdrm
-rw-r-----	1	root	printq	0	Jun 10 11:22	pdset
-rw-r-----	1	root	printq	0	Jun 10 11:22	pdshutdown
-rw-r-----	1	root	printq	0	Jun 10 11:22	pdspace

Figure 45. InfoPrint Commands Access Control List

Figure 45 shows that **root** is the owner of all commands and that, depending on the command, members of the **system** and **printq** groups have permission to issue the commands. To use the default base permissions set by InfoPrint, InfoPrint administrators should belong to the **system** group and InfoPrint operators should belong to the **printq** group. Also, job submitters can perform five InfoPrint operations, as shown by the **r** permission bits in the “others” column.

**Note:** For information about InfoPrint commands, see *IBM InfoPrint Manager for AIX: Reference* or the command man pages.

You would use the **chmod** AIX command to change the permission settings at the user, group, or others level. See the AIX *Command Reference* or the **chmod** man page for more information.

## Changing Command Permissions

You can change permissions on any InfoPrint command using the AIX **chmod** command. You can also use the AIX **chown** command to change the group that can perform certain InfoPrint operations.

### Changing Permissions for a Single Command

In this example, you want to change the existing permissions on the **pdshutdown** command so that members of the **printq** group (operators) cannot shut down servers or actual destinations. To make this change:

1. Change to the **/var/pddir/default\_cell/acl** directory.
2. Ensure you are logged in as **root**.
3. Issue this command:  

```
chmod g-r pdshutdown
```
4. Verify the change by issuing this command:  

```
ls -l pdshutdown
```

Now only those with **root** authority can shut down servers and actual destinations.

### Providing Access to All Commands

In this example, you want to give InfoPrint operators, who are members of the **printq** group, permission to perform all InfoPrint operations but still restrict other users (job submitters) to their five default operations. To make this change:

1. Change to the **/var/pddir/default\_cell/acl** directory.
2. Ensure you are logged in as **root**.
3. Issue this command:  

```
chgrp printq *
```
4. Verify the change by issuing this command:  

```
ls -l *
```

Now any member of the **printq** group can perform all InfoPrint operations. None of the permissions for other users where changed.

### Removing Access to All Commands

In this example, you want to restrict all InfoPrint operations so that only people with **root** authority can perform them. To make this change:

1. Change to the directory **/var/pddir/default\_cell/acl**.
2. Ensure you are logged in as **root**.
3. Issue this command:  

```
chmod og-r
```

Now only users logged in as **root** can perform InfoPrint operations.

---

## Managing InfoPrint Security with DCE

Distributed Computing Environment (DCE) is an application that allows the secure use and administration of distributed applications, such as InfoPrint. Managing DCE security is similar to managing AIX security. As a DCE administrator, you create *groups* that have certain permissions related to InfoPrint objects. When logged into DCE, each user who has an account with a group has the permissions for the group. A DCE group that has **read**, **write**, and **delete** permission for an InfoPrint object, such as a server or a queue, is similar to an AIX group that has **read**, **write**, and **execute** permission for an AIX directory or file. Unlike AIX **write** permission, DCE **write** permission allows you to modify, but not to delete, an object.

## Determining Appropriate DCE Permissions for InfoPrint User Groups

This section discusses four categories of users who need different permissions for InfoPrint objects.

### Administrators

This group needs to create, delete, and modify the objects for which they are responsible in the printing system. They must have **read**, **write**, and **delete** permission for these objects.

### Printing system operators

This group needs to manage jobs and assist users. To manage jobs sent to an actual destination, the printing system operators must have **read** and **write** permission for the actual destination. To manage jobs that have been retained in a server, the printing system operators must have **read** and **write** permission for the server.

### Printer operators

This group loads media and other supplies into printer devices. In order to make an actual destination accurately reflect the state of its printer device, printer operators must be able to set actual destination attributes. They must have **read** and **write** permission for the actual destination.

### End users

This group needs to print, fax, and email jobs, modify their own jobs, cancel their own jobs, and query InfoPrint objects. They do not need to log into DCE to submit jobs to unrestricted logical destinations or to modify, query, or cancel those jobs. They must have **read** permission for restricted logical destinations in order to submit jobs to those logical destinations.

When you installed InfoPrint with DCE on your system, the installation created two DCE groups: **pd\_admin** and **pd\_operator**. By default, these groups have permissions for every InfoPrint object that you create. The **pd\_admin** group has **read**, **write**, and **delete** permission. The **pd\_operator** group has **read** and **write** permission.

The **pd\_admin** and **pd\_operator** groups may be sufficient for your needs. Members of these two groups can do all the administrator and operator tasks for your system.

On the other hand, you may need to create groups with different permissions. For example, if the printer operators are not the same people as the printing system

operators, you may wish to create another group with **read** and **write** permissions only for actual destinations. You may also want to create a group of users who can submit jobs to a restricted output device.

## Adding InfoPrint Administrators and Operators to the AIX `printq` Group

You must add all InfoPrint administrators and operators to the AIX `printq` group. To do this, use the Users and Groups manager or the AIX System Management Interface Tool (SMIT).

To use the Users and Groups manager, see “Working with AIX Users, Groups, and Passwords” on page 213.

To use SMIT:

1. On the AIX command line, enter:

```
smit chgroup
```

The SMIT Change Group Attributes panel is displayed.

2. Type **printq** in the Group name field and press Enter.
3. Type the user IDs of the administrators and operators, separated by commas, in the User List field and press Enter.
4. Exit from SMIT.

## Creating a DCE Group

To create a DCE group:

1. Log into DCE as the cell administrator:

```
dce_login cell_admin
```

2. To start the AIX System Management Interface Tool and go directly to the panel for creating a DCE group, enter:

```
smit mkdcegroup
```

The Add a Group Name panel is displayed.

3. In the **Group NAME** field, enter the name of the DCE group you want to add, for example, `203_operators`.
4. In the **FULL name** field, enter a description of the group, for example, `Printer operators for Room 203`.
5. Select **Do**. SMIT displays a panel showing the progress of your command. When the command is successful, the running man icon at the top right corner of the panel stands with his arms up.
6. Select **Done**.

## Creating DCE Identities for Users

Before you can give a person an account with a DCE group, you must first create a DCE identity, or *principal*, for the person. Like an AIX user ID, a DCE principal has a login name and a user identification number (UID). Use the same login name and UID for DCE as for AIX.

To create a DCE principal for a user whose login name is `lkbyrd` and whose UID is `975`:

1. Log into DCE as the cell administrator.
2. Enter:
 

```
smit mkdceprinc
```

 The Add a Principal panel is displayed.
3. In the **Principal NAME** field, enter the login name of the user you want to add, for example, lkbyrd.
4. In the **Principal ID** field, enter the UID number, for example, 975.
5. In the **Full NAME** field, enter the user's name and any other appropriate information, such as the user's telephone number.
6. Select **Do**. SMIT displays a panel showing the progress of your command. When the command is successful, the running man icon at the top right corner of the panel stands with his arms up.
7. Select **Done**.

## Giving a User a Primary Account with a DCE Group

After you have created a DCE principal for a user, you must give the principal a primary account with a DCE group. To do this:

1. Log into DCE as the cell administrator.
2. Enter:
 

```
smit mkdceacct
```

 A panel listing types of DCE accounts is displayed.
3. Select **user**. The Add an Account panel is displayed. You may have to use the scroll bar on the right side of the window to display all the fields.
4. In the **Principal to create account for** field, enter the DCE login name of the user you want to add, for example, lkbyrd.
5. In the **LOGIN user?** field, leave the default value of **yes**.
6. In the **GROUP to associate with this account** field, enter the name of the primary group to which you want to add this user, for example, pd\_operator.
7. In the **ORGANIZATION to associate with this account** field, enter the name of your organization as you specified it when you installed DCE.
8. In the **HOME directory** field, you can enter the user's AIX home directory for your own information. DCE does not use this field.
9. In the **HOME directory** field, you can enter the user's AIX home directory for your own information. DCE does not use this field.
10. In the **ACCOUNT information** field, you can enter miscellaneous information about the account. DCE does not use this field.
11. In the **Require user to CHANGE PASSWORD on first login** field, leave the default value of **yes** if you want DCE to prompt the user to select a new password when he or she first logs into DCE. If you select **no**, the user can continue to use the password you assign or change it at any time.
12. In the **Maximum ticket LIFETIME** field, enter a value at least as large as the longest time that this user will leave the InfoPrint administrator's GUI running. If

the ticket expires while the InfoPrint administrator's GUI is running, the user must log into DCE again to perform administrative tasks.

**Note:** The maximum ticket lifetime for a user cannot be longer than the maximum lifetime specified in the DCE authenticated policies. To change this maximum, go to the SMIT DCE Security and Administration panel and select **Registry Policies and Properties**, then **Authenticated Policies and Properties**, or enter **smit Isdceseccert** from the AIX command line.

13. Accept or modify the default values for the other fields in the window.
14. Select **Do**. DCE prompts you to enter a password for the new account.
15. Enter an appropriate password and press ENTER. DCE prompts you to enter your own password.
16. Enter the cell administrator's password and press ENTER.
17. When the command is complete, press ENTER.

## Making a User a Member of Additional DCE Groups

After you have created a DCE principal for a user and given the principal a primary account with a DCE group, you can add the principal to as many other DCE groups as you wish. For example, to add user 1kbyrd to the 203\_0operators group:

1. Log into DCE as the cell administrator.
2. Enter:  

```
smit mkdcegroupmem
```

The Add Members to a Group panel is displayed.
3. In the **Group NAME** field, enter the name of the group to which you want to add the user, for example, 203\_0operators.
4. In the **PRINCIPALS to add** field, enter the login name of the user you want to make a member of the group, for example, 1kbyrd.
5. Select **Do**. SMIT displays a panel showing the progress of your command. When the command is successful, the running man icon at the top right corner of the panel stands with his arms up.
6. Select **Done**.

## Changing DCE Permissions for InfoPrint Objects

When you have created DCE groups to fit your requirements, you must give the groups appropriate permissions to work with DCE objects. You can use the InfoPrint SMIT administrator's interface to change object permissions.

To change the permissions for an InfoPrint server, follow these steps:

1. Log into DCE as the cell administrator:  

```
dce_login cell_admin
```
2. On the AIX command line, enter one of the following commands:  

```
smit iprudce_security
```

or

```
smitty iprudce_security
```

The SMIT Security panel is displayed.

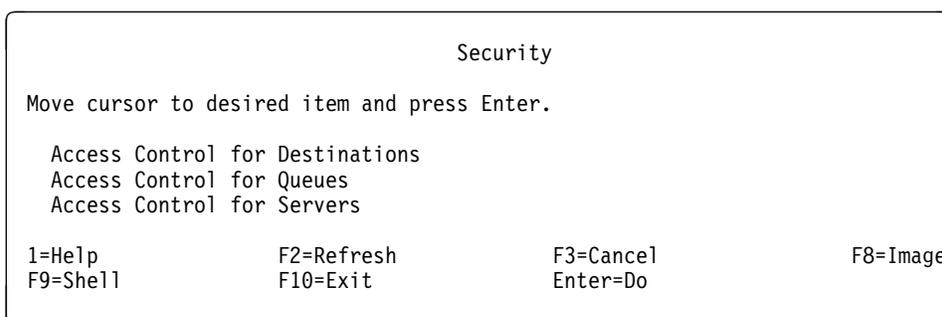


Figure 46. SMIT Security Panel

3. Select **Access Control for Servers**. The Access Control for Servers panel is displayed.

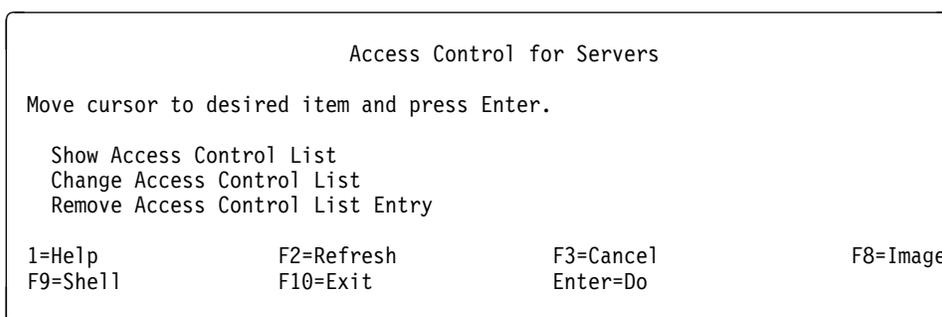


Figure 47. SMIT Access Control for Servers Panel

4. Select **Change Access Control List**. A list of servers is displayed.
5. Select a server name and press **Enter**. The ACL Type list is displayed.
6. Select one of the following values and press **Enter**:

<b>user_obj</b>	Permissions for the owner of the object.
<b>user</b>	Permissions for a specific DCE user defined in this namespace.
<b>group</b>	Permissions for a specific DCE group defined in this namespace.
<b>other_obj</b>	Permissions for the group to which the owner of the object belongs.
<b>any_other</b>	Default permissions for DCE users and groups defined in this namespace.
<b>foreign_user</b>	Permissions for a specific user defined in another DCE namespace.
<b>foreign_group</b>	Permissions for a specific group defined in another DCE namespace.
<b>foreign_other</b>	Default permissions for DCE users and groups defined in other DCE namespaces.
<b>unauthenticated</b>	Permissions for users who are not logged into DCE.

The Change Access Control List panel is displayed. Figure 48 on page 223 shows the panel that is displayed when you select **group**.

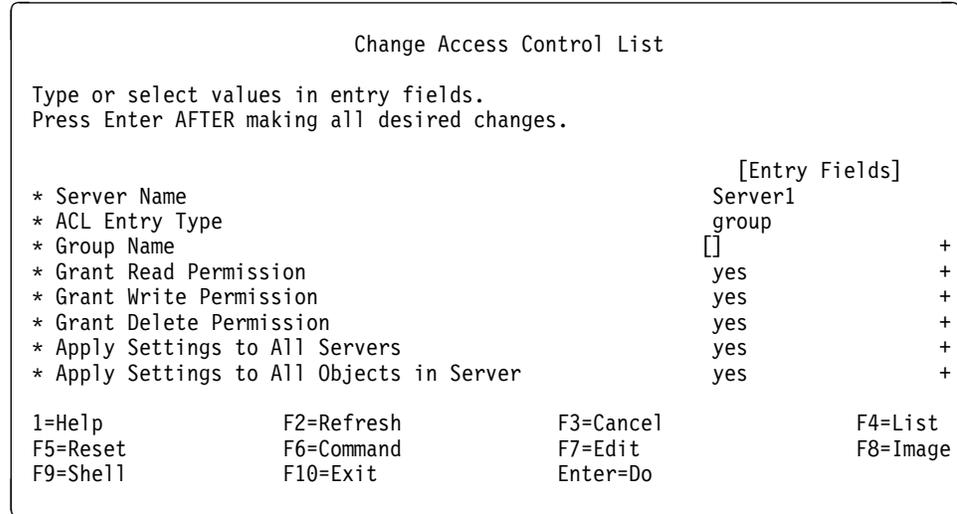


Figure 48. SMIT Change Access Control List Panel

7. Fill in the panel and press **Enter**.

Notice that the last lines of the Change Access Control List panel allow you to *propagate* the permissions you set here to other objects. If you give the 203\_operators group **read** and **write** permission for this server, the 203\_operators group will have **read** and **write** permission for any logical destinations, actual destinations, or queues that you later create in the server.

Propagation only works for entries that have not yet been created. If you create a logical destination, then change the permissions for the server and apply your changes to all objects in the server, the existing logical destination will not inherit the changes.

## Adding Other DCE Namespaces to Your InfoPrint Environment

Part of DCE is a directory tree called the DCE *namespace*. Installing InfoPrint creates a branch of this directory tree where InfoPrint stores its security information. This is your InfoPrint cell directory structure.

You can set up your InfoPrint environment so that clients in another DCE namespace can communicate with the InfoPrint server. Clients in other namespaces can issue only the **pdpr**, **pdls**, and **pdq** commands.

To add a DCE namespace to the InfoPrint environment, follow these steps:

1. Log into DCE as the cell administrator:

```
dce_login cell_admin
```

2. On the AIX command line, enter one of the following commands:

```
smit iprudce_ns
```

or

```
smit iprudce_ns
```

The SMIT Name Spaces panel is displayed.

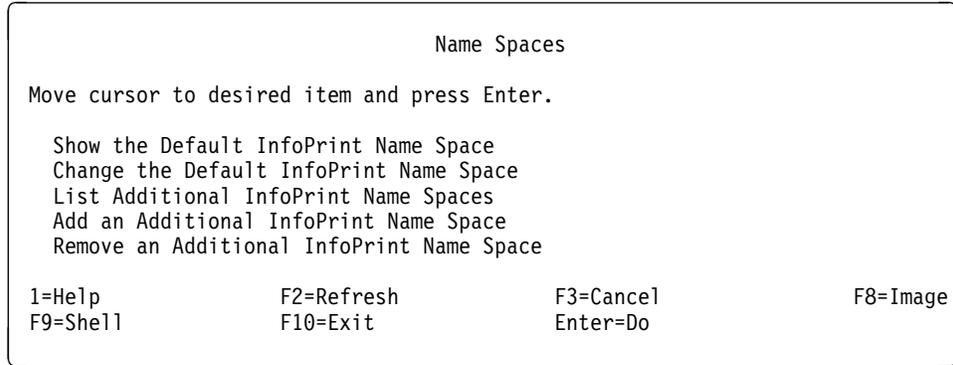


Figure 49. SMIT Name Spaces Panel

3. Select **Add an Additional InfoPrint Name Space**. The Add an Additional InfoPrint Name Space panel is displayed.

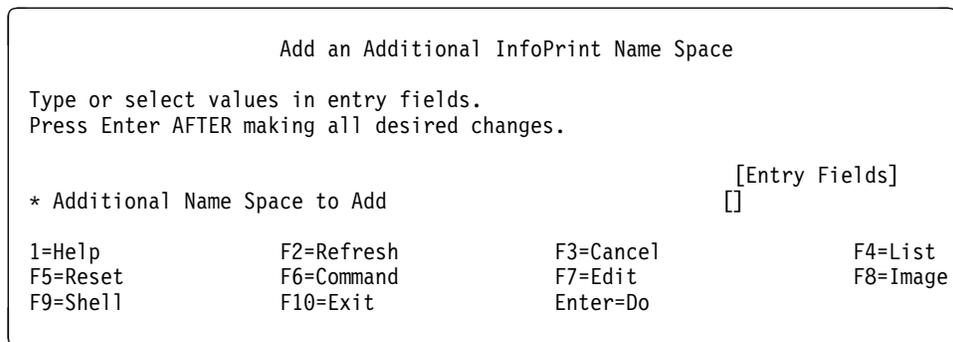


Figure 50. SMIT Add an Additional InfoPrint Name Space Panel

4. Enter the name of the namespace and press **Enter**.

## Ignoring Network Interfaces

You can also use DCE to configure InfoPrint so that it ignores selected network interfaces. Follow these steps:

1. Log into DCE as the cell administrator:

```
dce_login cell_admin
```

2. On the AIX command line, enter one of the following commands:

```
smit iprudce_interfaces
```

or

```
smitty iprudce_interfaces
```

The SMIT Network Interfaces panel is displayed.

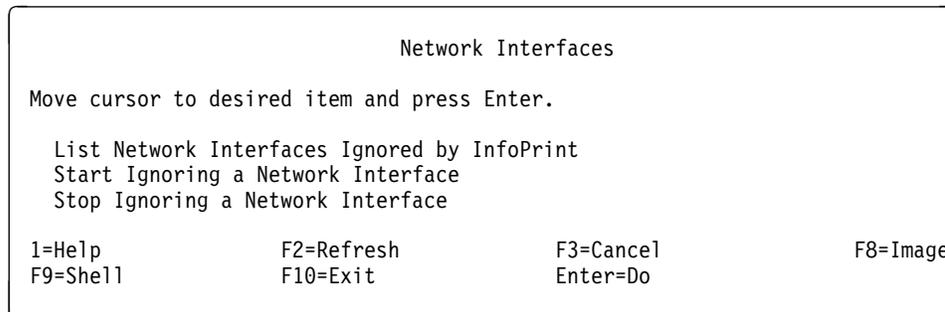


Figure 51. SMIT Network Interfaces Panel

3. Select **Start Ignoring a Network Interface**. The Start Ignoring a Network Interface panel is displayed.

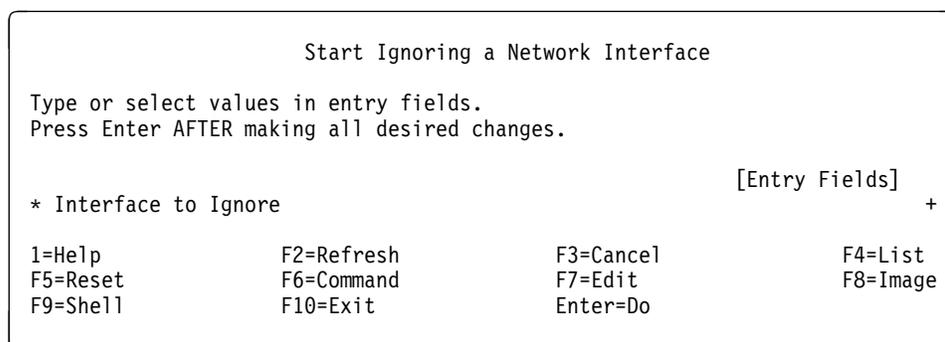


Figure 52. SMIT Start Ignoring a Network Interface Panel

4. Press **F4** to display a list of network interfaces.
5. Select an interface and press **Enter**.

## Examples

The examples in this section show you how to manage InfoPrint security by creating DCE groups and granting permissions for specific objects to these groups.

### Creating Two Printer Operator Groups

Printer operators are responsible for supporting and maintaining printer devices. This includes such tasks as replacing toner, loading media, and making the printers available for large and small jobs at different times of the day.

Printer operators do not need all the permissions of the default **pd\_operator** group. The **pd\_operator** group has **read** and **write** permission for all InfoPrint objects. Printer operators need **read** and **write** permission only for the actual destinations that represent printer devices in their care.

When you plan printer operator groups, first decide for which actual destinations each group needs **read** and **write** permission. This is easiest to do before you create the actual destinations. If the same printer operator group needs permission for all the actual destinations in a server, you can give the printer operator group **read** and **write** permission for the server's DCE **printers** directory. The group will automatically have **read** and **write** permission for all the actual destinations that you later create in the server. If you create the actual destinations before you give

the printer operator group **read** and **write** permission for the server; or if different printer operator groups need **read** and **write** permission for different actual destinations in the same server, you must assign permissions for each actual destination individually.

Suppose that you are configuring InfoPrint to manage two printer rooms. Each printer room contains several printer devices. One group of printer operators cares for all the printer devices in one room and another group of printer operators cares for all the printer devices in the other room.

1. Create dedicated servers to contain the actual destinations representing printer devices in each room. One server can support up to five actual destinations. See Chapter 6, “Creating and Managing Servers” on page 65 for instructions.
2. Create a printer operator group for each room. See “Creating a DCE Group” on page 219 for instructions.
3. Give each printer operator group **read** and **write** permission for the DCE **printers** directory of each server for the group's printer room. See “Changing DCE Permissions for InfoPrint Objects” on page 221 for instructions.
4. For each printer device, create an actual destination in a server dedicated to the printer room where the printer device is located. See Chapter 8, “Creating and Managing Actual Destinations” on page 99 for instructions.
5. Give each printer operator membership in the appropriate printer operator group. See “Creating DCE Identities for Users” on page 219 for instructions.

### Restricting All Access to an Output Device

You may need to restrict all use of an output device to certain users. For example, you can restrict all use of a fax machine to salespeople who need to fax information to customers. To do this:

1. In the advanced InfoPrint administrator's GUI, open the attributes notebook for the logical destination that sends jobs to the actual destination representing the output device. Set the **Authorize Jobs** field on the **Jobs/Documents** tab to **yes**. Now only users who are logged into DCE can submit jobs to this logical destination.
2. Delete the permissions for the **any\_other** and **unauthenticated** groups from the access control list (ACL) for the logical destination. Now only users who have explicit **read** permission for this logical destination can submit jobs to it.
3. Create a DCE group with **read** permission for the logical destination.
4. Give each authorized user membership in the new DCE group.

### Restricting Functions of an Output Device

You may need to restrict certain functions of an actual destination to certain users. For example, you can restrict one-sided printing to editors, while allowing everyone else to print two-sided jobs on the same printers. To do this:

1. Create two logical destinations that send jobs to the actual destination representing the output device. Configure one logical destination to support all the functions of the output device and the other to support only the functions that everyone is permitted to use. For example, to restrict one-sided printing, create one logical destination with values of **1** and **2** for the **Sides Supported** field and another with a value of **2**.

2. Use the process in “Restricting All Access to an Output Device” to restrict all access to the logical destination that supports all the functions of the output device.



---

## Chapter 20. Setting InfoPrint and AIX Environment Variables

InfoPrint uses environment variables:

- To define its environment within the AIX system
- To define the objects managed by and options available in the InfoPrint SMIT operator's GUI
- To define processing options for the TIFF, JPEG, and GIF transform programs

Environment variables are strings that have a name and a value in the form of **NAME=value**. Refer to *IBM InfoPrint Manager for AIX: Reference* for a complete list of InfoPrint environment variables and AIX environment variables that affect InfoPrint.

---

### Preparing to Work with InfoPrint and AIX Environment Variables

Read through the following topics to become familiar with environment-variable structure and terms.

#### Where Are Environment Variables Found?

InfoPrint and AIX environment variables can be found in the following files:

##### **InfoPrint SMIT operator's GUI environment file**

The name of this file is the value of the **PPO\_DEFAULT\_ENV** environment variable, by default, **/usr/lpp/pd/bin/ppo.env**. It contains environment variables that define values used by the InfoPrint SMIT operator's GUI.

##### **/etc/environment**

This file contains environment variables that apply to all sessions for all users on a given AIX system.

**.profile** The **.profile** file in a user's home directory contains environment variables that apply to all the user's AIX sessions. Values in this file override values in **/etc/environment**.

#### How Are Environment Variables Set?

You can use the following methods to set or change values for environment variables:

- If you are an administrator, you can set AIX environment variables and InfoPrint environment variables in the **/etc/environment** file or in the InfoPrint SMIT operator's GUI environment file by using an AIX editor.

Settings in these files apply to all sessions for all users, unless users override them through their **.profile** files or from the command line.

- You can modify your **.profile** file in your home directory by using an AIX editor. Settings in the **.profile** file override settings in the **/etc/environment** file. These settings apply only to you and are in effect for all AIX sessions, unless you override the settings from the command line.
- You can enter one of the following commands on the command line to set environment variables for a single AIX session:

- In the Korn shell or the Bourne shell, use the **export** command.
- In the C shell, use the **setenv** command.

Command line settings override settings in the **/etc/environment** file and **.profile** file. These settings apply only to you and are in effect only until you exit the AIX session from which you issued the command.

You cannot change the environment of a running process. If you change the value of an environment variable, you must restart any process that was started before the change if the change is to take effect for that process. For example, an InfoPrint server is a process. If you change the **/etc/environment** file, you must stop and start the server again for the change to take effect.

## What Restrictions Apply?

The following restrictions apply when you create or define values for environment variables:

- Ensure that newly created environment variables do not conflict with standard variables such as, **MAIL**, **PS1**, **PS2**, and **IFS**. Refer to AIX documentation for further information.
- Ensure that the information in the **/etc/environment** file is in the **NAME=value** format. The **/etc/environment** file is not a shell script and does not accept data in any format other than the **NAME=value** format.

- Do not use variables to represent values in the **/etc/environment** file. For example:

```
PATH=$PATH:/path1:/path2
```

is not a valid entry in the **/etc/environment** file. Instead of **\$PATH**, enter a full path name.

- The format in which you specify the value for any variable that defines directory paths determines whether your value is appended to the current value or overrides it.

- The following format overrides the current value:

```
export PATH=/path1:/path2
```

If you do not include the InfoPrint directories in the value you specify, you will not have automatic access to InfoPrint.

- The following format appends your value to the current value:

```
export PATH=$PATH:/path1:/path2
```

---

## Querying Environment Variables

You can use one of the following AIX commands to query the value of an environment variable:

- In any shell, use the **echo** command.
- In the Korn shell, use the **print** command.

For example, to determine the default logical printer, enter:

```
echo $PDPRINTER
```

**Note:** InfoPrint uses default values for some InfoPrint environment variables without setting the environment variable. When you query those

environment variables and you have not set a value, the response is a blank line.

To query all environment variables that have values set, enter:

```
env
```

---

## Editing the `/etc/environment` File

To set an environment variable in the `/etc/environment` file, you need to edit the file with an AIX editor. See “How Are Environment Variables Set?” on page 229 and “What Restrictions Apply?” on page 230 for additional information.

The following example shows how to set the `PDPRINTER` environment variable in the `/etc/environment` file, using the `vi` editor.

1. Enter the following command to change to the `/etc` directory:

```
cd /etc
```

2. Enter the following command:

```
vi environment
```

A typical `/etc/environment` file contains lines similar to the following:

```
NLSPATH=/usr/lib/nls/msg/%L/%N:/usr/lib/nls/msg/%L/%N.cat  
LANG=en_US
```

3. Insert or modify the following line in the `/etc/environment` file:

```
PDPRINTER=LogicalDestinationName
```

where *LogicalDestinationName* is the name of the logical printer you want to set as the default logical printer for all users.

4. Save the change in plain text format and exit from the editor.

5. Make the change effective by entering the command:

```
./etc/environment
```

6. Verify the change by entering the command:

```
echo $PDPRINTER
```

The logical destination name you entered displays.

---

## Editing a `.profile` File

To set an environment variable in the `.profile` file, you need to edit the file with an AIX editor. See “What Restrictions Apply?” on page 230 for information on restrictions.

The following example shows how to set the `PDPRINTER` environment variable in your `.profile` file, using the `vi` editor.

1. Enter the following command to change to your home directory:

```
cd
```

2. Enter the following command:

```
vi .profile
```

3. A typical **.profile** file contains lines similar to the following:

```
PATH=.:$HOME/bin:/bin:/usr/bin:/etc:/usr/ucb:/usr/bin/X11:tools/  
usr/bin:/usr/lpp/cmvc/bin:/usr/0V/bin:/usr/local/tools/rs6/bin:/usr  
/local/tools/rs6:/usr/dt/bin  
  
export PATH  
export EDITOR=vi
```

4. Insert or modify the following line in the **.profile** file:

```
export PDPRINTER=LogicalDestinationName
```

where *LogicalDestinationName* is the name of the logical printer you want to set as your default.

5. Save the change in plain text format and exit from the editor.

6. Make the change effective by entering the following command:

```
. .profile
```

7. Verify the change by entering the command:

```
echo $PDPRINTER
```

The logical printer name you entered displays.

---

## Setting an Environment Variable from the Command Line

To set the value of the environment variable **PDPRINTER** to `Printer3` for a single AIX session, enter one of the following commands:

- In the Korn shell or the Bourne shell, enter:

```
export PDPRINTER=Printer3
```

- In the C shell, enter:

```
setenv PDPRINTER Printer3
```

---

## Verifying the Setting of Environment Variables

You can verify the setting of environment variables that InfoPrint set or appended during InfoPrint installation by doing the following procedures.

### Verifying the Setting of the PATH Environment Variable

During the installation process, InfoPrint updates the AIX **PATH** environment variable to include the directory location of the InfoPrint executable files; InfoPrint appends **/usr/lpp/pd/bin** and **/usr/lpp/psf/bin** to the paths already specified.

To verify that the **PATH** environment variable is set and contains **/usr/lpp/pd/bin** and **/usr/lpp/psf/bin**, enter the command:

```
echo $PATH
```

## Verifying the Setting of the PDBASE Environment Variable

During the installation process, InfoPrint adds the InfoPrint **PDBASE** environment variable to the **/etc/environment** file and specifies **/var/pd** as the working directory where InfoPrint stores its object code.

To verify that the **PDBASE** environment variable is set and contains **/var/pd**, enter the command:

```
echo $PDBASE
```

## Verifying the Setting of the XBMLANGPATH Environment Variable

During the installation process, InfoPrint appends **/usr/lpp/pd/bitmaps/%B** to the value of this variable. The **/usr/lpp/pd/bitmaps/%B** directory contains icons for the InfoPrint administrator's GUI.

To verify that the **XBMLANGPATH** environment variable is set and contains **/usr/lpp/pd/bitmaps/%B**, enter the command:

```
echo $XBMLANGPATH
```

## Verifying the Setting of the MANPATH Environment Variable

During the installation process, InfoPrint appends **:/usr/share/man/\$LANG** to the value of this variable. The **:/usr/share/man/\$LANG** directory is the location of the **cat7** subdirectory, which contains the InfoPrint man pages. **\$LANG** is the locale.

To verify that the **MANPATH** environment variable is set and contains **:/usr/share/man/\$LANG**, enter the command:

```
echo $MANPATH
```



---

## Chapter 21. Monitoring Space on Your AIX System

AIX allocates space for the printing and monitoring tasks required in an InfoPrint environment through different file systems. A *file system* is a structure of parent directories, subdirectories, and files. A *directory* is a unique type of file that contains only the information need to access files or other directories. Directories contain files, subdirectories, or a combination of both. The directory containing a subdirectory is the parent directory.

On occasion, you might have to ensure that work files used in printing jobs do not consume too much space on your file systems. For example, PostScript or TIFF job tickets that are ripped for printing might leave work files in the **/var/psf** file system. Over time, these files can reduce system performance and eventually stop the system. Develop a maintenance strategy with your IBM Printing Systems Company service representative.

---

### Using the Disk Usage Tool

The **Disk Usage** icon on the front panel of the CDE allows you to display information about total space and available space on a file system. To find this icon:

- In a basic InfoPrint installation, click on the **User Tools** icon (the paper and pencil) to open a subpanel.
- In an advanced or distributed InfoPrint installation, click on the **Application Manager** icon (the file drawer containing a ruler, calculator, and pencil) to open a window. In this window, click on the **Desktop\_Tools** icon.

When you select the **Disk Usage** icon, AIX displays information for all currently mounted file systems (as in this example):

Filesystem	512-blocks	Free	%Used	Iused	%Iused	Mounted on
/dev/hd4	16384	7024	58%	1069	27%	/
/dev/hd2	1359872	493128	64%	17071	11%	/usr
/dev/hd9var	16384	13528	18%	305	15%	/var
/dev/hd3	32768	30984	6%	87	3%	/tmp
/dev/hd1	16384	15368	7%	136	7%	/home
/dev/lv00	1015808	983440	4%	66	1%	/var/psf
/dev/lv01	2015232	1951888	4%	16	1%	/var/psf/segments
/dev/lv02	3014656	2919936	4%	17	1%	/var/pd

The first column displays AIX file systems that are also directories. These directories are all subdirectories of the **/dev** parent directory, which means that they contain special files for I/O devices. The most important column is the fourth from the left that displays the percentage of each file system used.

---

### Using the df Command

You can see how your AIX system uses space in a single file system by using the **df** command. To display the space on the file system where your current directory resides, enter the following command on the AIX command line:

```
df .
```

AIX displays the following:

Filesystem	512-blocks	Free	%Used	Iused	%Iused	Mounted on
/dev/hd1	16384	15368	7%	136	7%	/home

---

## File Systems and Directories to Clean Up

Certain file systems and directories tend to fill up. You should check and, if necessary, clean up these file systems and directories regularly.

### File Systems Used by All InfoPrint Installations

If either the **/var/psf** or the **/var/pd** file system is more than 85% full, you should contact your IBM service representative to determine whether you need to clean out files or modify any configuration changes. When InfoPrint processes large jobs, it is not uncommon for the **/var/psf/segments** file system to grow to over 90% full.

**Note:** When deciding whether or not to delete files, create a new file system, or change your configuration, do not modify the logical volume (**/dev/lv01**) that is mounted on the **/var/psf/segments** file system. This file system is used by InfoPrint when printing jobs and monitors its own system use.

### Directories Used by InfoColor 70 Printers

If you have any InfoColor 70 printers, you will occasionally have to clean out files from the following directories:

**Directory On AIX System**

**/var/pd/HostName**

System where the InfoPrint server is installed

**/custdisk1/Pool**

System where the InfoColor 70 is attached

**/custdisk1/HotFolder**

System where the InfoColor 70 is attached

**/custdisk1/IPAddress**

All RIP servers, including the system where the InfoColor 70 is attached

---

## Chapter 22. Viewing Accounting and Auditing Data about the Job (PSF, Fax, and Email DSS Only)

The accounting and auditing user-exit programs record data about jobs. For each job printed, InfoPrint activates the user-exit programs specified by the actual destination's **accounting-log** and **audit-log** attributes *before* processing the print job's trailer page. More than one InfoPrint actual destination can use the same user-exit program to write into the same log file.

This section contains the following topics:

- What do the accounting and audit user-exits provide?
- How do you format accounting and audit data for viewing?
- How do you manage the contents of the accounting and audit data files?

---

### What Do the Accounting and Auditing User-Exits Provide?

The accounting and audit user-exit programs record statistical data on jobs processed by InfoPrint actual destinations. Table 6 shows the most common accounting and audit user-exit programs, the files where they record data, and the types of data that they record.

<b>Program</b>	<b>Log File</b>	<b>Records</b>
<b>/usr/lpp/psf/bin/ainuxaccp</b>	<b>/var/psf/podaccount.log</b>	Job submitter, job ID, actual destination, pages per job, pages per actual destination, pages per output bin, start date, start time, copies per job
<b>/usr/lpp/psf/bin/ainacclog</b>	<b>/var/psf/accounting.log</b>	Job submitter, job name, actual destination, pages per job, pages per actual destination, jobs per output bin, start date, start time, fonts, resident fonts, overlays
<b>/usr/lpp/psf/bin/ainaudlog</b>	<b>/var/psf/audit.log</b>	Job submitter, job name, actual destination, pages per job, pages per actual destination, jobs per output bin, start date, start time, fonts, resident fonts, overlays

**Note:** **/usr/lpp/psf/bin/ainacclog** and **/usr/lpp/psf/bin/ainaudlog** record the same information in different files.

This information is specified in flat ASCII format, with a single line for each job that is processed. You can use this information to determine billing procedures, to assess the workload of different output devices, or to determine how resources are used at your installation.

---

### How Do You Format Accounting and Audit Data for Viewing?

To view this data, you can use one of the following executable reporting utilities that are provided with InfoPrint:

**ainupod1** Reports accounting data stored in **podaccount.log**, sorted by job submitter.

**ainupod2** Reports accounting data stored in **podaccount.log**, sorted by job ID.

- ainupod3** Reports times and pages printed by the job submitter from **podaccount.log**.
- ainurpt1** Reports accounting data stored in **accounting.log**, sorted by actual destination.
- ainurpt2** Reports accounting data stored in **accounting.log**, sorted by job submitter.
- ainurpt3** Reports times and pages printed by the job submitter from **accounting.log**.
- ainurpt4** Reports audit data stored in **audit.log**, sorted by actual destination.
- ainurpt5** Reports audit data stored in **audit.log**, sorted by job submitter.
- ainurpt6** Reports times and pages printed by the job submitter from **audit.log**.

For examples of using these utilities, see *IBM InfoPrint Manager for AIX: Reference* or the man pages for the utilities.

---

## How Do You Manage the Contents of the Accounting Data File?

An installation with a regular schedule of printing jobs will accumulate accounting and audit data that must be managed carefully to avoid potential performance problems. Periodically, the log files must be either purged or moved to a different directory. If you do not perform either of these tasks, your installation will run out of space on the file system, preventing you from printing any more jobs. To avoid this problem, you should purge or move the accounting and audit logs as part of your system maintenance.

To retain a record of accounting and audit data, you need to move the existing log files to a new directory. Use the following procedure:

1. Go to the directory where the log file, for example, **podaccount.log**, resides by specifying:

```
cd /var/psf
```

2. Move the **podaccount.log** file to a directory named **1quarter96** by specifying:

```
mv podaccount.log /1quarter96
```

This command moves the existing file to the new directory and removes it from the **/var/psf** directory. The next time a job is submitted for printing from InfoPrint Submit, InfoPrint will create a new **podaccount.log** file in the **/var/psf** directory and write a single line of data for each job.

IBM recommends you move the data to another file system rather than deleting it from the system. This allows you to store accounting data and delete it from the system when you no longer need to refer to it. If you want to delete the **podaccount.log** file without storing the data in another directory,

1. Specify

```
cd /var/psf
```

This command moves you into the correct path.

2. Enter

```
rm podaccount.log
```

When the AIX command-line prompt returns, you know that the **podaccount.log** file has been deleted from the system.

3. Enter

```
ls
```

This command displays the contents of your directory for you to verify that the file has been deleted. When the next job is submitted for printing, InfoPrint creates a new **podaccount.log** file and writes the data into that file.



---

## Chapter 23. User-Exit Programs (PSF, Fax, and Email DSS Only)

This appendix describes the sample user-exit programs supplied with InfoPrint and how you can create your own user-exit programs.

---

### What Type of User Exits Does InfoPrint Support?

InfoPrint supports dynamically loaded user-exit programs. These programs are loaded with the InfoPrint executable program during initialization and are called at various points during job processing.

InfoPrint allows seven different types of user exits, and they are called in the following order by InfoPrint:

- Header (Start) page user exit
- Separator page user exit
- Accounting user exit
- Audit user exit
- Input data user exit
- Output data user exit
- Trailer (End) page user exit

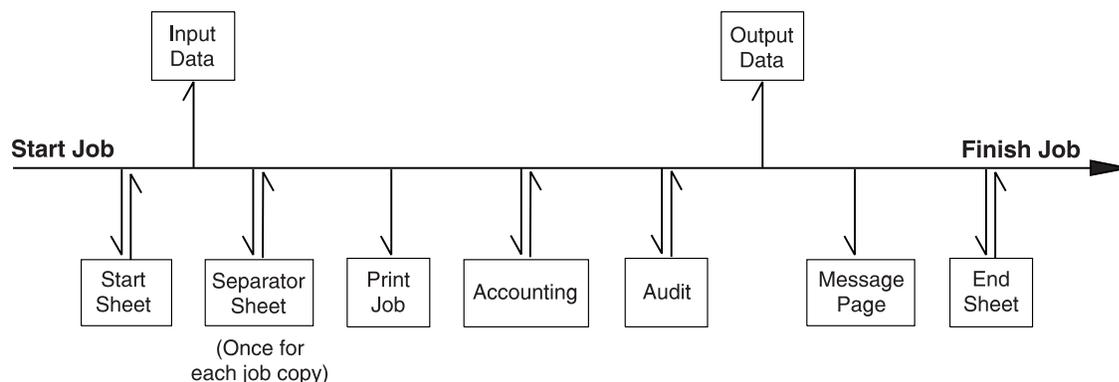


Figure 53. User Exits for InfoPrint

### What Sample User-Exit Programs are Available?

InfoPrint supplies sample user-exit programs for the header, separator, and trailer pages, and for accounting and auditing data. The sample header, separator, and trailer page user-exit programs generate Advanced Function Presentation (AFP) data stream pages. The sample accounting and auditing user-exit programs generate ASCII data in a report file format. InfoPrint also supplies sample user-exit programs for input data and output data; however, these user-exit programs do not perform any function. You can use all of these sample programs as they are or you can modify them.

If you choose to modify the existing user-exit programs, the source code for each one is located in the `/usr/lpp/psf/exits` directory. InfoPrint supplies the following sample programs:

<b>Program</b>	<b>File Name</b>
Header Page	<b>ainuxhdr.c</b>
	<b>ainuxhdr2.c</b>
	<b>ainuxhdrp.c</b>
	<b>ainuxhdrx.c</b>
	<b>pduxblkh.c</b>
Separator Page	<b>ainuxsep.c</b>
	<b>ainuxsep2.c</b>
	<b>ainuxsepp.c</b>
	<b>ainuxsepx.c</b>
	<b>pduxblks.c</b>
Trailer Page	<b>ainuxtlr.c</b>
	<b>ainuxtlr2.c</b>
	<b>ainuxtlrp.c</b>
	<b>ainuxtlrx.c</b>
	<b>pduxblkt.c</b>
Accounting	<b>ainuxacc.c</b>
	<b>ainuxacc2.c</b>
	<b>ainuxaccp.c</b>
Auditing	<b>ainuxaud.c</b>
	<b>ainuxaud2.c</b>
	<b>ainuxaudp.c</b>
Accounting Log	<b>ainacclog.c</b>
Auditing Log	<b>ainaudlog.c</b>
Input Data	<b>ainuxind.c</b>
Output Data	<b>ainuxout.c</b>

See “User-Exits Programs for Line-Data Transform” on page 256 for sample user-exit programs used with the line-data transform.

---

## Creating and Using Your Own User-Exit Programs

You can create your own user-exit program at any time; however, you must perform additional tasks to activate your program. You must have the XL C Compiler and the **bos.adt** components of the Base Application Development Toolkit of the AIX operating system installed.

### Creating Your Own User-Exit Programs

You can create your own user-exit program in one of the following ways:

- Copy one of the sample user-exit programs, rename it, and modify it using an AIX editor.
- Write your own user-exit program. You can include the variable data shown in the following sections, for example, `USERID`; but InfoPrint cannot process variable data that is not shown in this appendix.

---

## Compiling and Installing the User-Exit Program

When you finish creating your own user-exit program, you must compile the program code and then install it in the correct directory. You do this by using the AIX **make** command.

When the **make** command executes, it reads the **Makefile** file, supplied with InfoPrint, that is located in the same directory as the sample programs. The **Makefile** file contains information about the specified target files and the commands necessary to update the target files.

Before you put your user-exit program into general use at your site, you should test it first to ensure that it runs correctly. Because your user-exit program becomes part of the InfoPrint executable code, a defective user-exit program could cause problems with InfoPrint.

## Compile and Install Your User-Exit Program

To compile and install your user-exit program, follow these steps:

**Note:** You must have **root** authority to use the **make** command in this directory.

1. If you already have an existing executable user-exit program in the **/usr/lpp/psf/bin** directory for the user-exit program you are adding, perform the following steps first; otherwise, go to step 2.
  - a. Disable all the logical destinations associated with the queues that are to receive jobs that will use the new user-exit program. See Chapter 9, “Creating and Managing Queues” on page 115 for the procedure to do this if you do not know.
  - b. Delete the executable user-exit program from the **/usr/lpp/psf/bin** directory.
2. To make the directory in which the user-programs are stored the current directory, enter:

```
cd /usr/lpp/psf/exits
```
3. On the AIX command line, enter:

```
make
```

The **make** command reads the **Makefile** file supplied with InfoPrint, compiles and generates the user-exit program.
4. On the AIX command line, enter:

```
make install
```

The **make install** command copies the executable user-exit program from the **/usr/lpp/psf/exits** directory into the **/usr/lpp/psf/bin** directory so that the code executes with InfoPrint.
5. Enable all of the logical destinations that you disabled.

**Notes:**

1. If you do not want to copy the executable user-exit program into the **/usr/lpp/psf/bin** directory, you can copy them into another directory. However, if you do this, you need to add the path to the **PATH** statement in the **/etc/environment** file so that InfoPrint can locate the module.
2. You can only specify one user-exit program for each function name provided by InfoPrint per queue.
3. Ensure the function name of the user exit is one of the following where the name is in uppercase letters, because that is the entry point in the module:
  - ACCOUNTING
  - AUDIT
  - HEADER
  - SEPARATOR
  - TRAILER
  - INDATA
  - OUTDATA
4. If you do not want to use the same name for the user-exit program, you must edit the **Makefile** file and change the name of the user-exit program supplied with InfoPrint to the new name. For example, if you want to call your new header user-exit program **header**, you must edit the **Makefile** file and change the name of the existing header user-exit program, **ainuxhdr** to **header**. In addition, you must change the source code file name from **ainuxhdr.c** to **header.c**. You may also add new exit targets in the **Makefile** file.
5. You must mark the function as an exported symbol during the link-editing step. Refer to the InfoPrint supplied **/usr/lpp/psf/exits/Makefile** for more information.

## Activating the User-Exit Program

Before you can use the new user-exit program, you must activate the program. See Chapter 13, “Creating and Managing Auxiliary Sheets and User Exit Programs” on page 149 for the procedures to activate the various user-exit programs.

---

## Header Page and Trailer Page User-Exit Program Inputs and Outputs

Because the InfoPrint start page and trailer page user-exit programs require the same inputs and produce the same outputs, the program descriptions are similar.

The source code (in the C programming language) for the sample header page user-exit programs and trailer page user-exit programs listed on page 241 are located in the **/usr/lpp/psf/exits** directory. These sample programs generate an AFP data stream page.

The data structures for the header and trailer page user-exit programs are included with the source code in the **/usr/lpp/psf/exits/ainuexit.h** file. The code for these structures is shown in “User-Exit Program Structures” on page 255.

The declaration of these exits is:

```
void HEADER (HEADER_EXITDATA *exitdata)
void TRAILER (TRAILER_EXITDATA *exitdata)
```

The **HEADER\_EXITDATA** and the **TRAILER\_EXITDATA** input/output parameters contain all the input and output data needed to communicate between InfoPrint and the user-exit programs.

The **HEADER\_EXITDATA** and the **TRAILER\_EXITDATA** structures include these fields.

The following fields provide input information:

<b>UserID</b>	Identifies the AIX user ID of the person who submitted the job. If you log in as yourself and then switch to <b>root</b> , the AIX user ID is <b>root</b> .
<b>NodeID</b>	Identifies the name of the AIX system (host). The backend program sets the NodeID.
<b>Jobname</b>	Identifies the name of the job. This is the same as the file name in the job.  Job submitters can also specify the job name with the InfoPrint job attribute <b>job-name=name</b> when they submit a job.  If the job name is not specified for files defined as OTF, PCL, PostScript, ditroff, line data, unformatted ASCII, double-byte character set (DBCS) ASCII, EUC, PDF, JPEG, GIF, or TIFF files when the job is submitted, InfoPrint creates a temporary file for the transform output. InfoPrint uses the temporary file name for the job name.
<b>SpoolID</b>	Identifies the job ID, which is an integer. InfoPrint sets the SpoolID.
<b>Printer Name</b>	Identifies the name of the InfoPrint destination.
<b>hab</b>	This function is not used in AIX.
<b>Date</b>	Identifies the date printed.
<b>Time</b>	Identifies the time printed.
<b>Distribution</b>	Identifies the distribution information provided when the job is submitted.

## Other Input Values

The following fields are used by some of the sample programs to provide additional input information. This information can be specified from:

- migrated jobs
- MVS Download jobs
- fields set in the InfoPrint administrator's GUI default-document notebook **PSF Information** tab
- the fields in the InfoPrint SMIT administrator's interface Submit an InfoPrint Job panel

**Account** Identifies the account information provided when the job is submitted.

The **Account** field value can be any null-terminated (X'00') character string. You should limit the string to 20 or less characters.

<b>Address1</b>	<p>Identifies the first line of address information provided when the job is submitted.</p> <p>The <b>Address1</b> field value can be any null-terminated (X'00') character string. You should limit the string to 57 or less characters.</p>
<b>Address2</b>	<p>Identifies the second line of address information provided when the job is submitted.</p> <p>The <b>Address2</b> field value can be any null-terminated (X'00') character string. You should limit the string to 57 or less characters.</p>
<b>Address3</b>	<p>Identifies the third line of address information provided when the job is submitted.</p> <p>The <b>Address3</b> field value can be any null-terminated (X'00') character string. You should limit the string to 57 or less characters.</p>
<b>Address4</b>	<p>Identifies the fourth line of address information provided when the job is submitted.</p> <p>The <b>Address4</b> field value can be any null-terminated (X'00') character string. You should limit the string to 57 or less characters.</p>
<b>Building</b>	<p>Identifies the building information provided when the job is submitted.</p> <p>The <b>Building</b> field value can be any null-terminated (X'00') character string. You should limit the string to 24 or less characters.</p>
<b>Department</b>	<p>Identifies the department information provided when the job is submitted.</p> <p>The <b>Department</b> field value can be any null-terminated (X'00') character string. You should limit the string to 24 or less characters.</p>
<b>Name</b>	<p>Identifies the name information provided when the job is submitted.</p> <p>The <b>Name</b> field value can be any null-terminated (X'00') character string. You should limit the string to 24 or less characters.</p>
<b>Nodeid</b>	<p>Identifies the nodeid information provided when the job is submitted.</p> <p>The <b>Nodeid</b> field value can be any null-terminated (X'00') character string. You should limit the string to 10 or less characters.</p>
<b>Passthru</b>	<p>Identifies any other information provided when the job is submitted that will be passed through the user exit to the backend program</p> <p>The following <b>Passthru</b> flags are supported:</p> <p><b>class</b>            Identifies the one-character class attribute.</p>

- destination** Identifies the one-to eight-character destination attribute.
- forms** Identifies the one-to eight-character forms attribute.
- segmentid** Identifies the one-to ten-character segmentation identifier.

The **Passthru** field value can be any null-terminated (X'00') character string no greater than 1,024 characters in length.

**Programmer** Identifies the programmer information provided when the job is submitted.

The **Programmer** field value can be any null-terminated (X'00') character string. You should limit the string to 24 or less characters.

**Room** Identifies the room information provided when the job is submitted.

The **Room** field value can be any null-terminated (X'00') character string. You should limit the string to 24 or less characters.

**Title** Identifies the title information provided when the job is submitted.

The **Title** field value can be any null-terminated (X'00') character string. You should limit the string to 24 or less characters.

**Userid** Identifies the userid information provided when the job is submitted.

The **Userid** field value can be any null-terminated (X'00') character string. You should limit the string to 10 or less characters.

The following fields provide output information:

**PagePointer** Points to a buffer containing the header page or trailer page data produced by the exit.

**PageSize** Indicates the size of the header page or trailer page data returned by the exit. This field is initially set to 0 before the exit is called. If no data is generated by the exit, this field remains set at 0.

**PageType** Indicates the type of header or trailer page data (if any) that the exit generates. The field is initially set to 0 (AFP data stream) before the exit is called. Valid values are:

- 0** AFP data stream
- 1** ASCII data

**Job Completion**

Indicates the status returned by the exit. This field is initially set to 0 before the exit is called. Valid return codes are:

- 0** Good completion, all done, accept resultant page.
- 1** Bad completion, non-fatal error, no page generated.
- 5** Bad completion, fatal error. The exit is disabled until you shut down the actual destination.

- 8 Bad completion, terminate the current job.
- 12 Bad completion, terminate the current job, the exit is disabled until you shut down the actual destination.

After you create your header or trailer page user-exit program, you must use the AIX **make** command to compile the code (see “Compiling and Installing the User-Exit Program” on page 243).

---

## Separator Page User-Exit Program Inputs and Outputs

The InfoPrint separator page user-exit program is called before copies of a job (including the very first copy) print. This exit is also called before the error messages and the trailer page ( Figure 53 on page 241).

The source code (in the C programming language) for the sample separator page user-exit programs listed on page 241 are located in the **/usr/lpp/psf/exits** directory. These sample programs generate an AFP data stream page.

The data structures for the separator page user-exit program are included with the source code in the **/usr/lpp/psf/exits/ainuexit.h** file. The code for these structures is shown in “User-Exit Program Structures” on page 255.

The declaration of this exit is:

```
void SEPARATOR (SEPARATOR_EXITDATA *exitdata)
```

The **SEPARATOR\_EXITDATA** input/output parameter contains all the input and output data needed to communicate between InfoPrint and the user-exit program.

The **SEPARATOR\_EXITDATA** structure includes the following fields.

The following fields provide input information:

<b>UserID</b>	Identifies the AIX user ID of the person who submitted the job. If you log in as yourself and then switch to <b>root</b> , the AIX user ID is <b>root</b> .
<b>NodeID</b>	Identifies the name of the AIX system (host). The backend program sets the NodeID.
<b>Jobname</b>	Identifies the name of the job. This is the same as the file name in the job.  Job submitters can also specify the job name with the InfoPrint job attribute <b>job-name=name</b> when they submit the job.  If the job name is not specified for files defined as OTF, PCL, PostScript, ditroff, line data, unformatted ASCII, DBCS ASCII, EUC, PDF, JPEG, GIF, or TIFF files when the job is submitted, InfoPrint creates a temporary file for the transform output. The temporary file name is used for the job name.
<b>SpoolID</b>	Identifies the job ID, which is an integer. InfoPrint sets the SpoolID.
<b>Printer Name</b>	Identifies the name of the InfoPrint destination.
<b>hab</b>	This function is not used in AIX.

<b>Date</b>	Identifies the date printed.
<b>Time</b>	Identifies the time printed.
<b>Distribution</b>	Identifies the distribution information provided when the job is submitted.

Additional input information fields are used by some of the sample programs; see “Other Input Values” on page 245.

The following fields provide output information:

<b>Copy</b>	Indicates which copy is associated with this call to the exit. Initially set to 1, it increments by one each time the exit is called. The sample separator page user-exit program generates one separator page for the first copy and all subsequent copies of the job.
<b>PagePointer</b>	Points to a buffer containing the separator page data produced by the exit.
<b>PageSize</b>	Indicates the size of the separator page data returned by the exit. This field is initially set to 0 before the exit is called. If no data is generated by the exit, this field remains set at 0.
<b>PageType</b>	Indicates the type of separator page data (if any) that the exit generates. The field is initially set to 0 (AFP data stream) before the exit is called. Valid values are: <ul style="list-style-type: none"> <li><b>0</b> AFP data stream</li> <li><b>1</b> ASCII data</li> </ul>
<b>Job Completion</b>	Indicates the status returned by the exit. This field is initially set to 0 before the exit is called. Valid return codes are: <ul style="list-style-type: none"> <li><b>0</b> Good completion, all done, accept resultant page.</li> <li><b>-1</b> Bad completion, non-fatal error, no page generated.</li> <li><b>-5</b> Bad completion, fatal error. The exit is disabled until you shut down the actual destination.</li> <li><b>-8</b> Bad completion, terminate the current job.</li> <li><b>-12</b> Bad completion, terminate the current job, the exit is disabled until you shut down the actual destination.</li> </ul>

After you create your separator page user-exit program, you must use the AIX **make** command to compile the code (see “Compiling and Installing the User-Exit Program” on page 243).

---

## Accounting and Audit User-Exit Program Inputs and Outputs

The InfoPrint accounting and audit user-exit programs require the same inputs and produce the same outputs so the program descriptions are similar.

The source code (in the C programming language) for the sample accounting and audit user-exit programs listed on page 241 are in the **/usr/lpp/psf/exits** directory.

These sample programs generate an ASCII data stream page. The sample programs store the data into a file you can access with the following executable reporting utilities:

<b>ainurpt1</b>	Provides accounting data for the actual destinations defined, based upon the destination ID.
<b>ainurpt2</b>	Provides accounting data for the actual destinations defined, based upon the userid.
<b>ainurpt3</b>	Provides detailed accounting data for the destinations defined, based upon the particular userid supplied.
<b>ainurpt4</b>	Provides audit data for the actual destinations defined, based upon the destination ID.
<b>ainurpt5</b>	Provides audit data for the actual destinations defined, based upon the userid.
<b>ainurpt6</b>	Provides detailed audit data for the actual destinations defined, based upon the particular userid supplied.

These executable reporting utilities are located in the **/usr/lpp/psf/exits** directory. By specifying these executable reporting utilities at the AIX command line, you can display data by either destination ID or userid. For example, to report on print requests submitted by a specific user to a actual destination for which the accounting user exit has been activated, you can specify **ainurpt3** and then provide the userid to the program.

**Note:** You must activate the audit and accounting exits to generate these reports. For more information on activating these exits, see “Activating Auxiliary Sheets for Accounting or Auditing Information” on page 159.

The data structures for the accounting and audit user-exit programs are included with the source code in the **/usr/lpp/psf/exits/ainuexit.h** and **/usr/lpp/psf/exits/ainurpt.h** files. The code for these structures is shown in “User-Exit Program Structures” on page 255.

The declarations of these exits are:

```
void ACCOUNTING (ACCOUNTING_EXITDATA *exitdata)
void AUDIT (AUDIT_EXITDATA *exitdata)
```

The **ACCOUNTING\_EXITDATA** and the **AUDIT\_EXITDATA** input/output parameters contain all the input and output data needed to communicate between InfoPrint and the user-exit programs.

The **ACCOUNTING\_EXITDATA** and the **AUDIT\_EXITDATA** structures include the following fields.

The following fields provide input information:

<b>UserID</b>	Identifies the AIX user ID of the person who submitted the job. If you log in as yourself and then switch to <b>root</b> , the AIX user ID is <b>root</b> .
<b>NodeID</b>	Identifies the name of the AIX system (host). The backend program sets the NodeID.
<b>Jobname</b>	Identifies the name of the job. This is the same as the file name in the job.  Job submitters can also specify the job name with the InfoPrint job attribute <b>job-name=name</b> when they submit the job.  If the job name is not specified for files defined as OTF, PCL, PostScript, ditroff, line-data, unformatted ASCII, DBCS ASCII, EUC, DPF, GIF, JPEG, or TIFF files when the job is submitted, InfoPrint creates a temporary file for the transform output. The temporary file name is used for the job name.
<b>SpoolID</b>	Identifies the job ID, which is an integer. InfoPrint sets the SpoolID.
<b>Printer Name</b>	Identifies the name of the InfoPrint destination.
<b>hab</b>	This function is not used in AIX.
<b>Pages Printed</b>	Shows the total number of impressions produced for this job.
<b>Bin 1 Sheets Printed</b>	Shows the total number of sheets selected from the primary bin.
<b>Bin 2 Sheets Printed</b>	Shows the total number of sheets selected from the secondary bin.
<b>Number of Fonts used</b>	Shows the total number of fonts used in this job.  <b>Note:</b> The counters do not include resources contained in the input file. The counters only include resources used before the accounting or audit user exit is called. Therefore, the resources required for printing error messages and the trailer page do not appear in the resource totals.
<b>Number of Overlays used</b>	Shows the total number of overlays used in this job.  <b>Note:</b> The counters do not include resources contained in the input file. The counters only include resources used before the accounting or audit user exit is called. Therefore, the resources required for printing error messages and the trailer page are not included in the resource totals.
<b>Number of Segments used</b>	Shows the total number of page segments used in this job.  <b>Note:</b> The counters do not include resources contained in the input file. The counters only include resources used before the accounting or audit user exit is called. Therefore, the resources required for printing error

messages and the trailer page are not included in the resource totals.

<b>Start Date</b>	Identifies the date the job started printing.
<b>Start Time</b>	Identifies the time the job started printing.
<b>Stop Date</b>	Identifies the date the job finished printing.
<b>Stop Time</b>	Identifies the time the job finished printing.

Additional input information fields are used by some of the sample programs; see “Other Input Values” on page 245

The following fields provide output information:

<b>PagePointer</b>	Points to a buffer containing the accounting or audit page data produced by the exit.
<b>PageSize</b>	Indicates the size of the accounting or audit page data returned by the exit. This field is initially set to 0 before the exit is called. If no data is generated by the exit, this field remains set at 0.
<b>PageType</b>	Indicates the type of accounting or audit page data (if any) that the exit generates. The field is initially set to 0 (AFP data stream) before the exit is called. Valid values are:  <b>0</b> AFP data stream <b>1</b> ASCII data

#### **Job Completion**

Indicates the status returned by the exit. This field is initially set to 0 before the exit is called. Valid return codes are:

- 0**    Good completion, all done, accept resultant page.
- 1**    Bad completion, non-fatal error, no page generated.
- 5**    Bad completion, fatal error. The exit is disabled until you shut down the actual destination.
- 8**    Bad completion, terminate the current job.
- 12**    Bad completion, terminate the current job, the exit is disabled until you shut down the actual destination.

After you create your accounting or audit user-exit program, you must use the AIX **make** command to compile the code. See “Compiling and Installing the User-Exit Program” on page 243.

---

## **Input Data User-Exit Program Inputs and Outputs**

The InfoPrint input data user-exit program is used to monitor the incoming print data stream to InfoPrint. This exit is called at the beginning of the job after the header (start) page ( Figure 53 on page 241).

The source code (in the C programming language) for the sample input data user-exit program listed on page 241 is in the **/usr/lpp/psf/exits/ainuxind.c** file. This sample program consists of a return code and performs no function.

The data structures for the input data user-exit program are included with the source code in the `/usr/lpp/psf/exits/ainuexit.h` file. The code for these structures is shown in “User-Exit Program Structures” on page 255.

The declaration of this exit is:

```
void INDATA (INDATA_EXITDATA *exitdata)
```

The **INDATA\_EXITDATA** input/output parameter contains all the input and output data needed to communicate between InfoPrint and the user-exit program.

The **INDATA\_EXITDATA** structure includes the following fields.

The following fields provide input information:

**UserID** Identifies the AIX user ID of the person who submitted the job. If you log in as yourself and then switch to **root**, the AIX user ID is **root**.

**NodeID** Identifies the name of the AIX system (host). The backend program sets the NodeID.

**Jobname** Identifies the name of the job. This is the same as the file name in the job.

Job submitters can also specify the job name with the InfoPrint job attribute **job-name=name** when they submit the job.

If the job name is not specified for files defined as OTF, PCL, PostScript, ditroff, line-data, unformatted ASCII, DBCS ASCII, EUC, DPF, JPEG, GIF, or TIFF files when the job is submitted, InfoPrint creates a temporary file for the transform output. The temporary file name is used for the job name.

**SpoolID** Identifies the job ID, which is an integer. InfoPrint sets the SpoolID.

**Printer Name** Identifies the name of the InfoPrint actual destination.

**hab** This function is not used in AIX.

**Copy** Indicates which copy is associated with this call to the exit. Initially set to 1, it increments by one each time the exit is called.

**DataOffset** Indicates the offset into the source file.

**DataSize** Indicates the number of bytes in the buffer.

**DataPointer** Points to a buffer containing the incoming print data stream.

**DataType** Indicates the type of source data the exit receives. Valid values are:

- 0** AFP data stream
- 1** ASCII data

**Job Completion**

Indicates the status returned by the exit. This field is initially set to 0 before the exit is called. Valid return codes are:

- 0** Good completion, all done, accept resultant page.
- 1** Bad completion, non-fatal error, no page generated.
- 5** Bad completion, fatal error.

- 8 Bad completion, terminate the current job.
- 12 Bad completion, terminate the current job, the exit is disabled until you shut down the actual destination.

After you create your input data user-exit program, you must use the AIX **make** command to compile the code (see “Compiling and Installing the User-Exit Program” on page 243).

**Note:** The input information fields used by some of the sample programs (see “Other Input Values” on page 245) are available through the alternate sample user exits. InfoPrint does not provide an alternate Input Data User Exit.

---

## Output Data User-Exit Program Inputs and Outputs

The InfoPrint output data user-exit program is used to monitor the outgoing print data stream from InfoPrint. This exit is called at the end of the job before the error messages and the trailer page.

The source code (in the C programming language) for the sample output data user-exit program listed on page 241 is in the **/usr/lpp/psf/exits/ainuxout.c** file. This sample program consists of a return and performs no function.

The data structures for the output data user-exit program are included with the source code in the **/usr/lpp/psf/exits/ainuexit.h** file. The code for these structures is shown in “User-Exit Program Structures” on page 255.

The declaration of this exit is:

```
void OUTDATA (OUTDATA_EXITDATA *exitdata)
```

The **OUTDATA\_EXITDATA** input/output parameter contains all the input and output data needed to communicate between InfoPrint and the user-exit program.

The **OUTDATA\_EXITDATA** structure includes the following fields.

The following fields provide input information:

**UserID** Identifies the AIX user ID of the person who submitted the job. If you log in as yourself and then switch to **root**, the AIX user ID is **root**.

**NodeID** Identifies the name of the AIX system (host). The backend program sets the NodeID.

**Jobname** Identifies the name of the job. This is the same as the file name in the job.

Job submitters can also specify the job name with the InfoPrint job attribute **job-name=name** when they submit the job.

If the job name is not specified for files defined as OTF, PCL, PostScript, ditroff, line-data, unformatted ASCII, DBCS ASCII, EUC, DPF, JPEF, GIF, OR TIFF files when the job IS submitted, InfoPrint creates a temporary file for the transform output. The temporary file name is used for the job name.

<b>SpoolID</b>	Identifies the job ID, which is an integer. InfoPrint sets the SpoolID.
<b>Printer Name</b>	Identifies the name of InfoPrint destination.
<b>hab</b>	This function is not used in AIX.
<b>Copy</b>	Indicates which copy is associated with this call to the exit. Initially set to 1, it increments by one each time the exit is called.
<b>DataSize</b>	Indicates the number of bytes in the buffer.
<b>DataPointer</b>	Points to a buffer containing the outgoing print data stream.
<b>Job Completion</b>	Indicates the status returned by the exit. This field is initially set to 0 before the exit is called. Valid return codes are: <ul style="list-style-type: none"> <li><b>0</b> Good completion, all done, accept resultant page.</li> <li><b>-1</b> Bad completion, non-fatal error, no page generated.</li> <li><b>-5</b> Bad completion, fatal error. The exit is disabled until you shut down the actual destination.</li> <li><b>-8</b> Bad completion, terminate the current job.</li> <li><b>-12</b> Bad completion, terminate the current job, the exit is disabled until you shut down the actual destination.</li> </ul>

After you create your output data user-exit program, you must use the AIX **make** command to compile the code (see “Compiling and Installing the User-Exit Program” on page 243).

**Note:** The output information fields used by some of the sample programs (see “Other Input Values” on page 245) are available through the alternate sample user exits. InfoPrint does not provide an alternate Output Data User Exit.

---

## User-Exit Program Structures

All input and output variables used in InfoPrint user exits are defined through either of the following two files:

- The `/usr/lpp/psf/exits/ainuexit.h` file
- The `/usr/lpp/psf/exits/ainurpt.h` file

The **ainuexit.h** file contains definitions for the header, trailer, separator, accounting and audit exits, while the **ainurpt.h** file formats data for the following executable reporting utilities that apply to both the accounting and audit exits:

- Accounting Log
  - **ainurpt1**
  - **ainurpt2**
  - **ainurpt3**
- Audit Log
  - **ainurpt4**
  - **ainurpt5**
  - **ainurpt6**

These user-exit program structure files are written in the C programming language. The declarations and statements in these files show the structure of the InfoPrint user-exit programs, which are imbedded as part of the user-exit program.

---

## User-Exits Programs for Line-Data Transform

InfoPrint provides several sample user-exit programs for the line-data transform. Use of the user exits is optional. You specify the names of the exit programs with the **inpexit**, **indxexit**, **outexit**, and **resexit** keywords. Each of these keywords is described in Working with the Transform for Line Data.

InfoPrint provides the following sample programs:

<b>/usr/lpp/psf/acif/apkinp.c</b>	Input-record user exit
<b>/usr/lpp/psf/acif/apkout.c</b>	Output-record user exit
<b>/usr/lpp/psf/acif/apkres.c</b>	Resource exit

In addition, InfoPrint provides the following input-record user exits programs to translate input data streams:

**/usr/lpp/psf/acif/apka2e.c**  
Converts ASCII stream data to EBCDIC stream data.

**/usr/lpp/psf/acif/asciinp.c**  
Converts unformatted ASCII data that contains carriage returns and form feeds into a record format that contains an American National Standards Institute (ANSI) carriage control character. This exit encodes the ANSI carriage control character in byte 0 of every record.

**/usr/lpp/psf/acif/asciinpe.c**  
Converts unformatted ASCII data into a record format as does **asciinp.c**, and then converts the ASCII stream data to EBCDIC stream data.

The C language header file for all ACIF exit programs is provided in **/usr/lpp/psf/acif/apkexits.h** along with the build rules for the ACIF user exits in **/usr/lpp/psf/acif/Makefile**

For more information about compiling user-exit programs, refer to “Compiling and Installing the User-Exit Program” on page 243.

## Input Record Exit

The line-data transform provides an exit that enables you to add, delete, or modify records in the line-data input file. The program invoked at this exit is defined by the value of the **inpexit** keyword of the **line2afp** command.

This exit is called after each record is read from the input file. The exit can request that the record be discarded, processed, or processed with control returned to the exit for the next input record. The largest record that InfoPrint can process is 32756 bytes. This exit is not called when the line-data transform is processing resources from directories.

Figure 54 on page 257 contains a sample C language header that describes the control block that is passed to the exit program.

```

typedef struct _INPEXIT_PARMS /* Parameters for the input record exit */
{
    char          *work;        /* Address of 16-byte static work area */
    PFATTR        *pfattr;     /* Address of print file attribute information */
    char          *record;     /* Address of the input record */
    void          *reserved1;  /* Reserved for future use */
    unsigned short recordln;   /* Length of the input record */
    unsigned short reserved2;  /* Reserved for future use */
    char          request;     /* Add, delete, or process the record */
    char          eof;        /* EOF indicator */
} INPEXIT_PARMS;

```

Figure 54. Sample Input Record Exit C Language Header

The address of the control block containing the following parameters is passed to the input record exit:

**work (Bytes 1–4)**

A pointer to a static, 16-byte memory block. The exit program can use this parameter to save information across calls (for example, pointers to work areas). The 16-byte work area is aligned on a full word boundary and is initialized to binary zeros prior to the first call. The user-written exit program must provide the code required to manage this work area.

**pfattr (Bytes 5–8)**

A pointer to the print file attribute data structure. See “Attributes of the Line-Data Input File” on page 263 for more information on the format of this data structure and the information it contains.

**record (Bytes 9–12)**

A pointer to the first byte of the input record including the carriage control character. The record resides in a buffer that resides in storage allocated by the line-data transform but the exit program is allowed to modify the input record.

**reserved1 (Bytes 13–16)**

These bytes are reserved for future use.

**recordln (Bytes 17–18)**

Specifies the number of bytes (length) of the input record. If the input record is modified, this parameter must also be updated to reflect the actual length of the record.

**reserved2 (Bytes 19–20)**

These bytes are reserved for future use.

**request (Byte 21)**

Specifies how the line-data transform processes the record. On entry to the exit program, this parameter is X'00'. When the exit program returns control to line-data transform, this parameter must have the value X'00', X'01', or X'02', where:

**X'00'** Specifies that the line-data transform should process the record.

**X'01'** Specifies that the line-data transform should not process the record.

**X'02'** Specifies that the line-data transform should process the record and then return control to the exit program to allow it to insert the next record. The exit program can set this value to save the current record, insert a record, and then supply the saved record at the next call. After the exit inserts the last record, the exit program must reset the **request** byte to X'00'.

A value of X'00' on entry to the exit program specifies that the record be processed. If you want to ignore the record, change the **request** byte value to X'01'. If you want the record to be processed, and you want to insert an additional record, change the **request** byte value to X'02'. Any value greater than X'02' is interpreted as X'00', and the exit processes the record.

**Note:** Only one record can reside in the buffer at any time.

### **eof (Byte 22)**

An end-of-file (**eof**) indicator. This indicator is a one-byte character code that specifies whether an **eof** condition has been encountered.

When **eof** is signaled (**eof** value='Y'), the last record has already been presented to the input exit, and the input file has been closed. The pointer **record** is no longer valid. Records may not be inserted when **eof** is signaled. The following are the only valid values for this parameter:

**Y** Specifies that **eof** has been encountered.

**N** Specifies that **eof** has not been encountered.

This end-of-file indicator allows the exit program to perform some additional processing at the end of the file. The exit program cannot change this parameter.

## **Using the Line-Data Transform User Input Record Exits**

### **apka2e**

The **apka2e** input-record exit program translates data that is encoded in ASCII (code set IBM-850) into EBCDIC (code set IBM-037) encoded data. You should use this exit when your job requires fonts such as GT12, which has only EBCDIC code points defined.

To execute the **apka2e** input record exit program, set the following keywords and values in your line-data transform keyword file. The **line2afp parmdd** keyword identifies the keyword file.

```
inpexit=/usr/lpp/psf/bin/apka2e
cc=yes
cctype=z
```

### **asciinp**

The **asciinp** input-record exit program transforms an ASCII data stream into a record format that contains a carriage control character in byte 0 of every record. If byte 0 of the input record is an ASCII carriage return (X'0D'), byte 0 is transformed into an ASCII space (X'20') that causes a data stream to return and advance one line; no character is inserted. If byte 0 of the input record is an ASCII form feed character (X'0C'), byte 0 is transformed into an ANSI skip to channel 1 command (X'31') that serves as a form feed in the carriage-control byte.

To execute the **asciinp** input record exit program, set the following keywords in your line-data transform keyword file. The **line2afp parmdd** keyword identifies the keyword file:

```
inpxit=/usr/lpp/psf/bin/asciinp
cc=yes
cctype=z
```

### **asciinpe**

The **asciinpe** input-record exit program combines both user input-record exits described above. To execute, specify `inpxit=/usr/lpp/psf/bin/asciinpe` as the exit program in the keyword file and follow the directions specified for both **apka2e** and **asciinp**.

While the **asciinp** and **asciinpe** input-record exits do not recognize other ASCII printer commands, you can modify these exits to account for the following:

- backspacing (X'08')
- horizontal tabs (X'09')
- vertical tabs (X'0B')

For more information on using and modifying these programs, refer to the prolog of the **asciinp.c** source file that is provided with InfoPrint in the **/usr/lpp/psf/acif** directory.

## Output Record Exit

Using the output-record exit, you can modify or ignore the records the line-data transform writes into the output file. The program invoked at this exit is defined by the **outexit** keyword of the **line2afp** command.

The exit receives control before a record (structured field) is written to the output document file. The exit can request that the record be ignored or processed. The largest record that the exit can process is 32752 bytes, not including the record descriptor word. The exit is not called when the line-data transform is processing resources.

Figure 55 contains a sample C language header that describes the control block passed to the exit program.

```
typedef struct _OUTEXIT_PARMS /* Parameters for the output record exit */
{
    char          *work;        /* Address of 16-byte static work area */
    PFATTR        *pfattr;     /* Address of print file attribute information */
    char          *record;     /* Address of the record to be written */
    unsigned short recordln;   /* Length of the output record */
    char          request;     /* Delete or process the record */
    char          eof;         /* Last call indicator */
} OUTEXIT_PARMS;
```

Figure 55. Sample Output Record Exit C Language Header

The address of the control block containing the following parameters is passed to the output record exit:

**work (Bytes 1–4)**

A pointer to a static, 16-byte memory block. The exit program can use this parameter to save information across calls (for example, pointers to work areas). The 16-byte work area is aligned on a full word boundary and is initialized to binary zeros prior to the first call. A user-written exit program must provide the code required to manage this work area.

**pfattr (Bytes 5–8)**

A pointer to the print file attribute data structure. See “Attributes of the Line-Data Input File” on page 263 for more information on the format of this data structure and the information it contains.

**record (Bytes 9–12)**

A pointer to the first byte of the output record. The record resides in a 32KB (where KB equals 1024 bytes) buffer. The buffer resides in storage allocated by the line-data transform, but the exit program is allowed to modify the output record.

**recordln (Bytes 13–14)**

Specifies the length, in bytes, of the output record. If the output record is modified, this parameter must also be updated to reflect the actual length of the record.

**request (Byte 15)**

Specifies how the line-data transform processes the record. On entry to the exit program, this parameter is X'00'. When the exit program returns control to the line-data transform, this parameter must have the value X'00' or X'01', where:

**X'00'** Specifies that the line-data transform should process the record.

**X'01'** Specifies that the line-data transform should ignore the record.

A value of X'00' on entry to the exit program specifies that the record be processed. If you want to ignore the record, change the **request** byte value to X'01'. Any value greater than X'01' is interpreted as X'00'; the exit processes the record.

**Note:** Only one record can reside in the buffer at any time.

**eof (Byte 16)**

An end-of-file (**eof**) indicator. This indicator is a one-byte character code that signals when the line-data transform has finished writing the output file.

When **eof** is signaled (**eof** value='Y'), the last record has already been presented to the output exit. The pointer **record** is no longer valid. Records may not be inserted after **eof** is signaled. The following are the only valid values for this parameter:

**Y** Specifies that the last record has been written.

**N** Specifies that the last record has not been written.

This end-of-file flag, used as a last-call indicator, allows the exit program to return control to the line-data transform. The exit program cannot change this parameter.

## Resource Exit

The line-data transform provides an exit that enables you to “filter” (exclude) resources. This exit is useful in controlling resources at the file-name level. For example, assume you only wanted to use those fonts that are not shipped with InfoPrint. You could code this exit program to contain a table of all fonts shipped with InfoPrint and filter those from the resource file. Security is another consideration for using this exit because you could prevent certain named resources from being included. The program invoked at this exit is defined by the **resexit** keyword of the **line2afp** command.

This exit receives control before a resource is read from a directory. The exit program can request that the resource be processed or ignored (skipped), but it cannot substitute another resource name in place of the requested one. If the exit requests that any overlay be ignored, the line-data transform automatically ignores any resources the overlay may have referenced (that is, fonts and page segments).

Figure 56 contains a sample C language header that describes the control block that is passed to the exit program.

```
typedef struct _RESEXIT_PARMS /* Parameters for the resource record exit */
{
    char          *work;          /* Address of 16-byte static work area */
    PFATTR        *pfattr;       /* Address of print file attribute information */
    char          resname[8];    /* Name of requested resource */
    char          restype;       /* Type of resource */
    char          request;       /* Ignore or process the resource */
    char          eof;          /* Last call indicator */
} RESEXIT_PARMS;
```

Figure 56. Sample Resource Exit C Language Header

The address of the control block containing the following parameters is passed to the resource-record exit:

### **work (Bytes 1–4)**

A pointer to a static, 16-byte memory block. The exit program can use this parameter to save information across calls (for example, pointers to work areas). The 16-byte work area is aligned on a full word boundary and is initialized to binary zeros prior to the first call. A user-written exit program must provide the code required to manage this work area.

### **pfattr (Bytes 5–8)**

A pointer to the print file attribute data structure. See “Attributes of the Line-Data Input File” on page 263 for more information on the format of this data structure and the information presented.

### **resname (Bytes 9–16)**

Specifies the name of the requested resource. The exit program cannot modify or change this value.

### **restype (Byte 17)**

Specifies the type of resource the name refers to. This is a one-byte hexadecimal value where:

**X'03'** Specifies a GOCA (graphics) object

- X'05'** Specifies a BCOCA (barcode) object
- X'06'** Specifies an IOCA (IO image) object
- X'40'** Specifies a font character set
- X'41'** Specifies a code page
- X'FB'** Specifies a page segment
- X'FC'** Specifies an overlay

The line-data transform does **not** call this exit for the following resource types:

- Page definition

The page definition (**pagedef** keyword) is a required resource for transforming a line-data file.

- Form definition

The form definition (**formdef** keyword) is a required resource for printing a transformed line-data file.

- Coded fonts

The line-data transform must process coded fonts to determine the names of the code pages and font character sets they reference. This is necessary in creating Map Coded Font-2 (MCF-2) structured fields.

#### **request (Byte 18)**

Specifies how the line-data transform processes the resource. On entry to the exit program, this parameter is X'00'. When the exit program returns control to the line-data transform, this parameter must have the value X'00' or X'01' where:

- X'00'** Specifies that the line-data transform should process the resource.
- X'01'** Specifies that the line-data transform should ignore the resource.

A value of X'00' on entry to the exit program specifies that the resource be processed. If you want to ignore the resource, change the **request** byte value to X'01'. Any value greater than X'01' is interpreted as X'00' and the resource is processed.

#### **eof (Byte 19)**

An end-of-file (**eof**) indicator. This indicator is a one-byte character code that signals when the line-data transform has written the last record.

When **eof** is signaled (**eof** value = 'Y'), the last record has already been presented to the resource exit. The pointer **record** is no longer valid. Records may not be inserted after **eof** is signaled. The following are the only valid values for this parameter:

- Y** Specifies that the last record has been written.
- N** Specifies that the last record has not been written.

This end-of-file flag, used as a last-call indicator, returns control to the line-data transform. The exit program cannot change this parameter.

## Non-Zero Return Codes

If the line-data transform receives a non-zero return code from any exit program, the line-data transform issues message 0425-412 and terminates processing.

---

## Attributes of the Line-Data Input File

**Note:** This data structure is provided for informational purposes only.

The line-data transform provides information about the attributes of the line-data input file in a data structure available to the line-data transform user exits.

Figure 57 shows the format of this data structure.

```
typedef struct _PFATTR      /* Print File Attributes          */
{
    char      cc[3];        /* Carriage controls? - "YES" or "NO " */
    char      cctype[1];   /* Carriage control type - A(ANSI), M(Machine), Z(ASCII) */
    char      chars[20];   /* CHARS values, including commas (eg. GT12,GT15) */
    char      formdef[8];  /* Form Definition (FORMDEF) */
    char      pagedef[8]; /* Page Definition (PAGEDEF) */
    char      prmode[8];  /* Processing mode */
    char      trc[3];     /* Table Reference Characters - "YES" or "NO " */
} PFATTR;
```

Figure 57. Sample Print File Attributes C Language Header

The address of the control block containing the following parameters is passed to the user exits:

### **cc (Bytes 1–3)**

The value of the **cc** keyword as specified with the **line2afp** command. The line-data transform uses the default value, **yes**, if this keyword is not explicitly specified.

### **cctype (Byte 4)**

The value of the **cctype** keyword as specified with the **line2afp** command. The line-data transform uses the default value, **z** for ANSI carriage-control characters that is encoded in ASCII, if this keyword is not explicitly specified.

### **chars (Bytes 5–24)**

The value of the **chars** keyword as specified with the **line2afp** command, including any commas that separate multiple font specifications. Because the **chars** keyword has no default value, this field contains blanks if no values are specified.

### **formdef (Bytes 25–32)**

The value of the **formdef** keyword as specified with the **line2afp** command. Because the **formdef** keyword has no default value, this field contains blanks if no value is specified.

### **pagedef (Bytes 33–40)**

The value of the **pagedef** keyword as specified with the **line2afp** command. Because the **pagedef** keyword has no default value, this field contains blanks if no value is specified.

**prmode (Bytes 41–48)**

The value of the **prmode** keyword as specified with the **line2afp** command. Because the **prmode** keyword has no default value, this field contains blanks if no value is specified.

**trc (Bytes 49–51)**

The value of the **trc** keyword as specified with the **line2afp** command. The line-data transform uses the default value, **no**, if this keyword is not explicitly specified.

---

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---

## Chapter 24. Working with InfoPrint Transform Programs

InfoPrint provides transform programs for the following data streams:

- Printer control language (PCL) data stream
- PostScript data stream
- Portable document format (PDF) data stream
- Tag image file form (TIFF) data stream
- Joint photographic experts group (JPEG) data stream
- Graphic interchange format (GIF) data stream
- ditroff data stream
- Double-byte ASCII and EUC data streams
- line-data data stream

The transforms convert the incoming data stream into the Advanced Function Presentation (AFP) format.

When a job in any of these formats is submitted to print on a PSF physical printer, InfoPrint automatically invokes the appropriate transform. You can also run the transforms from the AIX command line without printing the generated output. You may find this useful if you intend to print the job later. Jobs print more quickly if they have already been transformed.

Most transforms have flags or option keywords that you can use to specify processing information. For a list of the flags or options and values for each transform, refer to *IBM InfoPrint Manager for AIX: Reference*. Configuration files, environment variables, and user-exit programs allow you to specify processing information for InfoPrint to use when it invokes the transform automatically. You can also use configuration files and environment variables instead of typing flags on the command line whenever you run a transform.

---

### Customizing the PCL, PostScript, and PDF Transforms

You can customize the transforms for PCL, PostScript, and PDF data by specifying values in the transform configuration files. Table 7 shows the default configuration files that InfoPrint provides. You can either modify these files or create your own.

<b>Data Stream</b>	<b>Transform</b>	<b>Configuration File</b>	<b>Daemon Configuration File</b>
PCL	<b>pcl2afp</b>	<b>/usr/lpp/psf/pcl2afp/pcl2afp.cfg</b>	<b>/usr/lpp/psf/pcl2afp/pcl2afpd.cfg</b>
PostScript	<b>ps2afp</b>	<b>/usr/lpp/psf/ps2afp/ps2afp.cfg</b>	<b>/usr/lpp/psf/ps2afp/ps2afpd.cfg</b>
PDF	<b>pdf2afp</b>	<b>/usr/lpp/psf/ps2afp/ps2afp.cfg</b>	<b>/usr/lpp/psf/ps2afp/ps2afpd.cfg</b>

Notice that the PostScript and PDF transforms use the same default configuration files.

## Sample Configuration File

Figure 58 shows an example of a configuration file for the PostScript and PDF transforms. The configuration file for the PCL transform is similar.

```
# ps2afp configuration file

# KEYWORD          EQUIVALENT ps2afp FLAG          PURPOSE
#####

port = 8251         # -P                which TCP/IP port to use
server = 127.0.0.1  # -S                which server to connect with

ps_max_memory = 14000K # -M            maximum amount of memory that
#                    #                    PostScript uses; the 'K' is ignored

ps_job_timeout = 20 # -j            maximum number of minutes
#                    #                    to process PostScript job

ps_server_timeout = 20 # -s            maximum number of minutes
#                    #                    server waits between jobs

ps_width = 8.5i     # -w            width of generated image
ps_length = 11i     # -l            length of generated image
ps_x_offset = 0i    # -x            left and right margins
ps_y_offset = 0i    # -y            top and bottom margins
ps_resolution = 600 # -r            resolution of printer
ps_output_type = I01_G4 # -a            type of AFP image to generate
```

Figure 58. Sample PostScript or PDF Configuration File

The configuration file uses keyword equivalents of the transform flags. Refer to *IBM InfoPrint Manager for AIX: Reference* for the keywords and values that you can specify in the configuration file.

## Daemon Configuration Files

The PCL, PostScript, and PCL transforms all require a daemon to be running before you can use them. The **pcl2afpd** daemon manages the PCL interpreter portion of the **pcl2afp** transform. The **ps2afpd** daemon manages the PostScript interpreter portion of the **ps2afp** and **pdf2afp** transforms. For more information about these daemons, refer to *IBM InfoPrint Manager for AIX: Reference*.

Each daemon, like the corresponding transform, uses a configuration file. The daemon configuration file can contain the same keywords as the transform configuration file, except **server**, plus some keywords that control the operation of the daemon. Refer to *IBM InfoPrint Manager for AIX: Reference* for the daemon keywords.

## Hierarchy of Transform Options

InfoPrint assigns a hierarchy to its use of flags and configuration-file information when it runs the PCL, PostScript, or PDF transform program. The following lists the order in which InfoPrint uses flags and information specified in configuration files:

1. Any values you specify on the command line, including values in the configuration file you specify with the **-C** flag.

InfoPrint commands process flags from left to right. If you enter the same flag more than once, InfoPrint uses the last occurrence of the flag to determine the value to use. For example, if you specify the following command:

```
ps2afp -Cconfig.file -r240 -r300 myfile.ps
```

the **ps2afp** command transforms the file using 300-pel resolution. InfoPrint ignores the resolution value specified in the configuration file `config.file` and the first **-r240** flag and value.

2. Values specified in the **pcl2afp.cfg** or **ps2afp.cfg** configuration file in the current directory, if one exists and if you issue the transform command directly. InfoPrint ignores values in the current directory if you invoke the transform command indirectly by submitting a job to print.
3. Values specified in the **pcl2afp.cfg** or **ps2afp.cfg** configuration file in your home directory, if one exists.
4. Values specified in the default transform command configuration file named in Table 7 on page 267.
5. Values specified in a customized configuration file identified with the **-C** flag of the **pcl2afpd** or **ps2afpd** command when the transform daemon started.
6. Values specified in the default transform daemon configuration file named in Table 7 on page 267.
7. Default values that are built into InfoPrint. These are the same as the transform defaults except that the default PostScript or PDF output type is an IM1 uncompressed image.

---

## Customizing the TIFF, JPEG, and GIF Transforms

You can customize the transforms for TIFF, JPEG, and GIF data by:

- Specifying values in the transform configuration files
- Setting the transform environment variables

Table 8 on page 270 shows the default configuration files that InfoPrint provides. You can either modify these files or create your own.

<i>Table 8. Default TIFF, JPEG, and GIF Transform Configuration Files</i>		
<b>Data Stream</b>	<b>Transform</b>	<b>Configuration Files</b>
TIFF	<b>tiff2afp</b>	<b>/usr/lpp/psf/tiff2afp/tiff2afp.cfg</b> <b>/usr/lpp/psf/tiff2afp/tiff2afp.3160cfg</b> <b>/usr/lpp/psf/tiff2afp/tiff2afp.3900cfg</b>
JPEG	<b>jpeg2afp</b>	<b>/usr/lpp/psf/jpeg2afp/jpeg2afp.cfg</b> <b>/usr/lpp/psf/jpeg2afp/jpeg2afp.3160cfg</b> <b>/usr/lpp/psf/jpeg2afp/jpeg2afp.3900cfg</b>
GIF	<b>gif2afp</b>	<b>/usr/lpp/psf/gif2afp/gif2afp.cfg</b> <b>/usr/lpp/psf/gif2afp/gif2afp.3160cfg</b> <b>/usr/lpp/psf/gif2afp/gif2afp.3900cfg</b>

InfoPrint uses the **.3160cfg** and **.3900cfg** configuration files to transform documents that have been submitted to print on an IBM InfoPrint 60 printer or IBM InfoPrint 4000 laser printer respectively.

## Sample Configuration File

Figure 59 shows an example of a configuration file for the TIFF transform. The configuration files for the JPEG and GIF transforms are similar.

```
a=ioca10
choice=full
cmp=g4
ms=5120
msf=0.01
nosniff=yes
noterm=yes
v=yes
pagetype=page
r=600
x=0
y=0
```

*Figure 59. Sample TIFF Configuration File*

The configuration file uses options in the same format as the transform options that you specify on the command line, except that command line options begin with a dash (-). Refer to *IBM InfoPrint Manager for AIX: Reference* for the options and values that you can specify in the configuration file.

## Transform Environment Variables

Many of the TIFF, JPEG, and GIF transform options have equivalent environment variables. Environment variables have the following format:

*transform\_option*

where *transform* is the name of the transform command in upper case and *option* is the command line option without the initial dash (-). For example, the environment variable that corresponds to the **—scale** option of the **jpeg2afp** transform is **JPEG2AFP\_scale**. Refer to *IBM InfoPrint Manager for AIX: Reference* for the options and values that you can specify as environment variables.

## Hierarchy of Transform Options

InfoPrint assigns a hierarchy to its use of options and configuration-file information when it runs the TIFF, JPEG, or GIF transform program. The following lists the order in which InfoPrint uses command-line options and information specified in configuration files:

1. Any values you specify on the command line, including values in the configuration files you specify with the **-C** option.

InfoPrint commands process options from left to right. If you enter the same option more than once, InfoPrint uses the last occurrence of the flag to determine the value to use. For example, if you specify the following command:

```
tiff2afp -Cconfig.file -r240 -r300 myfile.tif
```

the **tiff2afp** command transforms the file using 300-pel resolution. InfoPrint ignores the resolution value specified in the configuration file `config.file` and the first **-r240** flag and value.

2. Values specified in the default transform command configuration file named in Table 8 on page 270.
3. Transform environment variables that you set with the **export** command, if you issue the transform command directly. InfoPrint ignores these environment variables if you invoke the transform command indirectly by submitting a job to print.
4. Transform environment variables in the **.profile** file in your home directory.
5. Transform environment variables in the **/etc/environment** file.
6. Default values that are built into InfoPrint. These are the same as the transform defaults.

---

## Working with the Transform for Line Data

IBM InfoPrint Control (InfoPrint) includes a line-data transform program that transforms line data into the Advanced Function Presentation (AFP) data stream. Converting the line data allows you to print it on high-speed AFP printer devices.

### About Line Data

Read through the following topics to become familiar with line-data terms.

**Note:** The **line2afp** command and its keywords are a subset of the AFP Conversion and Indexing Facility (ACIF) **acif** command. Throughout this chapter references are made to ACIF because the **line2afp** command is linked to the **acif** command. When you use this transform and if errors occur, you may receive some error messages that make reference to ACIF.

### What Is Line Data?

Line data is simply unformatted data — that is, data with few or no embedded control characters to create font changes, page breaks, and so on. The line data is typically created by an application program. For example, an application might produce a bank statement that has line data indicating an account's daily balance.

The InfoPrint line-data transform lets you format the following kinds of data with a page definition and form definition for printing on InfoPrint-managed printer devices:

- S/370 line-mode data. This type of line data was originally designed for a 1403 printer, is typically generated on a S/370 host processor, and is usually EBCDIC characters with embedded control characters (carriage control, table reference characters, and so on). This type of line data can have double-byte code points and Shift In/Shift Out controls.
- Mixed-mode data is S/370 line-mode data embedded with certain AFP structured fields (for example, Include Page Segment).
- Single-byte ASCII data with no embedded control characters except for newlines.
- Single-byte ASCII data that contains ANSI carriage-control characters, table-reference characters, or both.
- Single-byte ASCII data that contains carriage returns and form feed controls, if you specify the **asciinp** or **asciinp** user-exit program.

When you transform the line-data job, you must specify a page definition and a form definition.

**Notes:**

1. You cannot use the line-data transform when printing files containing Proprinter ASCII.
2. When the **line2afp** command processes any unrecognized or unsupported keyword, **line2afp** issues a message, ignores the keyword, and continues processing any remaining keywords. The **line2afp** command then stops processing.
3. InfoPrint also lets you transform and print DBCS ASCII data without a page definition. See *IBM InfoPrint Manager for AIX: Reference* or the **db2afp** man page.

**ANSI and Machine Carriage Controls**

In many environments (including IBM mainframes and most minicomputers), printable data normally contains a carriage control character. The carriage control character acts as a vertical tab command to position the paper at the start of a new page, at a specified line on the page, or to control skipping to the next line. The characters can be one of two types: ANSI carriage control or machine carriage control.

**ANSI Carriage Control Characters:** The most universal carriage control is ANSI, which consists of a single character that is a prefix for the print line. The standard ANSI characters are:

<b>ANSI</b>	<b>Action</b>
space	Single space the line and print
0	Double space the line and print
-	Triple space the line and print
+	Do not space the line and print
1	Skip to channel 1 (the top of the form, by convention)
2-9	Skip to a hardware-defined position on the page
A,B,C	Defined by a vertical tab record or forms control buffer (FCB)

Note that all ANSI control characters perform the required spacing before the line prints. Using **line2afp** command keywords and values, ANSI controls may be encoded in EBCDIC (**cctype=a**) or in ASCII (**cctype=z**).

**Machine Carriage Control Characters:** Machine carriage controls were originally the actual hardware control commands for IBM printers, and are often used on non-IBM systems. Machine controls are literal values, not symbols. They are not represented as characters in any encoding and, therefore, machine controls cannot be translated. Typical machine controls are:

**Machine Action**

X'09'	Print the line and single space
X'11'	Print the line and double space
X'19'	Print the line and triple space
X'01'	Print the line (do not space)
X'0B'	Space one line immediately (do not print)
X'89'	Print the line, then skip to channel 1 (top of form, by convention)
X'8B'	Skip to channel 1 immediately (do not print)

Note that machine controls print before performing any required spacing. There are many more machine control commands than ANSI. Carriage controls may be present in a file or not, but every record in the file must contain a carriage control if the controls are to be used. If the file contains carriage controls, but the **line2afp** command keyword and value **cc=no** is specified, the carriage controls are treated as printing characters. If no carriage controls are specified, the file prints as though it were single spaced.

### Variable-Length and Fixed-Length Files

The line-data transform program needs to know two things about a file in order to transform it:

- The length of each print record
- The kind of carriage control used

Some files contain information in each record that describes the record length; these are called variable-length files. Other files require an external definition of length; these are called fixed-length files.

For variable- and fixed-length files using length prefixes, MO:DCA structured fields are treated as a special case. All such structured fields are self-identifying and contain their own length. They need not contain a length prefix to be correctly interpreted and are processed correctly if there is a length prefix.

**Variable-Length Files:** Variable-length files may use a length prefix, which means they contain a prefix that identifies the length of the record in the file. Each record contains a field that gives the length of the record. If the record contains a length, that length must be a prefix for each record and it must be a 16-bit binary number that includes the length of the 2-byte length prefix. Use the **fileformat=record** keyword and value to identify files with length prefixes.

Variable-length files may use a separator or delimiter to indicate the end of a record, instead of using a length prefix. All of the bytes up to, but not including, the delimiter are considered part of the record. For AIX, the delimiter is X'0A'. If the file uses EBCDIC encoding, the newline character is X'25'. Use the **fileformat=stream** keyword and value to designate files that use newlines to indicate record boundaries.

InfoPrint reads the first six bytes and tests for all ASCII characters (code points from X'00' to X'7F') to determine if a file is encoded in ASCII or EBCDIC. If no non-ASCII characters are found, line-data transform program assumes the file uses

the ASCII newline character, X'0A'. Otherwise, the transform assumes the file uses the EBCDIC newline character, X'25'. Because an input file can misguide the line-data transform, a set of rules has been established to determine how the transform processes the file. The following combinations are possible:

Data Type	Newline Character
All EBCDIC	EBCDIC X'25'
All EBCDIC	ASCII X'0A' (Note)
All ASCII	EBCDIC X'25' (Note)
All ASCII	ASCII X'0A'

**Note:** These combinations are possible only if a file contains a prefix with a string that indicates a different code set than actually exists.

- For EBCDIC data with ASCII newlines, use X'0320202020200A'.
- For ASCII data with EBCDIC newlines, use X'03404040404025'.

**Fixed-Length Files:** Fixed-length files contain records that are all the same length. No other separators or prefixes or self-identifying information exists that indicates the record length. You must know the record length and use the **fileformat=record,nnn** keyword and value, where *nnn* represents the length of each record.

### How the imageout Keyword Affects Processing

The line-data transform converts image formats (IM1) in the input file, in overlays, and in page segments to uncompressed IOCA format, if **line2afp imageout=ioca** keyword and value is specified (the default). An uncompressed IOCA image may use a significantly higher number of bytes than an IM1 image and may take more processing time to convert, especially for shaded or patterned areas. Although IOCA is the MO:DCA-P standard for image data, and some data stream receivers may require it, all products may not accept IOCA data. All software products from the IBM Printing Systems Company do, however, accept IOCA data as well as IM1 image data.

IBM recommends that you specify **imageout=asis**, unless you have a specific requirement for IOCA images.

## Customizing the Line Data Transform

InfoPrint provides several sample programming exits to assist you in customizing the line-data transform. Use of the programming exits is optional. You specify the names of the exit programs with the **inpexit**, **outexit**, and **resexit** keywords. Each of these keywords is described in *IBM InfoPrint Manager for AIX: Reference* or the **line2afp** man page.

InfoPrint provides the following sample exits:

<b>/usr/lpp/psf/acif/apkinp.c</b>	Input record exit
<b>/usr/lpp/psf/acif/apkout.c</b>	Output record exit
<b>/usr/lpp/psf/acif/apkres.c</b>	Resource exit

In addition, InfoPrint provides the following user input record exits to translate line-data data streams:

**/usr/lpp/psf/acif/apka2e.c**

Converts the ASCII stream data into the EBCDIC stream data.

**/usr/lpp/psf/acif/asciinp.c**

Converts unformatted ASCII data that contains carriage returns and form feeds into a record format that contains ANSI carriage control characters. This exit encodes the ANSI carriage control character in byte 0 of every record.

**/usr/lpp/psf/acif/asciinpe.c**

Converts unformatted ASCII data into a record format as does **asciinp.c**, and then converts the ASCII stream data into EBCDIC stream data.

The C language header file for all line-data transform exit programs is also provided:

**/usr/lpp/psf/acif/apkexits.h**

along with the build rules for the line-data transform user exits:

**/usr/lpp/psf/acif/Makefile**

For more information about compiling user exit programs, refer to “Compiling and Installing the User-Exit Program” on page 243.



---

## Chapter 25. Working with Fonts

This chapter describes the fonts required for printing different data formats. It also describes what you must do so that InfoPrint can use them.

---

### Font Substitution on the InfoColor 70

If any fonts are missing from a PostScript job submitted to the InfoColor 70, the printer automatically substitutes Helvetica.

---

### Fonts for Printing Transformed PostScript and PDF Data

The InfoPrint PostScript transform program uses Type 1 outline fonts when transforming PostScript and PDF files. InfoPrint includes the IBM Type 1 outline fonts and these fonts are installed in subdirectories of the **/usr/lpp/psf/ps/fonts** directory during installation. If you have other Type 1 outline fonts, you can also use them with the transform program.

### The Search Path for Fonts Used with the PostScript Transform

When you issue the **ps2afp** or the **pdf2afp** command from the AIX command line, InfoPrint looks for Type 1 outline fonts in the following directories:

- **/usr/lpp/psf/reslib**
- **/usr/lpp/afpfonts**
- **/usr/lpp/psf/fontlib**

**Note:** When InfoPrint runs the PostScript transform program during job submission, it can search other directories for fonts. See “The Search Order for AFP Resources” on page 163.

If you are not using the default fonts supplied with InfoPrint or you have moved the fonts from their default installation locations, set the **PSFPATH** environment variable to specify other directories containing Type 1 outline fonts

If you set the **PSFPATH** environment variable in the **/etc/environment** file, the path to the Type 1 outline fonts is available to anyone who needs to use the InfoPrint PostScript transform program; this includes job submitters and anyone issuing the **ps2afp** command. You can set multiple paths. Separate each path with a colon (:).

For example, if you have fonts located in the directories **/path1** and **/path2**, make the following entry in the **/etc/environment** file:

```
PSFPATH=/path1:/path2
```

### Font-Mapping Files

A font-mapping file identifies the file names of the Type 1 outline fonts on the AIX system. The InfoPrint PostScript transform program requires at least one font-mapping file. InfoPrint installs the default font-mapping file, **psfonts.map** in the **/usr/lpp/psf/ps** directory during installation. If you have other Type 1 outline fonts installed on your system, you can create additional font-mapping files to define their names.

## PostScript Font-Mapping File Considerations

When you create your own font-mapping files, consider that:

- You can create more than one font-mapping file.
- At least one font-mapping file must contain the Courier font. The PostScripttransform program substitutes Courier for any missing fonts.

## Creating a PostScript Font-Mapping File

Use the InfoPrint **mkfntmap** command to create a font-mapping file for use with the InfoPrint PostScript transform program. You specify one or more input files containing Type 1 outline fonts and a name for the font-mapping file.

For example, to use the input file `FontFile` and create a font-mapping file named `font.map`, enter:

```
mkfntmap FontFile > font.map
```

## Using Font-Mapping Files with the **ps2afp** or the **pdf2afp** Command

By default, InfoPrint uses the **psfonts.map** font-mapping file when you issue the **ps2afp** or the **pdf2afp** command; you do not have to specify the name of the default font-mapping file with the command.

To use font-mapping files that you have created when you issue the **ps2afp** command, you must do the following:

- Enter the path and name of the font-mapping file as the value of the **ps\_font\_map\_files** keyword in the transform daemon configuration file. For performance reasons, this is the recommended method. You can specify more than one font-mapping file, if necessary. Separate the font-mapping files with colons.

For example, to specify the font-mapping files `font1.map` and `font2.map`, enter the following:

```
ps_font_map_files=/path/font1.map:/path/font2.map
```

- Enter the path and name of the font-mapping file as the value of the **ps\_font\_map\_files** transform command configuration file. Use the same syntax as described for entering the value in the transform daemon configuration file. Using this method can result in significant performance degradation.
- Specify the font-mapping file, including its path name, from the command line using the **-F** flag of the **ps2afp** or the **pdf2afp** command. You can specify multiple files using multiple **-F** flags; InfoPrint concatenates them from left-to-right (first entered to last entered) in that order.

For example:

```
ps2afp -F/path/font.map
```

This method can also result in degraded performance.

**Note:** If you use the **ps2afp -F** or the **pdf2afp -F** command flag or the **ps\_font\_map\_files** keyword in the transform command configuration file to specify a font-mapping file, and the value is different than that specified in the transform daemon configuration file, the transform daemon restarts the PostScript interpreter so that the new value for the font-mapping file takes

effect. However, restarting the PostScript interpreter decreases performance.

## Specifying Font Substitution through Initialization Files

You can issue specific PostScript commands to specify whether printers substitute fonts for those defined in job tickets that are neither inline with the job nor resident on the printer. To perform this task, modify the **UserInit** file that is located in the **/var/psf/ps2afp**

To ensure that fonts not inline with the job or resident on your printer substitute Courier fonts to allow the job to print, specify the following in the **UserInit** file:

```
%!  
turnFontSubstitutionOn
```

To ensure that fonts not inline with the job or resident on your printer do not print, specify the following in the **UserInit** file:

```
%!  
turnFontSubstitutionOff
```

**Note:** For your convenience, IBM has provided a sample **UserInit** file in the **/var/psf/ps2afp** directory (used by the IBM InfoPrint 4000 PostScript transform) and in the **/var/psf/ps2afp2** directory (used by the IBM InfoPrint 60 PostScript transform): **UserInit.turnFontSubstitutionOn.sample**.

You can use the desktop **Text Editor** to rename and use this **UserInit** file at your installation.

## Adding Non-IBM Fonts to AIX for a PostScript Job

If your InfoPrint system receives a PostScript job from a personal computer system, the fonts required for that job might not reside on the AIX system. An InfoPrint Submit operator might find that either:

- Fonts are not available on AIX
- Fonts are not in the **.pfa** or **.pfb** format required for PostScript fonts

If either of these conditions occur, the AIX administrator must make these fonts available before printing the PostScript job.

To simplify the process of moving fonts from a personal computer system to AIX, fonts can be sent inline in a PostScript job and captured on AIX by using the FontSave utility.

**Note:** Before activating the FontSave utility, ensure that you have the correct licensing to add inline fonts from customer jobs onto the MPC. IBM provides this utility, but is not responsible for verifying that you are authorized to use the fonts a customer may provide inline through a print job.

### Activating the FontSave Utility

You can perform this task by using the following procedure. These directions presume that you have not modified the default file names used by the PostScript transform. If your AIX system controls both the IBM InfoPrint 4000 and the IBM InfoPrint 60, two separate PostScript transforms are controlled by two separate configuration files: **ps2afpd.cfg** for the InfoPrint 4000 and **3160d.cfg** for the InfoPrint 60.

If you have already edited either of these configuration files, these commands might differ. If your installation contains both transforms, ensure that you make the changes for both configuration files.

1. Ensure that the PostScript transform daemons are running prior to starting the InfoPrint software.

If these daemons are not running, open an AIX window and enter:

```
ps2afpd -C /usr/lpp/psf/ps2afpd/daemon
```

where *daemon* refers to either the **ps2afpd.cfg** or the **3160d.cfg** file.

2. Edit the **/usr/lpp/psf/ps2afpd/daemon** configuration file by adding the following line at the end of the file:

```
input_exit = /usr/lpp/psf/bin/fontsave
```

3. Change the line that describes where the font maps reside from

```
ps_font_map_files = /usr/lpp/psf/ps/psfonts.map :\
                    /var/psf/psfonts/user.map
```

to

```
#ps_font_map_files = /usr/lpp/psf/ps/psfonts.map :\
#                    /var/psf/psfonts/user.map
ps_font_map_files = /usr/lpp/psf/ps/psfonts.map :\
                    /var/psf/psfonts/user.map :\
                    /var/psf/workd/FontSave.map
```

where *workd* represents the PostScript transform's work directory. If you are printing to an InfoPrint 4000, the directory defaults to **ps2afpd**, and if you are printing to an InfoPrint 60, the directory defaults to **ps2afpd2**.

**Note:** By commenting out the original lines (#), you retain the ability to turn off the FontSave utility as described in "Deactivating the FontSave Utility" on page 281.

4. From the AIX-command line, verify these changes by using the **cd** command to access the changed files and using the **view** command to verify the changes.

The PostScript transform program detects these changes automatically after they have been saved.

5. Access the working directory that the PostScript transform uses by entering:

```
cd /var/psf/workd
```

From the AIX command line, create the initial font save font mapping file by entering the following commands in sequence:

```
touch FontSave.map
chown daemon.printq FontSave.map
```

6. Test this function by preflighting a PostScript job from the InfoPrint Submit Advanced options window using the command:

```
-a NONE
```

7. Access the work directory for the PostScript transform, where the saved fonts should exist:

```
cd /var/psf/workd
```

8. Enter an **ls** command to ensure that the FontSave directory and the following files exist:

- **FontSave.wrk**
- **FontSave.map**
- **FontSave.bak**

Note that the **FontSave.bak** might not be present if only one PostScript job has been preflighted through the transform when you view this display.

9. If this directory and these files are present, view the **FontSave.map** file, which displays the fonts that have been saved as Adobe Type I fonts that can be used by the PostScript transform.

For example, to map the Macintosh font Garamond-Light, the **FontSave.map** file would display the following line:

```
font Garamond-Light /var/psf/workd/FontSave/Garamond-Light
```

where Garamond-Light is the Type I font saved by the FontSave utility that will be used whenever the PostScript job calls for the Garamond-Light font.

If this directory and these files are not present, ensure that you have made the changes to both the **ps2afpd.cfg** or the **3160d.cfg** files. Also, check the PostScript job that you submitted from InfoPrint Submit to ensure that it contained inline fonts.

10. To verify that the PostScript fonts now reside on your AIX system, preflight another PostScript job from InfoPrint Submit that references the fonts that had been inline. If the PostScript interpreter can find and load these fonts successfully (without font substitution messages displaying on the InfoPrint Submit shared ticket directory or in the **ps2afpd.log** file), the process works correctly.

**Note:** You should never modify either the **FontSave.wrk** or the **FontSave.bak** files because it can affect the path to the Adobe Type I fonts that now reside on AIX.

## Deactivating the FontSave Utility

Because the FontSave utility can degrade performance when running large PostScript jobs, you might want to deactivate it after saving the most commonly used inline fonts.

To deactivate the FontSave utility so that new inline fonts are not saved, but the fonts you have already saved as Adobe Type I are still used, do the following:

1. From the desktop **Text Editor**, search the **/usr/lpp/psf/workd** directory for the *daemon* file, where *daemon* refers to either the **ps2afpd.cfg** file or the **3160d.cfg** file.
2. From with the *daemon* file, disable the input exit by placing a **#** in front of the following line:

```
input_exit = /usr/lpp/psf/bin/fontsave
```

The PostScript transform automatically detects these changes after they have been saved to the file.

To deactivate the FontSave utility so that inline fonts are not saved and previously saved inline fonts are no longer used, remove the input exit and change the following lines in both the **ps2afpd.cfg** file and the **3160d.cfg** file:

```
ps_font_map_files = /usr/lpp/psf/ps/psfonts.map :\
                   /var/psf/psfonts/user.map
#                  /var/psf/ps2afp/FontSave.map
```

You can always reactivate the FontSave utility by changing these files back.

**Note:** Always verify your changes by preflighting a PostScript job from the InfoPrint Submit system (use the -a NONE option when printing). If the job runs with the fonts expected, you know that the changes were saved successfully.

## Transforming pfb Fonts to pfa Fonts for Use with Adobe Acrobat Distiller

The following procedure allows you to transform a binary PostScript font (one with a **.pfb** final qualifier) into an ASCII PostScript font (one with a **.pfa** final qualifier) for use with the Adobe Acrobat Distiller. While the Adobe PostScript RIP (**ps2afp**) can run with both binary and ASCII fonts, the Adobe Acrobat Distiller requires ASCII fonts. You can perform this task from IBM InfoPrint Controland transform any valid Type 1 PostScript font file.

1. Move to the directory where the **.pfb** font resides by specifying:

```
cd /usr/lpp/psf/fonts/apl
```

where */usr/lpp/psf/fonts/apl* represents the directory where your fonts are stored.

2. Use the **makepfa** utility to transform a binary font (such as **APLB.PFB**) into an ASCII font (such as **CourierAPL2-Bold**) by specifying:

```
makepfa /usr/lpp/psf/ps/fonts/apl/APLB.PFB
```

3. When you receive an AIX command-line prompt, view the directory contents to see the file that you just created by specifying:

```
ls -al
```

The system should return a display similar to the following:

```
⋮
-r--r--r--  1 root      printq    50318 Jul 29 20:13 APL.PFB
⋮
-rw-r--r--  1 root      system     95602 Jul 31 13:45 CourierAPL2-Bold
⋮
```

**Note:** If you attempt to transform a font file that is not Type 1 PostScript format, you will receive the following message:

```
0423-026 mkfntmap: The file /t is not a valid Type 1 PostScript
font file and has been ignored.
```

---

## Fonts for Printing ditroff Data

This section describes the files that InfoPrint provides for printing **ditroff** files on AFP printer devices and the directories in which they reside.

## AFP Code Pages for AFP Fonts

InfoPrint supplies the following three code pages for use with the AFP fonts for **ditroff**. These code pages map the existing characters in **troff** files to their corresponding AFP characters in the AFP character sets.

**T1001038** Adobe Symbols (ASCII)

**T1001108 ditroff** Base Compatibility

**T1001109 ditroff** Specials Compatibility

When you install InfoPrint, both the 240-pel and 300-pel code page files are automatically installed in the **/usr/lpp/psf/fontlib** directory.

**Note:** If you transform a file for printing that requires fonts on a font cartridge and the printer device does not have the font cartridge installed that supports the fonts specified in the **/usr/lib/font/devhplj** directory, your file may not print correctly. Refer to your printer documentation to install bit-mapped fonts into the **/usr/lib/font/devhplj** directory.

## AFP Characters Mapped to ditroff Characters

InfoPrint supplies AFP character sets in raster format. The character sets, which map to corresponding **ditroff** fonts, are listed in the **devafp.fontmap** file located in the **/usr/lib/font/devafp** directory. The character sets themselves are installed in the **/usr/lpp/psf/fontlib** directory.

InfoPrint supplies AFP character sets for the following **troff** type families: B, BI, C, CB, CI, CBI, H, HB, HI, HBI, I, R, SG, and SS.

The following character list provides a mapping from the **ditroff** names of characters to the IBM graphics character identifier. The “IBM Graphic Character Identifier” column can be used to view the printed character as printed in a code page table. The “**ditroff** Name of Character” column can be used to print any of these characters by typing it into a text file as a special character that is processed by **troff**.

### Mapping for Code Pages T1001038, T1001108, and T1001109

<b>IBM Graphic Character Identifier</b>	<b>ditroff Name of Character</b>	<b>Character Description</b>
<b>GA010000</b>	<b>*a</b>	alpha
<b>GA020000</b>	<b>*A</b>	capital Alpha
<b>GB010000</b>	<b>*b</b>	beta
<b>GB020000</b>	<b>*B</b>	capital Beta
<b>GD010000</b>	<b>*d</b>	delta
<b>GD020000</b>	<b>*D</b>	capital Delta
<b>GE010000</b>	<b>*e</b>	epsilon
<b>GE020000</b>	<b>*E</b>	capital Epsilon
<b>GE310000</b>	<b>*y</b>	eta
<b>GE320000</b>	<b>*Y</b>	capital Eta
<b>GF010000</b>	<b>*f</b>	phi

Table 9 (Page 2 of 7). Mapping for Code Pages T1001038, T1001108, and T1001109

<b>IBM Graphic Character Identifier</b>	<b>ditroff Name of Character</b>	<b>Character Description</b>
GF020000	*F	capital Phi
GG010000	*g	gamma
GG020000	*G	capital Gamma
GH010000	*x	chi
GH020000	*X	capital Chi
GI010000	*i	iota
GI020000	*I	capital Iota
GK010000	*k	kappa
GK020000	*K	capital Kappa
GL010000	*l	lambda
GL020000	*L	capital Lambda
GM010000	*m	mu
GM020000	*M	capital Mu
GN010000	*n	nu
GN020000	*N	capital Nu
GO010000	*o	omicron
GO020000	*O	capital Omicron
GO310000	*w	omega
GO320000	*W	capital Omega
GP010000	*p	pi
GP020000	*P	capital Pi
GP610000	*q	psi
GP620000	*Q	capital Psi
GR010000	*r	rho
GR020000	*R	capital Rho
GS010000	*s	sigma
GS020000	*S	capital Sigma
GS610000	ts	terminal sigma
GT010000	*t	tau
GT020000	*T	capital Tau
GT610002	*h	theta
GT620000	*H	capital Theta
GU010000	*u	upsilon
GU020000	*U	capital Upsilon
GX010000	*c	xi
GX020000	*C	capital Xi
GZ010000	*z	zeta
GZ020000	*Z	capital Zeta

Table 9 (Page 3 of 7). Mapping for Code Pages T1001038, T1001108, and T1001109

<b>IBM Graphic Character Identifier</b>	<b>ditroff Name of Character</b>	<b>Character Description</b>
LA010000	a	a
LA020000	A	A
LB010000	b	b
LB020000	B	B
LC010000	c	c
LC020000	C	C
LD010000	d	d
LD020000	D	D
LE010000	e	e
LE020000	E	E
LF010000	f	f
LF020000	F	F
LF510000	ff	ff ligature
LF530000	fi	fi ligature
LF550000	fl	fl ligature
LF570000	Fi	ffi ligature
LF590000	Fl	ffl ligature
LG010000	g	g
LG020000	G	G
LH010000	h	h
LH020000	H	H
LI010000	i	i
LI020000	I	I
LJ010000	j	j
LJ020000	J	J
LK010000	k	k
LK020000	K	K
LL010000	l	l
LL020000	L	L
LM010000	m	m
LM020000	M	M
LN010000	n	n
LN020000	N	N
LO010000	o	o
LO020000	O	O
LP010000	p	p
LP020000	P	P
LQ010000	q	q

Table 9 (Page 4 of 7). Mapping for Code Pages T1001038, T1001108, and T1001109

<b>IBM Graphic Character Identifier</b>	<b>ditroff Name of Character</b>	<b>Character Description</b>
LQ020000	Q	Q
LR010000	r	r
LR020000	R	R
LS010000	s	s
LS020000	S	S
LT010000	t	t
LT020000	T	T
LU010000	u	u
LU020000	U	U
LV010000	v	v
LV020000	V	V
LW010000	w	w
LW020000	W	W
LX010000	x	x
LX020000	X	X
LY010000	y	y
LY020000	Y	Y
LZ010000	z	z
LZ020000	Z	Z
ND010000	1	one
ND020000	2	two
ND030000	3	three
ND040000	4	four
ND050000	5	five
ND060000	6	six
ND070000	7	seven
ND080000	8	eight
ND090000	9	nine
ND100000	0	zero
NF010000	12	1/2
NF040000	14	1/4
NF050000	34	3/4
NF180000	18	1/8
NF190000	38	3/8
NF200000	58	5/8
SA000000	∓	minus
SA000000	mi	minus
SA010000	+	plus sign

Table 9 (Page 5 of 7). Mapping for Code Pages T1001038, T1001108, and T1001109

<b>IBM Graphic Character Identifier</b>	<b>ditroff Name of Character</b>	<b>Character Description</b>
SA010000	pl	math plus
SA020000	+−	plus or minus
SA030000	<	less than sign
SA040000	=	equal sign
SA040000	eq	equal sign
SA050000	>	greater than sign
SA060000	di	divide sign
SA070000	mu	multiplication sign
SA160000	ap	approximates
SA240000	ib	improper subset
SA270000	ip	improper superset
SA380000	ca	intersection
SA390000	cu	union
SA400000	sb	subset
SA410000	sp	superset
SA450000	if	infinity
SA470000	pt	proportional to symbol
SA480000	==	identity
SA490000	pd	partial differential symbol
SA510000	is	integral symbol
SA520000	<=	less than or equal
SA530000	>=	greater than or equal
SA540000	!=	not equal
SA670000	mo	element of
SA700000	≈	approximately equal
SA800000	sr	square root
SA870000	es	empty set
SC030000	\$	dollar sign
SC040000	ct	cent sign
SD110000	'	acute accent
SD110000	aa	acute accent
SD130000	`	grave accent
SD130000	ga	grave accent
SD150000	^	circumflex accent
SD190000	~	tilde accent
SD410000	cd	cedilla accent
SF640000	br	box rule
SA860000	rn	root extender

Table 9 (Page 6 of 7). Mapping for Code Pages T1001038, T1001108, and T1001109

<b>IBM Graphic Character Identifier</b>	<b>ditroff Name of Character</b>	<b>Character Description</b>
SV300600	ul	underrule
SV300200	ru	rule
SG050000	lc	left ceiling
SG060000	lf	left floor
SG070000	rc	right ceiling
SG080000	rf	right floor
SG090000	lt	upper left curly bracket
SG100000	lk	left middle curly bracket
SG110000	lb	lower left curly bracket
SG120000	rt	upper right curly bracket
SG130000	rk	right middle curly bracket
SG140000	rb	lower right curly bracket
SG170000	bv	vertical bold
SL030000	gr	gradient
SM010000	#	number sign
SM020000	%	percent sign
SM030000	&	ampersand
SM040000	*	asterisk
SM040002	**	math star
SM050000	@	at
SM060000	[	left bracket
SM070000	\	backslash
SM070000	\e	backslash
SM080000	]	right bracket
SM110000	{	left brace
SM130000	or	or bar
SM130000		or bar
SM140000	}	right brace
SM190000	de	degree
SM240000	sc	section
SM300000	<-	left arrow
SM310000	->	right arrow
SM320000	ua	up arrow
SM330000	da	down arrow
SM340000	dg	dagger
SM350000	dd	double dagger
SM450000	sq	open square

Table 9 (Page 7 of 7). Mapping for Code Pages T1001038, T1001108, and T1001109

<b>IBM Graphic Character Identifier</b>	<b>ditroff Name of Character</b>	<b>Character Description</b>
<b>SM470000</b>	<b>bx</b>	solid square, histogram, square bullet, filled box
<b>SM520000</b>	<b>co</b>	copyright
<b>SM530000</b>	<b>rg</b>	registered
<b>SM540000</b>	<b>tm</b>	trade mark
<b>SM570000</b>	<b>bu</b>	bullet
<b>SM590000</b>	<b>rh</b>	right hand
<b>SM630000</b>	<b>lh</b>	left hand
<b>SM660000</b>	<b>no</b>	logical not
<b>SM750000</b>	<b>ci</b>	circle
<b>SM900000</b>	<b>em</b>	em dash
<b>SP020000</b>	<b>!</b>	exclamation point
<b>SP040000</b>	<b>"</b>	double quote
<b>SP050000</b>	<b>fm</b>	foot mark (minutes symbol)
<b>SP060000</b>	<b>(</b>	left paren
<b>SP070000</b>	<b>)</b>	right paren
<b>SP080000</b>	<b>,</b>	comma
<b>SP090000</b>	<b>\_</b>	underscore
<b>SP090000</b>	<b>–</b>	underscore
<b>SP100000</b>	<b>hy</b>	hyphen
<b>SP110000</b>	<b>.</b>	period
<b>SP120000</b>	<b>/</b>	slash
<b>SP120001</b>	<b>sl</b>	fraction
<b>SP130000</b>	<b>:</b>	colon
<b>SP140000</b>	<b>;</b>	semicolon
<b>SP150000</b>	<b>?</b>	question mark
<b>SP190000</b>	<b>\‘</b>	open quote
<b>SP200000</b>	<b>\’</b>	close quote
<b>SS000000</b>	<b>bs</b>	smiley face
<b>SS680000</b>	<b>–</b>	dash, minus sign (en dash)
<b>SS680000</b>	<b>en</b>	dash, minus sign (en dash)

## Special Symbols Added for Code Page T1001038

The following non-standard special symbols were added:

<i>Table 10. Special Symbols Added for Code Page T1001038</i>		
<i>IBM Graphic Character Identifier</i>	<i>ditroff Name of Character</i>	<i>Character Description</i>
<b>SA370000</b>	<b>tf</b>	therefore, math and proof symbols
<b>SS020000</b>	<b>ht</b>	heart
<b>SS030000</b>	<b>dm</b>	diamond
<b>SS040000</b>	<b>cl</b>	club
<b>SS050000</b>	<b>sd</b>	spade

## Special Symbols Added for Code Page T1001108

The following non-standard special symbols were added:

<i>Table 11. Special Symbols Added for Code Page T1001108</i>		
<i>IBM Graphic Character Identifier</i>	<i>ditroff Name of Character</i>	<i>Character Description</i>
<b>SM790000</b>	<b>hs</b>	house character
<b>ND011000</b>	<b>s1</b>	One superscript
<b>ND021000</b>	<b>s2</b>	Two superscript
<b>ND031000</b>	<b>s3</b>	Three superscript
<b>ND041000</b>	<b>s4</b>	Four superscript
<b>ND051000</b>	<b>s5</b>	Five superscript
<b>ND061000</b>	<b>s6</b>	Six superscript
<b>ND071000</b>	<b>s7</b>	Seven superscript
<b>ND081000</b>	<b>s8</b>	Eight superscript
<b>ND091000</b>	<b>s9</b>	Nine superscript
<b>ND101000</b>	<b>s0</b>	Zero superscript

## Special Symbol Added for Code Page T1001109

The following non-standard special symbol was added:

<i>Table 12. Special Symbol Added for Code Page T1001109</i>		
<i>IBM Graphic Character Identifier</i>	<i>ditroff Name of Character</i>	<i>Character Description</i>
<b>SV300400</b>	<b>ol</b>	overrule

## Adding Other troff Fonts

InfoPrint provides AFP fonts that map to existing **troff** fonts in the Courier, Helvetica, and Times type families and AFP fonts for special characters. The font-mapping table contained in the **devafp.fontmap** file maps the AFP fonts to the corresponding **troff** fonts.

If you want to add **troff** fonts or special characters, contact your IBM Printing Systems Company representative.

## ditroff Font Files

InfoPrint installs other files for **ditroff** in the **/usr/lib/font/devafp** directory, including the following:

<b>devafp.fontmap</b>	File that maps <b>ditroff</b> fonts to AFP fonts.
<b>*.d2afp</b>	Special versions of the <b>ditroff</b> font descriptions. The <b>d2afp</b> command uses these files.
<b>DESC</b> (no extension)	<b>troff</b> device description, ASCII version.
<b>DESC.out</b>	<b>troff</b> device description, binary version.
<b>*.out</b>	<b>troff</b> font descriptions, binary version.

---

## Fonts for Printing DBCS ASCII and EUC Data

In ideographic languages, like Japanese, Chinese, and Korean, there are thousands of characters. A single byte of information cannot represent all of these characters because a single byte only accommodates 256 characters. Therefore, at least one more byte of information is required.

For DBCS ASCII files, each ideographic character is exactly two bytes. For Extended UNIX Code (EUC) files, each ideographic character may be two, three, or four bytes, depending on the EUC implementation and language. Single-byte ASCII characters may be mixed in with DBCS ASCII and EUC characters.

InfoPrint supports printing DBCS ASCII and EUC files in the following formats:

- DBCS ASCII files in the Japanese and Traditional Chinese languages, which can contain formatting controls for the IBM 5577 or 5587 printers.
- EUC files in the Japanese, Traditional Chinese, and Korean languages. EUC files cannot contain any formatting control characters.

## Fonts Required to Print a Double-Byte Transformed File

You can use the **db2afp** transform command to transform input files that use the following code pages:

- Japanese PC (code page IBM-932)
- Japanese EUC (code page IBM-eucJP)
- Traditional Chinese PC (code page IBM-938)
- Traditional Chinese EUC (code page IBM-eucTW)
- Korean EUC (code page IBM-ecuKR)

The transformed files contain font references to the double-byte character set. You set the character set, code page, you want by setting the **PSFDBLANG**

environment variable; see Chapter 20, “Setting InfoPrint and AIX Environment Variables” on page 229.

After you have used the **db2afp** command to transform DBCS ASCII and EUC files into AFP data stream files, you must have access to DBCS fonts when you print the transformed files. The DBCS fonts for Japanese, Traditional Chinese, and Korean are not part of InfoPrint but are available for the MVS, VM, and AIX operating systems as separately orderable licensed programs.

## Installing DBCS Fonts on AIX

To make the fonts available on your system and to InfoPrint, once you have the licensed programs, you must do one of the following:

- Use the AIX licensed programs to install the fonts onto your AIX system.
- Use the AIX licensed programs to install the fonts onto a AIX system other than yours and use the Network File System (NFS) **mount** command to mount the AIX file system onto your AIX system.
- Use the NFS **mount** command to mount the MVS or VM minidisk to your AIX system.

## Setting Up Font Resources for DBCS ASCII and EUC Printing

To print the transformed files that contain font references to the double-byte character set, you must make the double-byte fonts known to InfoPrint through one of the following methods:

- Create a resource-context object that identifies the location of the double-byte fonts and associate the resource-context object with a default-document object and an InfoPrint logical printer; see Chapter 14, “Creating and Managing Resource-Context Objects (PSF, Fax, and Email DSS Only)” on page 163 for these procedures. Using this method makes the fonts known to InfoPrint for any job submitted to the logical printer associated with the default-document object.
- Add the directories to the search path for physical printers using the InfoPrint administrator's GUI physical printer notebook Resource context for fonts field; see “Setting the Actual Destination Attributes for Resource Search Paths” on page 109 for the procedure. Using this method makes the fonts known to InfoPrint for any job processed by those physical printers.
- Set and export the **PSFPATH** environment variable to your environment by entering the following command:

```
export PSFPATH=$PSFPATH:path1:path2:pathN
```

Using this method makes the fonts known to InfoPrint for all print jobs submitted from the AIX windows or High Function Terminal session in which the **PSFPATH** environment variable was set.

- Set and export the **PSFPATH** environment variable in your **.profile** file (Korn and Bourne shells) or **.cshrc** file (C shells) by adding the following line to the file:

```
export PSFPATH=$PSFPATH:path1:path2:pathN
```

Using this method makes the fonts known to InfoPrint for any job you submit.

- Set the **PSFPATH** environment variable in the **/etc/environment.** file by adding the following line to the file:

PSFPATH=path1:path2:pathN

Using this method makes the fonts known to InfoPrint for all users on the system.

---

## Fonts for Printing Line Data

When you specify a coded font name with the **chars** keyword of the **line2afp** command or with the **chars** document attribute, the font name is limited to four characters, excluding the two-character prefix.

Table 13 provides a list of the IBM Expanded Core Fonts for use with unformatted ASCII input data. Because these fonts have eight-character names, the table also provides a list of six-character short names. InfoPrint stores these coded fonts in the **/usr/lpp/psf/reslib** directory. There are symbolic links of the eight-character names that correspond to the six-character names. You may use these short names, *without* the X0 prefix, to satisfy the four-character limitation for specifying font names with the **chars** keyword of the **line2afp** command.

For the names of other coded fonts, refer to *IBM AFP Fonts: Font Summary*.

Table 13 (Page 1 of 2). Font Mapping Table for Use with the **chars** keyword

<b>Type Family</b>	<b>Point Size</b>	<b>Coded Font Name</b>	<b>Linked Short Name (for chars keyword)</b>
Courier	7	X0423072	X04272
Courier	8	X0423082	X04282
Courier	10	X0423002	X04202
Courier	12	X04230B2	X042B2
Courier	14	X04230D2	X042D2
Courier	20	X04230J2	X042J2
Helvetica	6	X0H23062	X0H262
Helvetica	7	X0H23072	X0H272
Helvetica	8	X0H23082	X0H282
Helvetica	9	X0H23092	X0H292
Helvetica	10	X0H23002	X0H202
Helvetica	11	X0H230A2	X0H2A2
Helvetica	12	X0H230B2	X0H2B2
Helvetica	14	X0H230D2	X0H2D2
Helvetica	16	X0H230F2	X0H2F2
Helvetica	18	X0H230H2	X0H2H2
Helvetica	20	X0H230J2	X0H2J2
Helvetica	24	X0H230N2	X0H2N2
Helvetica	30	X0H230T2	X0H2T2
Helvetica	36	X0H230Z2	X0H2Z2
Times New Roman	6	X0N23062	X0N262

Table 13 (Page 2 of 2). Font Mapping Table for Use with the chars keyword

<b>Type Family</b>	<b>Point Size</b>	<b>Coded Font Name</b>	<b>Linked Short Name (for chars keyword)</b>
Times New Roman	7	X0N23072	X0N272
Times New Roman	8	X0N23082	X0N282
Times New Roman	9	X0N23092	X0N292
Times New Roman	10	X0N23002	X0N202
Times New Roman	11	X0N230A2	X0N2A2
Times New Roman	12	X0N230B2	X0N2B2
Times New Roman	14	X0N230D2	X0N2D2
Times New Roman	16	X0N230F2	X0N2F2
Times New Roman	18	X0N230H2	X0N2H2
Times New Roman	20	X0N230J2	X0N2J2
Times New Roman	24	X0N230N2	X0N2N2
Times New Roman	30	X0N230T2	X0N2T2
Times New Roman	36	X0N230Z2	X0N2Z2

---

## Chapter 26. Using Global Resource Identifiers

InfoPrint can identify the fonts required for a job, access AFP font files that are installed on or NFS-mounted to the RS/6000, and download the appropriate fonts to an InfoPrint-managed printer device. However, some InfoPrint printers can use fonts that are resident in the printer, saving the time it takes to download these fonts. Because the font files on the RS/6000 do not share the same names as the printer-resident fonts, InfoPrint uses global resource identifiers (GRIDs) to map the RS/6000-resident fonts to the printer-resident fonts. Use the information in the chapter to work with GRIDs.

---

### How Can You Use GRIDs?

GRID files contain pre-assigned mappings that you can modify to map RS/6000-resident font file names to printer-resident font identifiers. These pre-assigned mappings include both single-byte character set (SBCS) and double-byte characters set (DBCS) outline fonts.

Another way you can use GRID files is to map raster fonts to outline fonts. Some intelligent printer data stream (IPDS) printer devices are capable of printing with outline fonts and scaling the characters in the font to the size the job requires. Other IPDS printers can only use raster fonts and require each point size of the font to be resident in the printer.

If you have a printer that supports outline fonts, you can use the GRID files to map raster character-set names to outline font global identifiers so that InfoPrint downloads the outline fonts or use printer-resident outline fonts with that printer. Conversely, you can use the GRID files to map outline font names to raster font names for printers that only support raster fonts. This mapping allows jobs that specify outline font names in the data stream to print on printers that do not support outline fonts.

A third use of GRID files is to support Mixed Object Document Content Architecture for Presentation (MO:DCA-P) files that specify fonts using GRIDs rather than character-set names. You can customize the GRID files to define which fonts InfoPrint uses when the data stream of the job specifies GRIDs.

---

### What GRID Files Ship With InfoPrint?

InfoPrint ships four GRID files that you can customize for use with the types of printer devices that you use and the types of jobs that you print. These files are **charset.grd.sample**, **codepage.grd.sample**, **cpgid.grd.sample**, and **fgid.grd.sample**, and they are installed in the `/usr/lpp/psf/grd` directory. The following describes each file:

#### **charset.grd.sample**

Specifies which printer-resident fonts are activated for the character-set names found within the data stream of the job.

This file maps the font character-set name to a:

- Font global identifier (**fgid**)
- Graphic character set global identifier (**gcsgid**)

- Font width
- Vertical size value
- Set of font attributes (bold, italic, and doublewide)

Figure 60 shows an example of the format of a line in the character set sample file.

```
# FCS name -> fgid gcsgid width vsize attr #
#-----#
C0L00GSC 398 - 96 120 - # GOTHIC CONDENSED 1
```

Figure 60. Sample File for a Character Set

### codepage.grd.sample

Specifies which printer-resident fonts are activated for the code page names found within the data stream of the job.

This file maps a code page to the:

- Code page global identifier (**cpgid**)
- Graphic character set global identifier (**gcsgid**)

Figure 61 shows an example of the format of a line in the code page sample file.

```
# code page name -> cpgid gcsgid #
#-----#
T1000038 38 123 # US-ASCII Character Set 1
```

Figure 61. Sample File for a Code Page

### fgid.grd.sample

Specifies which font character set InfoPrint should download when substituting for a global resource identifier that it finds in the data stream of the job.

This file maps the following to a font character set (FCS) name:

- A font global identifier (**fgid**)
- A graphic character set global identifier (**gcsgid**)
- A font width
- A vertical size value

Figure 62 shows an example of the format of a line in the font global identifier sample file.

```
# fgid gcsgid width vsize -> FCS name #
#-----#
3 0 144 240 C0E0DE10 # DELEGATE 12 POINT 1
```

Figure 62. Sample File for a Global Identifier

### cpgid.grd.sample

Specifies which code page InfoPrint should download when substituting for a global resource identifier that it finds in the data stream of the job.

This file maps a code page global identifier and a graphic character set global identifier to a code page name. Figure 63 on page 297 shows an example of the format of a line in the code page identifier sample file.

```
# cpgid  gcsgid  ->  code page name                                     #
#-----#
      29      0      T1V10871 # OLD ICELANDIC                             1
```

Figure 63. Sample File for a Code Page Identifier

For a detailed explanation of how the different types of identifiers combine to produce fonts, see *AFP Fonts: Font Summary*

If you have a job that specifies a font that is not resident on your printer, you can use the GRID files to map the missing font to one with the same point size that does reside on your printer. To understand what fonts your printer device has, consult both your printer documentation and *Advanced Function Presentation: Printer Information*

---

## Where Does InfoPrint Search for GRID Files?

InfoPrint searches the following two directories, in the order shown, for GRID files:

1. **`/usr/lpp/psf/grd`**
2. **`/var/psf/printername`**, where *PrinterName* is the name of a valid InfoPrint physical printer.

When you install InfoPrint, sample GRID files are installed in the **`/usr/lpp/psf/grd`** directory. You can maintain a central location for new or modified GRID files for specific printers by storing files in the **`/var/psf/PrinterName`** directory. If you maintain **`.grd`** files in both directories, InfoPrint logically appends the mapping data from the **`/var/psf/PrinterName`** directory to the **`/usr/lpp/psf/grd`** directory.

### Notes:

1. The new or modified GRID files you create have the same names as the sample files except that you delete **`.sample`** from each file name.
2. After creating or modifying GRID files, you must shut down and restart the InfoPrint physical printer represented by *PrinterName* for the changes in the file to take effect.

---

## Understanding the General Syntax Rules and Allowable Values for GRID Files

To tailor the InfoPrint-supplied GRID files for your own system needs, you need to understand the general syntax rules for the four GRID files and the allowable values for the fields within the files.

## Syntax Rules Applying to All Types of GRID Files

The GRID files are simple ASCII text files that you can modify through any standard AIX text editor: The following rules apply to all of the GRID files:

- Each line in the file cannot contain more than 255 characters
- Separate fields within a line with one or more delimiters (spaces)
- A pound sign (#) indicates the start of comments, which causes InfoPrint to ignore the remainder of that line
- A dash, – , indicates the absence of a particular value, for which InfoPrint substitutes a zero (0)
- An asterisk, \* , indicates that a wildcard value (any numeric decimal) is accepted.
- InfoPrint ignores blank lines and extraneous fields

## Allowable Values for the charset.grd File

You can specify the following values for fields in the GRID file for a character set for a font:

### *fgid*

Identifies the character set identifier for the font. Specify a numeric value from 1 to 65534 or enter a dash, – , if you want to disable the mapping of this character set to GRID values.

### *gcsgid*

Identifies a global identifier for the font. Specify a numeric value from 0 to 65534 or enter a dash, – , to specify no **gcsgid**. If you specify an asterisk, InfoPrint issues an error message.

### *width*

Identifies the width specified in the character set. Specify a numeric value from 0 to 65534 or enter a dash, – , to specify no width. If you specify an asterisk, InfoPrint issues an error message.

### *vertical\_size*

Identifies the vertical size specified in the character set. Specify a numeric value from 0 to 65534 or enter a dash, – , to specify no vertical size. If you specify an asterisk, InfoPrint issues an error message.

### *attribute\_field*

Indicates the attributes of the character set. Specify a lowercase b (bold), i (italic), d (doublewide), or enter a dash, – , to specify no attribute.

## Allowable Values for the codepage.grd File

You can specify the following values for fields in the GRID file for a code page for a font:

### *cpgid*

Identifies the code page identifier for the font. Specify a numeric value from 1 to 65534 or enter a dash, – , if you want to disable the mapping of this character set to GRID values.

*gcsgid*

Identifies a global identifier for the code page. Specify a numeric value from 0 to 65534 or enter a dash, – , to specify no **gcsgid**. If you specify an asterisk, InfoPrint issues an error message.

## Allowable Values for the fgid.grd File

You can specify the following values for fields in the GRID file for a font global identifier:

*fgid*

Identifies the global identifier for the font. Specify a numeric value from 1 to 65534 or enter an asterisk, \* , to indicate a wildcard value. If you specify a dash, InfoPrint issues an error message.

*gcsgid*

Identifies the global identifier for the font. Specify a numeric value from 0 to 65534 or enter an asterisk, \* , to indicate a wildcard value. If you specify a dash, InfoPrint issues an error message.

*vertical\_size*

Identifies the vertical size of the font. Specify a numeric value from 1 to 65534 or enter an asterisk, \* , to indicate a wildcard value. If you specify a dash, InfoPrint issues an error message.

*width*

Identifies the number of characters per horizontal inch. Specify a numeric value from 1 to 65534 or enter an asterisk, \* , to indicate a wildcard value. If you specify a dash, InfoPrint issues an error message.

## Allowable Values for the cpgid.grd File

You can specify the following values for fields in the GRID file for a code page global identifier:

*cpgid*

Identifies code page identifier for the font. Specify a numeric value from 1 to 65534.

*gcsgid*

Identifies the global identifier for the font. Specify a numeric value from 0 to 65534 or enter an asterisk, \* , to indicate a wildcard value. If you specify a dash, InfoPrint issues an error message.

---

## Modifying GRID Files

The following section describes the two ways you can modify GRID files to support the printer devices and types of jobs in your production printing environment.

**Note:** If you are using InfoPrint to print from either the IBM 6404 Line Matrix printer, the IBM 6408 Line Matrix printer, or the 6408 Line Matrix printer in both native and 4234 emulation mode, you must modify both the **charset.64xx.grd** and the **codepage.64xx.grd** files as described in “Modifying the charset and codepage GRID Files” on page 300 and “Modifying the FGID and CPGID GRID Files” on page 301.

## Modifying the charset and codepage GRID Files

You can avoid having InfoPrint download fonts by adding font entries that map the font character set or code page that is most referenced in jobs to a global identifier for a resident font.

For example, if many of your jobs specify the Prestige 10-point font, which is character set C0S0PR10, and that font is not resident on your IBM 3812 printer diskette, you can map the Prestige 10-point font to a similar font that does reside on your IBM 3812 printer diskette. In the following procedure, you map the Gothic 10-point font, character set C0D0GT10, that is a printer-resident font to the Prestige 10-point font.

Perform the following steps:

1. From the AIX command line, change to the the */var/psf/PrinterName* directory, where *PrinterName* is the name of the InfoPrint physical printer representing the 3812 printer device.

2. Create the **charset.grd** file from the **charset.grd.sample** file. Enter the command:

```
cp /usr/lpp/psf/grd/charset.grd.sample charset.grd
```

3. Using an AIX editor, such as vi, edit the **charset.grd** file you just created and copy the following line for the Gothic 10-point printer-resident font:

```
C0D0GT10 40 - 144 240 # GOTHIC TEXT 10
```

4. Change the first entry in the copied line, in the **FCS name** column, to the character set identifier of the Prestige 10-point font that you want to map to the Gothic 10-point font. You can change the comment at the end of the copied line to identify the mapping change you are making.

```
C0S0PR10 40 - 144 240 # PRESTIGE 10 mapped to GOTHIC TEXT 10
```

5. Search the remainder of the **charset.grd** file to ensure that it contains no other C0S0PR10 entries. A later entry of the same character set would replace the entry you just made.
6. Save your changes and close the file.

If you print many jobs that specify the personal computer ASCII codepage for Iceland, T1000861, but that codepage is not resident on your printer diskette, you can map codepage T1000861 to a similar codepage that does reside on your printer diskette, the personal computer multilingual codepage for ASCII data, T1000850.

Perform the following steps:

1. From the AIX command line, change to the the */var/psf/PrinterName* directory, where *PrinterName* is the name of the InfoPrint physical printer representing the printer device.

2. Create the **codepage.grd** file from the **codepage.grd.sample** file. Enter the command:

```
cp /usr/lpp/psf/grd/codepage.grd.sample codepage.grd
```

3. Using an AIX editor, such as vi, edit the **codepage.grd** file you just created and copy the following line for the personal computer multilingual codepage for ASCII data:

```
T1000850      850      980 # PC MULTILINGUAL
```

4. Change the first entry in the copied line, in the **code page name** column, to the codepage identifier of the personal computer ASCII codepage for Iceland font that you want to map to the multilingual codepage. You can change the comment at the end of the copied line to identify the mapping change you are making.

```
T1000860      850      980 # ICELAND MAPPED TO MULTILINGUAL
```

5. Search the remainder of the **charset.grd** file to ensure that it contains no other T1000860 entries. A later entry of the same character set would replace the entry you just made.
6. Save your changes and close the file.

## Modifying the FGID and CPGID GRID Files

You can add new entries to map your GRID data to the resident fonts in your printer by modifying either the **fgid.grd.sample** file or the **cpgid.grd.sample** file. If you have a printer that does not support the outline font technology (such as the IBM 3835 Advanced Function Printer), IBM recommends that you map all the *CZnnnn* entries to raster font character-set names. If you do not create this mapping, InfoPrint issues an error message and does not print the job.

For example, if you wanted to map the Times New Roman Latin 1 character set to the raster version, you would perform the following:

1. From the AIX command line, change to the */var/psf/PrinterName* directory, where *PrinterName* is the name of the InfoPrint physical printer representing the printer device.

2. Create the **fgid.grd** file from the **fgid.grd.sample** file. Enter the command:

```
cp /usr/lpp/psf/grd/fgid.grd.sample fgid.grd
```

3. Using an AIX editor, edit the file that you just created and copy the following line:

```
2308      2039 * * CZN200      # Times New Roman Latin1
```

4. Change the entry in the **FCS name** column to CON20000.

```
2308      2039 * * CON20000    # Raster version of TNR Latin 1
```

5. Save your changes and close the file.

After this substitution, InfoPrint prints jobs that specify the font character-set name CZN200 and that processed on the physical printer for which you made the change using the raster version of the font. The CZN200 character set now maps to:

- An FGID of 2308
- A GCSGID of 2039
- A vertical size of 65535
- A width of 0

**Note:** For more information about the different values available for font character sets and code pages, see "IBM Font Interchange Information" in *IBM Data Stream and Object Architectures Mixed Object Document Content Architecture Reference*.

Because the IBM 3835 Advanced Function Printer does not support any resident outline fonts, the **fgid.grd.sample** file maps the **FGID** and the **GCSGID** back to the C0N20000 character set. Then, InfoPrint searches the resource library search path to locate the C0N20000 character for downloading with the job.

To modify the **cpgid** file so that the personal computer ASCII codepage for Iceland maps to the multilingual codepage for ASCII data as described in “Modifying the charset and codepage GRID Files” on page 300, perform the following steps:

1. From the AIX command line, change to the the **/var/psf/PrinterName** directory, where *PrinterName* is the name of the InfoPrint physical printer representing the printer device.
2. Create the **cpgid.grd** file from the **cpgid.grd.sample** file. Enter the command:  

```
cp /usr/lpp/psf/grd/cpgid.grd.sample cpgid.grd
```
3. Using an AIX editor, such as vi, edit the **cpgid.grd** file you just created and copy the following line for the personal computer multilingual codepage for ASCII data:  

```
850      980      T1000850 # PC MULTILINGUAL
```
4. Change the first entry in the copied line, in the **cpgid** column, to the codepage identifier of the personal computer ASCII codepage for Iceland font that you want to map to the multilingual codepage. You can change the comment at the end of the copied line to identify the mapping change you are making.  

```
861      980      T1000850 # ICELAND MAPPED TO MULTILINGUAL
```
5. Search the remainder of the **charset.grd** file to ensure that it contains no other 861 entries. A later entry of the same character set would replace the entry you just made.
6. Save your changes and close the file.

### Verifying the GRID Files

During physical printer initialization, InfoPrint examines the contents of the GRID files. If InfoPrint detects any syntax errors, it reports an error condition and fails to enable the physical printer. To correct these errors, you must edit the failing GRID files. For information on what files, lines, or fields are in error, you must access the **GRID error.log** file for the physical printer that is located in **/var/psf/PrinterName**.

---

## Preventing InfoPrint From Using GRID Files

If you have obtained a 300-pel printer but print 240-pel jobs, the printer-resident fonts may have different line spacings and endings in the printed output. For some types of billing statements, these line endings are inappropriate. You can solve this problem by preventing InfoPrint from using the GRID files. This prevents the use of the printer-resident fonts. Perform the following procedure:

1. Using the AIX **mv** command, rename your customized GRID files. For example, if you are in the **/var/psf/PrinterName** directory and you want to rename the **charset.grd** to **charset.grd.bak**, enter:  

```
mv charset.grd charset.grd.bak
```
2. Copy the **/usr/lpp/psf/grd/charset.grd.sample** file to **charset.grd** in the **/var/psf/PrinterName** directory.

3. Using an AIX editor, such as **vi**, edit the copied **charset.grd** file and place a dash (–) in the **fgid** column.
4. Copy the **/usr/lpp/psf/grd/codepage.grd.sample** file to **codepage.grd** in the **/var/psf/PrinterName** directory.
5. Edit the copied **codepage.grd** file and place a dash (–) in the **cpgid** column.



---

## Chapter 27. Printing Data Sets from an MVS System Through MVS Download

This section contains information on setting up and using the MVS Download daemon supplied with IBM InfoPrint Control (InfoPrint) to print MVS jobs on InfoPrint-managed printers. The MVS jobs must come from an MVS system that has the MVS Download feature of IBM Print Services Facility/Multiple Virtual Storage (PSF/MVS) program product installed.

The InfoPrint MVS Download daemon allows MVS users to print data sets from the MVS JES spool on InfoPrint-managed printer devices. The MVS data sets may contain S/370 line data, MO:DCA data, or S/370 mixed-mode data. You can also print MVS data sets containing PostScript data or data in any of the other formats supported by InfoPrint.

The PSF/MVS MVS Download feature uses a routing-control data set residing on the MVS system to map any combination of the **CLASS**, **FORMS**, and **DEST** JCL parameters to a specific InfoPrint server.

See the *PSF/MVS MVS Download Guide*, for information about the MVS Download feature and tasks performed on the MVS system.

---

### Preparing to Work with MVS Download

Read through the following topics to become familiar with MVS Download terms and components.

#### Why Use MVS Download?

When you have data on an MVS system that you want to print on an InfoPrint-managed printer device, you can use the MVS Download feature of PSF/MVS and the InfoPrint MVS Download daemon. The PSF/MVS feature and the InfoPrint daemon:

- Provide a high-speed data transfer utility for high-volume jobs.
- Restart from a checkpoint if something interrupts the data transmission.
- Do not require separate spool management and queueing on MVS because of seamless integration with System Display and Search Facility (SDSF).

#### What Is the MVS Download Daemon?

InfoPrint provides a daemon, **mvsprsd**, which receives data sets from one or more MVS systems. If you expect a high volume of data, you can configure several **mvsprsd** daemons to receive the data sets from MVS.

To configure an **mvsprsd** daemon, you must perform these tasks:

1. Make the Advanced Function Presentation (AFP) resources on the MVS system available to InfoPrint if they are not already available.
2. Use the default version or a customized version of the shell script **mvsprpsm.sh** supplied with InfoPrint. See “Modifying the InfoPrint mvsprpsm.sh Shell Script” on page 307 for more information.

3. Assign a port number to the InfoPrint daemon and start the daemon using the **mvsprsd** command.

See “Using the mvsprsd Command to Start the Daemon” on page 311.

## How Do You Make AFP Resources Available?

Some jobs may require AFP resources located on the MVS system. You can use the Network File System (NFS) **mount** command to make MVS file systems containing resources accessible to the AIX system on which InfoPrint is running. Or you may have the resources located on the AIX system. You use the shell script **mvsprsd.sh**, supplied with InfoPrint in the **/usr/lpp/pd/bin** directory, to specify the location of the resources.

## How Are Print Options Passed to InfoPrint?

MVS users submitting MVS data sets for printing on InfoPrint-managed printer devices can pass a number of options that further define the requirements of their jobs. The InfoPrint daemon receives the options with the data set and passes the options to the shell script.

See “Passing the Parameter List from the mvsprsd Daemon to the Shell Script” on page 308 for information on the options.

## What Does the mvsprpsm.sh Shell Script Do?

The InfoPrint MVS Download shell script translates the print options specified with a downloaded MVS file into InfoPrint attributes and values. The shell script then builds an InfoPrint **pdpr** command using the **-x** flag to submit the attributes and values; it builds the name of the file to print from information received from the MVS system and the date and time the MVS file was received. The shell script then creates a log file and submits the **pdpr** command. A check is made to determine if InfoPrint accepts the command. If InfoPrint accepts the command, the InfoPrint MVS Download shell script deletes the log file and the data set received from the MVS system. Otherwise, the log and file remain in the defined file system.

## What Does the Log File Generated by the mvsprpsm.sh Shell Script Contain?

The filename of the log file has the following format:

jobname.dataset\_name.forms\_name.yyddd.log

The log file generated by the InfoPrint MVS Download shell script contains the following information:

- The date InfoPrint received the MVS data set and print options
- The print options sent to the shell script by the **mvsprsd** daemon
- A copy of the **pdpr** command issued by the shell script to print the file
- Any error messages issued in response to the **pdpr** command
- The return code from the **pdpr** command

**Note:** If InfoPrint accepts the command, the InfoPrint MVS Download shell script deletes the log file and the data set received from the MVS system. If you are having problems, you may want to comment out this behavior while debugging.

If the **pdpr** command fails, you can use the log file located in the file system you defined with the **-d** flag of the **mvsprsd** utility.

- Ensure the shell script received the correct parameters
- Perform InfoPrint troubleshooting procedures, such as using the **pdmsg** command to determine the cause of the problem with the **pdpr** command.

---

## Modifying the InfoPrint **mvsprpsm.sh** Shell Script

You can use the default version of the **mvsprpsm.sh** shell script, located in the **/usr/lpp/pd/bin** directory, or modify the shell script to meet the needs of your production printing environment. For example, you might include the path to AFP resources on the AIX system or change how the shell script generates the file name for the data set received from the MVS system. Or you might want to specify a default page definition.

### Recommendation

Copy the shell script to another directory such as **/var/pd** and modify the copy. This eliminates the possibility of service overwriting your modifications.

## Specifying AFP Resource Directories

The **mvsprpsm.sh** shell script contains the following lines, which are commented out by default:

```
# NOTE: Add resource-context-xxx search paths to the pdpr options
# if necessary. For example:
#outputstr="$outputstr resource-context-font=/font/reslib"
#outputstr="$outputstr resource-conctect-page-def=/dept123/pagedef:/acme/pagedef"
```

Use the format shown in the third and fourth lines to specify the paths to the directories containing AFP resources. Do not include the pound sign, **#**, when specifying the directories. You can specify multiple directories by separating them with colons. You can also specify MVS file systems accessed through the NFS **mount** command.

## Changing How the Shell Script Generates the File Name

The **mvsprpsm.sh** shell script contains the following lines, which cause the InfoPrint MVS Download shell script to include the MVS job identifier in the name of the file generated by the shell script:

```

# Rename the downloaded file to include the MVS job id (comment out
# if this behavior is not desired)
if [ "$paopt" != "" ; then
  JID=${paopt##*jobid=}
  if [ "$JID" != "$paopt" ] ; then
    JID=${JID%%, *}
    if [ "$sdq.$JID" != "" &rbrk, ; then
      mv $filename $JID.$filename
      filename=$JID.$filename
      mv $logfile $JID.$logfile
      logfile=$JID.$logfile
    fi
  fi
fi

```

If you do not want the MVS job identifier included, comment out the lines.

## Specifying a Default Page Definition

All line-data jobs downloaded from MVS systems require a page definition before you can print them using InfoPrint. If no page definition is specified, an error occurs. By default, the shell script contains the following line:

```

pagedef      )   outputstr="$outputstr page-definition$optparm" ;;

```

This causes the shell script to set the value for the **page-definition** attribute based on a value passed to the shell script by the **mvsprsd** daemon. The value passed by the daemon depends on options downloaded from MVS with the data set. You can add conditional processing to the shell script to specify a page definition if no page definition specification is downloaded with the file.

---

## Passing the Parameter List from the mvsprsd Daemon to the Shell Script

The InfoPrint **mvsprsd** daemon passes a parameter list for each data set it receives to the InfoPrint MVS Download shell script. The parameter list contains the following information:

1. The name of the downloaded data set in the format:

```

MVS_system_name.job_name.dataset_name.forms_name.yyddd.hhmssstABCD.PRD

```

where:

*MVS\_system\_name*

Specifies the name of the MVS system that downloaded the data set.

*job\_name*

Specifies the name of the job containing the data set.

*dataset\_name*

Specifies the name of the data set.

*forms\_name*

Specifies the name of the form identified with the MVS **FORMS** parameter.

*yyddd*

Specifies the year followed by the number of the day of the year.

*hhmsstABCD* Specifies the time the data set was received in hours, minutes, seconds, tenths of a second, hundreds of a second, thousands of a second, and hundred thousands of a second.

**PRD** Specifies that the file contains print data.

- The print-options string, which is a series of options and values. See Table 14 for the list of options. When you specify the **-k** flag with the **mvsprsd** command, InfoPrint also stores the options in a file whose name is in the following format:

MVS\_system\_name.job\_name.dataset\_name.forms\_name.yyddd.hhmsstABCD.JCL

where all the qualifiers in the name are the same as those for the name of the data set, with the exception of **JCL**. The **-k** flag specifies that the file contains print options.

- The logical printer name, which was specified with the **-q** flag of the InfoPrint **mvsprsd** command when the daemon was started.

## Translating Print Options to InfoPrint Attributes and Values

Table 14 shows the print options and values passed to the shell script in the print-options string, the corresponding InfoPrint attribute, and the attribute value used for the **pdpr** command for that job.

- MVS sends print option values in either uppercase or lowercase characters. MVS sends all print option values shown in italics in Table 14, such as *pagedef*, *formdef*, and *font1*, in upper case. It sends other values as shown in the table.
- InfoPrint sets most attribute values to exactly the same values received from the print-option values; Table 14 lists these values in italics within the **InfoPrint Attribute and Value** column.

<i>Table 14 (Page 1 of 2). Print Options Passed to InfoPrint MVS Download Shell Script</i>	
<b><i>Print Option Passed to Shell Script</i></b>	<b><i>InfoPrint Attribute and Value</i></b>
<b><i>-oac=account</i></b>	<b>"account-text=account"</b>
<b><i>-oaddress1=address1</i></b>	<b>"address1-text=address1"</b>
<b><i>-oaddress2=address2</i></b>	<b>"address2-text=address2"</b>
<b><i>-oaddress3=address3</i></b>	<b>"address3-text=address3"</b>
<b><i>-oaddress4=address4</i></b>	<b>"address4-text=address4"</b>
<b><i>-obu=building</i></b>	<b>"building-text=building"</b>
<b><i>-occtype=a</i></b> <b><i>-occtype=m</i></b> <b><i>-occtype=z</i></b>	<b>"carriage-control-type=ansi-ebcdic"</b> <b>"carriage-control-type=machine"</b> <b>"carriage-control-type=ansi-ascii"</b>  <b>Note:</b> The shell script checks if the job uses carriage control characters. If they are used, then InfoPrint sets this attribute and value based on the input parameter.
<b><i>-ochars=font1,font2,font3,font4</i></b>	<b>"chars=font1,font2,font3,font4"</b>
<b><i>-ocop=nnn</i></b>	<b>"copy-count=nnn"</b>

Table 14 (Page 2 of 2). Print Options Passed to InfoPrint MVS Download Shell Script

<b>Print Option Passed to Shell Script</b>	<b>InfoPrint Attribute and Value</b>
<b>-odata=line</b>	"document-format=line-data" <b>Note:</b> If the input value is not <b>line</b> , this value is not set and InfoPrint attempts to identify the correct format. If InfoPrint cannot identify the format, InfoPrint uses a format of <b>ascii</b> .
<b>-odatac=blkchar</b> <b>-odatac=blkpos</b> <b>-odatac=block</b> <b>-odatac=unblock</b>	"data-fidelity-problem-reported=position" "data-fidelity-problem-reported=character" "data-fidelity-problem-reported=none" "data-fidelity-problem-reported=all"
<b>-ode=department</b>	"department-text=department"
<b>-odu=no</b> <b>-odu=normal</b> <b>-odu=tumble</b>	"sides=1 plex=simplex" "sides=2 plex=simplex" "sides=2 plex=tumble"
<b>-of=F1 formdef</b>	"form-definition=F1formdef"
<b>-ofileformat=record</b> <b>-ofileformat=stream</b>	"new-line-option=counted-4-octet-aligned" "new-line-option=lf"
<b>-oin=nnn</b>	"printer-pass-through='-obinnn' "
<b>-ojobn=job_name</b>	"job-name=job_name"
<b>-ona=name</b>	"name-text=name"
<b>-ono=nodeid</b>	"node-id-text=nodeid"
<b>-offxb=nnn[.nnn]</b>	"x-image-shift-back=nnn[.nnn]"
<b>-offxf=nnn[.nnn]</b>	"x-image-shift=nnn[.nnn]"
<b>-offyb=nnn[.nnn]</b>	"y-image-shift-back=nnn[.nnn]"
<b>-offyf=nnn[.nnn]</b>	"y-image-shift=nnn[.nnn]"
<b>-opa=</b> <b>class=output_class</b> <b>destination=destination</b> <b>forms=form_name</b> <b>segmentid=nnn</b>	"printer-pass-through= '-oclass=output_class' '-odestination=destination' '-oforms=form_name' '-osegmentid=nnn' "
<b>-opagedef=P1 pagedef</b>	"page-definition=P1pagedef"
<b>-opr=programmer_name</b>	"programmer-text=programmer_name"
<b>-oprmode=SOSI1</b> <b>-oprmode=SOSI2</b>	"shift-out-shift-in=one" "shift-out-shift-in=two"
<b>-ore=P240</b> <b>-ore=P300</b>	"font-resolution=240" "font-resolution=300"
<b>-oro=room</b>	"room-text=room"
<b>-oti=title</b>	"title-text=title"
<b>-otrc=no</b> <b>-otrc=yes</b>	"table-reference-characters=false" "table-reference-characters=true"
<b>-ous=userid</b>	"user-id-text=userid"

---

## Using the mvsprsd Command to Start the Daemon

InfoPrint automatically starts the **mvsprsd** daemon when you start an InfoPrint server. However, if the daemon stops for some reason or you want to restart it using different start-up options, you can use the InfoPrint **mvsprsd** command to start the InfoPrint **mvsprsd** daemon. With the command, you specify an AIX file system in which to store downloaded data sets, a shell script name, a logical printer name, and whether print-option information is stored in a file. You start the daemon on the AIX processor that has InfoPrint installed. Once the **mvsprsd** daemon is operational, you can use MVS Download to submit a job to InfoPrint where the InfoPrint MVS Download shell script translates the JCL keywords and values to InfoPrint attributes and values and issues a **pdpr** command.

For the syntax and flags of the **mvsprsd** command, and for examples of its use, refer to *IBM InfoPrint Manager for AIX: Reference* or the **mvsprsd** man page.

---

## Resubmitting or Deleting MVS Download Orphaned Files

Orphaned files are old files left in the AIX file system because errors prevented InfoPrint from processing them; their file names follow the MVS Download file-name format, such as:

```
MVS_system_name.job_name.dataset_name.forms_name.yyddd.hhmmssABCD.PRD.
```

You should either correct the problem that prevented the job from processing and then resubmit the job or delete the files.

## Resubmitting an Orphaned File

If you started the **mvsprsd** daemon with the **-k** flag, InfoPrint saves print options downloaded with MVS data sets. By default, InfoPrint also stores the downloaded data set. InfoPrint saves both the data set and the print-options file in the directory you specify with the **-d** flag when you start the daemon. See “Passing the Parameter List from the mvsprsd Daemon to the Shell Script” on page 308 for the format of the file names for the data set and print-options file. If errors occur that prevent InfoPrint from processing the job, you can correct the errors and then resubmit the job.

For example, to resubmit the file

```
bldmvs1.records.records.form1.9701.1147351234.PRD using the print-options file  
bldmvs1.records.records.form1.9701.1147351234.JCL and requesting logical  
printer srv1-lp, enter the command:
```

```
/usr/lpp/pd/bin/mvsprsm.sh bldmvs1.records.recorda.form1.9701.1147351234.PRD  
"$(bldmvs1.records.recorda.form1.9701.1147351234.JCL) srv1-lp
```

**Note:** This example shows the command spanning across lines for readability. When actually entering the command, allow it to wrap on the AIX command line.



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## Part 6. Appendixes



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## Appendix A. Using the InfoPrint SMIT Operator's GUI

You can perform most InfoPrint operations tasks and some InfoPrint administrative tasks by using the InfoPrint SMIT operator's GUI.

This chapter provides information on customizing, starting, and accessing help for the InfoPrint SMIT operator's GUI. It also includes a brief description of the tasks you can perform through the interface.

---

### Customizing the InfoPrint SMIT Operator's GUI

Before using the InfoPrint SMIT operator's GUI, you specify which InfoPrint components and attributes you want to monitor by setting environment variables in one or more environment files. Initially, you can use the default environment file that is supplied with InfoPrint. During installation, InfoPrint adds information about the environment file in the **/etc/environment** file to provide system-wide defaults.

### Customizing the Default InfoPrint SMIT Operator's GUI Environment File

The default InfoPrint SMIT operator's GUI environment file is **ppo.env**, which InfoPrint stores in the **/usr/lpp/pd/bin** directory during installation. **ppo.env** fileThe **ppo.env** file contains a series of export statements for environment variables that specify information about your InfoPrint system. InfoPrint bases the setting of some environment-variable values on objects that are created during installation. Other environment variables have no values; you can update them as you expand your InfoPrint system. Figure 64 on page 316 shows the default environment file.

```

# Set up the PPO environment variables

if [ "$PPO_BIN" = "" ] ; then
    export PPO_BIN=B'
fi

if [ "$PPO_QUEUE_INFO_FILE" = "" ] ; then
    export PPO_QUEUE_INFO_FILE="$PPO_BIN/queue_info"
fi

export PPO_JOB_DETAILS_ATTRS="\
job-identifier,\
job-name,\
current-job-state,\
job-state-reasons,\
intervening-jobs,\
job-priority,\
p-pr-req,\
destinations-assigned,\
submission-time,\
started-printing-time,\
pages-completed,\
default-medium"
export PPO_QUEUE_ATTRS="queue-name,queue-state,\
actual-destinations-ready,actual-destinations-assigned,\
logical-destinations-ready,logical-destinations-assigned"
export PPO_PP_ATTRS="destination-name,destination-state,enabled,\
assoc-queue,problem-message,media-ready,job-batches-ready"
export PPO_FORM=""
export PPO_RETENTION="48:00"
export PPO_SERVER=`hostname`
export PPO_LP=LP-NAME
export PPO_LPS="LP-NAME"
export PPO_QUEUE=Q-NAME
export PPO_PPS="PP-NAME"
export PPO_JOB_BATCH=""
export PPO_CANCEL_ALL_OPTION="1"

```

Figure 64. Default Environment File - InfoPrint SMIT Operator's GUI

You can make copies of the default InfoPrint SMIT operator's GUI environment file customize the copies to match your InfoPrint system. You should create an environment file for each queue you have. Refer to *IBM InfoPrint Manager for AIX: Reference* for a table of environment variables that affect the InfoPrint SMIT operator's GUI. Then use an AIX editor to make changes to the environment file.

## Customizing the Queue Information File

While you are using the InfoPrint SMIT operator's GUI, you can change the queue you are monitoring if you previously set up a queue information file. A queue information file maps queue names to their corresponding environment files. Figure 65 on page 317 shows the contents of the default queue information file, `/usr/lpp/pd/bin/queue_info`.

```
queue_name_1 pathname-of-the-corresponding-ppo.env-file
queue_name_2 pathname-of-the-corresponding-ppo.env-file
```

Figure 65. Queue Information File - InfoPrint SMIT Operator's GUI

To set up and use a queue information file, complete the following steps:

1. Create an environment file for each queue that you want to monitor through the InfoPrint SMIT operator's GUI. Specify the appropriate values for the environment variables. Store the environment files in either the directory represented by the **PDBASE** environment variable or the directory represented by the **PDNAME\$P** environment variable. If operators on different AIX systems will share the files, store them in the directory represented by the **PDNAME\$P** environment variable. See "Customizing the Default InfoPrint SMIT Operator's GUI Environment File" on page 315.
2. Update the **queue\_info** file in the **/usr/lpp/pd/bin** directory. For example, you have two queues, **ksrv-q1** and **ksrv-q2**. Their respective environment files are **q1.env** and **q2.env**, located in the **/usr/lpp/pd/bin** directory. Update the **queue\_info** file with the following entries:

```
ksrv-q1 /usr/lpp/pd/bin/q1.env
ksrv-q2 /usr/lpp/pd/bin/q2.env
```

**Notes:**

1. You must include the full path for each environment file you specify.
2. If you create a queue information file with a different name or store it in a different directory, ensure that the **PPO\_QUEUE\_INFO\_FILE** environment variable in all of your environment files specifies the correct directory and file name.
3. To use the queue information file, you must start the InfoPrint SMIT operator's GUI with the **startppo** command. See "Starting the InfoPrint SMIT Operator's GUI" on page 318.

## Specifying Your Default Environment File

The **PPO\_ENV\_FILE** environment variable controls the environment file that the InfoPrint SMIT operator's GUI uses when you start the interface. During installation, the following line was added to the **/etc/environment** file:

```
PPO_ENV_FILE=/usr/lpp/pd/bin/ppo.env
```

This statement defines the environment file that is shipped with InfoPrint as the default. To use a different environment file, update the statement in the **/etc/environment** file.

For example, if you have a customized environment file that is called **master.env** and located in the **/var/pd** directory, use the following export statement:

```
PPO_ENV_FILE=/var/pd/master.env
```

---

## Starting the InfoPrint SMIT Operator's GUI

There are two methods of starting the InfoPrint SMIT operator's GUI:

- If you are at an AIX command prompt, enter one of the following commands:
  - To access the **Production Print Operations** panel in the AIXwindows mode, enter:  

```
startppo
```
  - To access the **Production Print Operations** panel in the ASCII mode, enter:  

```
startppo -t
```

All InfoPrint SMIT operator's GUI SMIT panels display in ASCII mode; however, status windows display as graphical motif windows.
- If you are using the InfoPrint SMIT administrator's interface, follow these steps:
  1. Return to the main panel titled **InfoPrint Production Printing System**.
  2. Select **Production Print Operations**.

### Notes:

1. You cannot change queues as specified by the queue information file if you access the InfoPrint SMIT operator's GUI through a SMIT session that was not started with the **startppo** command.
2. The **startppo** command also has a **-g** flag that you can use to control the initial size and position of the InfoPrint SMIT operator's GUI window. Specify the value for the flag in the form:  

```
widthxheight+xoffset+yoffset
```

For example, if you enter `startppo -g 800x500+100+200`, the window that opens is 800 pels wide, 500 pels high, offset 100 pels from the left edge of the terminal display, and down 200 pels from the top of the display.
3. You cannot start the ASCII mode of the InfoPrint SMIT operator's GUI in the background. For example, do not use the following command:  

```
startppo -t &
```

---

## Accessing the Online Help for the InfoPrint SMIT Operator's GUI

The online help for the InfoPrint SMIT operator's GUI provides descriptions of panel controls, such as buttons, entry fields, and lists. You can access the help information by using standard AIX SMIT help actions. If you are not familiar with using SMIT help, you can use the **Help** pull-down menu at the upper right corner of any AIXwindows SMIT panel. If you are using SMIT in the ASCII mode, access the main **System Management** panel. Highlight the panel title and press **F1** to access help on using SMIT.

## Requesting Help for Menu Selections on a SMIT Panel

The method of accessing help for a SMIT panel depends on whether you are in AIXwindows mode or ASCII mode.

### AIXwindows Mode

Complete the following steps to receive contextual help on a menu selection:

1. Press **Ctrl + F1**. All the menu selections on the panel are highlighted. The mouse pointer changes to a question mark. A **Help Message** window opens with instructions on how to access help. Figure 66 shows an example of the results of pressing **Ctrl + F1** for a SMIT panel.

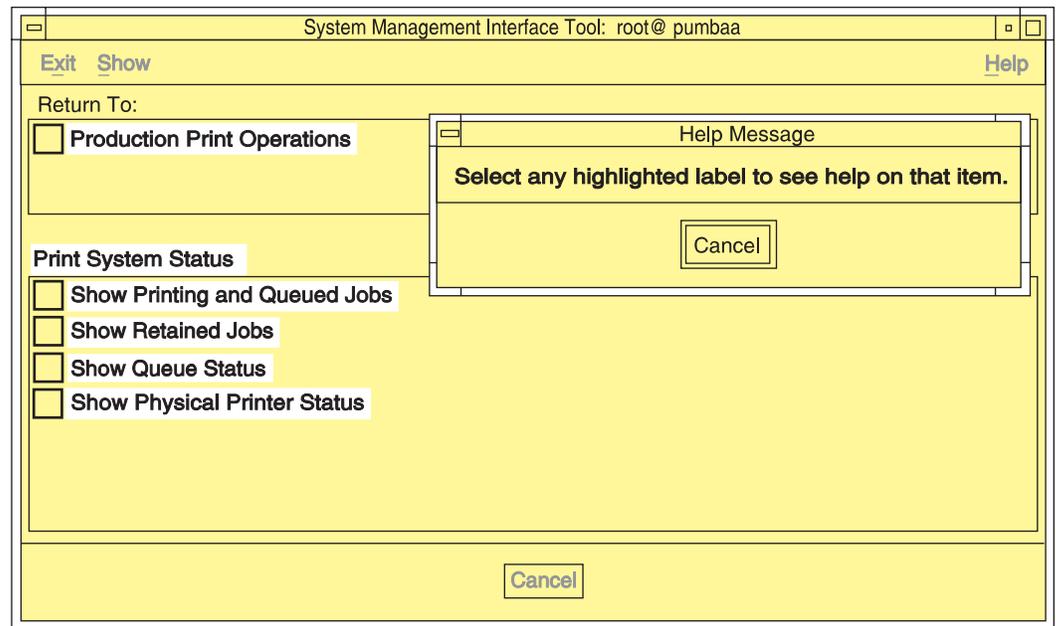


Figure 66. Help for SMIT Panel Menu Selections

2. Select any highlighted menu selection on the panel. An **Informational Message** window opens.
3. Select the **OK** button on the **Information Message** window after you have read the information. All menu selections on the panel remain highlighted.
4. If you want to view the help for another item, select it.
5. When you have completed viewing the information, select the **Cancel** button on the **Help Message** window to remove the highlighting and return to normal SMIT operations.

**Note:** You can also manually highlight a menu selection by using the Tab and arrow keys to navigate to the selection. Pressing **F1** for a highlighted menu item opens the help window for that item.

## ASCII Mode

Complete the following steps to receive contextual help on a menu selection:

1. Use the arrow keys to highlight a menu selection.
2. Press **F1**. A **CONTEXTUAL HELP** window opens.
3. When you have completed viewing the help information, press the **Enter** key. The window closes.

Complete the same steps to view the help for any other menu selections.

## Requesting Help for Fields and Buttons on a SMIT Window

The method of accessing help for fields and buttons on a SMIT window depends on whether you are in AIXwindows mode or ASCII mode.

### AIXwindows Mode

Complete the following steps to receive help for fields and buttons on a SMIT window that was accessed from a SMIT panel:

1. Select the button labeled with a question mark at the bottom right of the window. A **Help** window displays beneath the SMIT window. Figure 67 shows the results of selecting the question mark button.

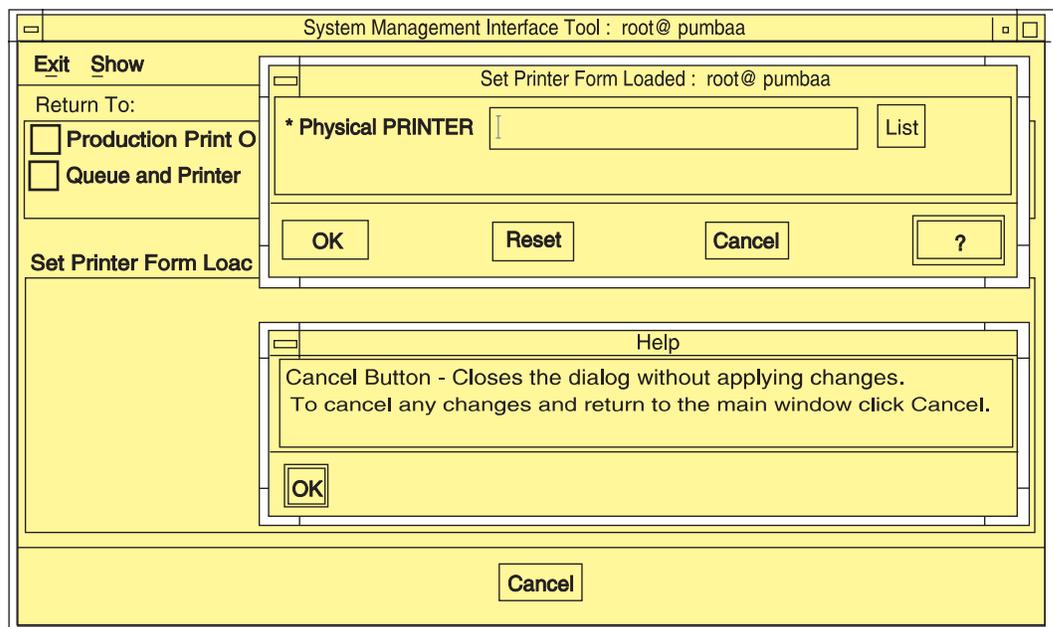


Figure 67. Help for SMIT Window Fields and Buttons

2. Move the mouse pointer over the fields and buttons in the window. The text in the **Help** window changes, displaying help for the field under the mouse pointer.
3. When you have completed viewing all of the information, select the **OK** button on the **Help** window to close it and return to normal SMIT operations.

## ASCII Mode

Complete the following steps to receive help for fields on a SMIT panel in which you can enter or list information:

1. Use the arrow keys to highlight a field name.
2. Press **F1**. A **CONTEXTUAL HELP** window opens.
3. When you have completed viewing the help information, press the **Enter** key. The window closes.

Complete the same steps to view the help for any other field selections.

## Requesting Help for SMIT Status Windows

The InfoPrint SMIT operator's GUI displays separate status windows that show the results of queries you make. The status windows also provide help for the tasks you can perform from them. The status windows are the same for both AIXwindows mode and ASCII mode. Figure 68 shows a status window.

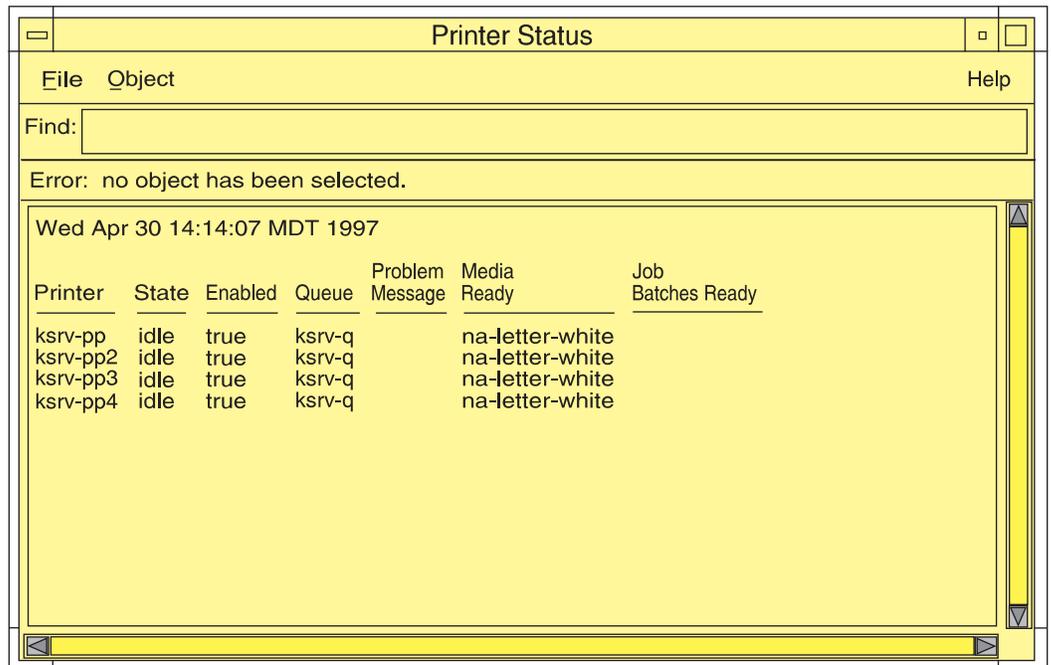


Figure 68. Help for SMIT Status Windows

Complete the following steps to receive help for menu selections on SMIT status windows.

1. Select the **Help** menu at the far right of the menu bar for the status window. A pull-down menu displays with one entry for each of the tasks you can perform from the window.
2. Select an item from the list. A help window displays providing instructions on performing the task.

---

## Tasks You Can Perform Using the InfoPrint SMIT Operator's GUI

The following is a brief description of the tasks you can perform using the InfoPrint SMIT operator's GUI. Use the online help for more detailed information. You can perform tasks in four major areas: monitoring print system status, controlling jobs, controlling queues, and controlling actual destinations .

### Monitoring Print System Status

The InfoPrint SMIT operator's GUI menu selections for system status allow you to perform the following tasks:

- List pending, processing, and printing jobs for the queue you are monitoring.
- List retained jobs in the queue.
- Show the status of the queue.
- Show the status of the actual destination or destinations that receive jobs.

You can customize the job, queue, and actual destination information that you receive by editing the environment file for the InfoPrint SMIT operator's GUI.

### Controlling Jobs

The InfoPrint SMIT operator's GUI menu selections for controlling jobs allow you to perform the following tasks:

- Pause and resume jobs.
- Hold and release jobs.
- Cancel active and retained jobs.
- Assign **job-batch** values to jobs.
- Change the priority of jobs.
- Assign jobs to specific actual destinations.
- Specify the forms that jobs require.
- View the status of jobs.
- View summaries of jobs that require specified forms or that belong to specified job batches.

### Controlling Queues

The InfoPrint SMIT operator's GUI menu selections for controlling queues allow you to perform the following tasks:

- Pause and resume queues. Paused queues continue to receive jobs, but InfoPrint does not schedule the jobs to actual destinations.
- Change the queue you are monitoring. You use the queue information file to control the queues that you can switch to, as well as the actual and logical destinations that are associated with the queue.

## Controlling Actual Destinations

The InfoPrint SMIT operator's GUI menu selections for controlling actual destinations allow you to perform the following tasks:

- Pause and resume actual destinations. Paused actual destinations still accept jobs from their queues, but they do not process and print the jobs.
- Disable and enable actual destinations. Disabled actual destinations process jobs already assigned to them but do not accept new jobs from their associated queues.
- Backspace and forward space actual destinations. You can cause InfoPrint to back up or skip forward a specified number of pages in the job currently printing on a specific actual destination.
- Specify the forms that are currently loaded in the printer device. You can specify the type of form that is loaded in each input tray of the printer.
- Specify **job-batches-ready** values for actual destinations. You can set up actual destinations so that they will process jobs that request a specific **job-batch** value.
- Shut down an actual destination so that it no longer processes jobs. You can specify how you want to shut down the actual destination with regards to how the shutdown process saves checkpoint information about the current job.



## Appendix B. Migrating from PSF for AIX 2.1 to InfoPrint

This chapter is intended for PSF for AIX customers who are migrating from PSF for AIX 2.1 to InfoPrint. It provides a brief list of PSF for AIX terms and functions, mapped to the InfoPrint term and function that provides equivalent support.

Table 15 (Page 1 of 2). PSF for AIX Terms And Their InfoPrint Equivalents

PSF for AIX Concept	InfoPrint Concept	Definition
Printer profile	Actual destination attributes	The values for printers come from actual destination attributes, which are specified when you define an actual destination in the Attributes notebook of the InfoPrint administrative graphical user interface (GUI).  For more information, see "Displaying the Attributes Notebook for an Actual Destination" on page 105.
PSF for AIX printer	InfoPrint actual destination	A software representation of the output device that can be configured to support particular features and manage the processing of jobs.
<b>qdaemon</b>	IBM InfoPrint Control	The software on the RS/6000 to which applications and job submitters submit jobs for printing. Also, you can perform operator and administrator functions and monitor the status of jobs.  For more information, see Chapter 1, "InfoPrint Configuration and Management Overview" on page 5.
PSF queue	InfoPrint logical destination	The InfoPrint object that receives jobs from job submitters and passes them on to an InfoPrint queue. The queue, in turn, passes the job to an actual destination.  <div style="text-align: center;"> <pre> graph TD     subgraph PSF         A[PSF Queue "prt1"]     end     subgraph InfoPrint         B[Logical Printer "prt1"]         C[Queue "prt1-q"]         D[Physical Printer "prt1-pp"]     end     A --&gt; B     B --&gt; C     C --&gt; D             </pre> </div> <p><b>prt1</b> is still the target of all job submissions.</p>
PSF for AIX job script	<b>pdpr</b> attribute files	By running the <b>jsmigr</b> migration script, you can convert your PSF for AIX job scripts to <b>pdpr</b> attribute files. You can use the converted job scripts for job submission through the InfoPrint SMIT Submit an InfoPrint Job panel.
Search paths for AFP resources	InfoPrint uses the following document attributes of jobs:  <b>resource-context-user</b> <b>resource-context-font</b> <b>resource-context-form-definition</b> <b>resource-context-overlay</b> <b>resource-context-page-definition</b> <b>resource-context-page-segment</b>	For details about the search paths, refer to <i>IBM InfoPrint Manager for AIX: Reference</i> .

Table 15 (Page 2 of 2). PSF for AIX Terms And Their InfoPrint Equivalents

<b>PSF for AIX Concept</b>	<b>InfoPrint Concept</b>	<b>Definition</b>
Input Manager	InfoPrint Control pdserver	Still supported internally for the processing of input data streams and configured externally through the InfoPrint SMIT Customize the Input Manager panel.
<b>psfin</b>	InfoPrint Submit, workstation clients, <b>pdpr</b> print command, and SMIT Submit an InfoPrint Job panel interfaces.	The primary methods of job submission are InfoPrint Submit, the InfoPrint workstation clients, the <b>pdpr</b> command, and the InfoPrint SMIT operator's GUI. However, InfoPrint still supports job submission from the AIX print commands that are supported in PSF for AIX Version 2 Release 1.
PSF for AIX user-exit programs	InfoPrint auxiliary-sheet objects and the document attribute <b>input-exit</b>	See Chapter 13, "Creating and Managing Auxiliary Sheets and User Exit Programs" on page 149.
<b>psfctl</b> command	Operations performed with the InfoPrint job and printer management GUI	See Chapter 5, "Using the InfoPrint Job and Printer Management GUI" on page 53.

---

# Glossary

This glossary provides definitions of specialized terms used by InfoPrint. This glossary does not define terms that are defined in non-technical dictionaries or that have no special meaning in information processing.

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## Sources and References

This glossary includes definitions from the following sources:

- Definitions reprinted from a published section of the International Organization for Standardization's (ISO) *Vocabulary—Information Processing* or from a published section of the ISO *Vocabulary—Office Machines* are identified by the symbol (I) following the definition.
- Definitions reprinted from working documents, draft proposals, or draft international standards of ISO Technical Committee 97, Subcommittee 1 (Vocabulary) are identified by (T), indicating that final agreement has not yet been reached among its participating members.
- Definitions reprinted from *Introduction to OSF DCE*, by Open Systems Foundation, published by Prentice-Hall, are identified by (OSF).
- Definitions from *Portable Operating System Interface (POSIX) System Administration Interface/Printing Standards Project* are identified by (P).
- Definitions from *Information technology—Document printing application (DPA)—Part 1: Abstract-service definition and procedures* are identified by (D).
- Definitions from *AIX Version 4.1 Topic Index and Glossary* are identified by (X).
- Definitions from *IBM Dictionary of Computing*.
- Definitions that are specific to IBM products are so labeled, for example, "In InfoPrint," or "In DCE."

This glossary uses the following cross-references:

**Contrast with.** This refers to a term that has an opposed or substantively different meaning.

**Synonym for.** This indicates that the term has the same meaning as a preferred term, which is defined in its proper place in the glossary.

**Synonymous with.** This is a backward reference from a defined term to all other terms that have the same meaning.

**See.** This refers you to multiple-word terms that have the same last word.

**See also.** This refers you to terms that have a related, but not synonymous, meaning.

## Special Characters

**.Guidefaults file.** A file created by InfoPrint in the home directory of a person using the InfoPrintGUI. 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).** (1) In computer security, a collection of all access rights for one object. (2) In DCE, a list associated with each object in the namespace that specifies the access authorization level for each user or user group.

**ACL.** Access Control List.

**acl editor.** A command line interface that allows you to 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*, *fax 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).** An IBM 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).** (1) 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. (2) 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 RS/6000 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 may have transformed the data stream of the job prior to the backend program sending it to the printer device.

**AIX.** Advanced Interactive Executive.

**AIX-attached printer.** (1) A printer device, attached to an RS/6000 through the network or through a serial or parallel port, that receives jobs from an AIX print queue. (2) In InfoPrint, a PSF physical printer that represents an AIX-attached printer device. See also *channel-attached printer, direct-attached printer, TCP/IP-attached printer, upload-SNA-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.** (1) The rendering of hard-edged objects so that they blend smoothly into the background. PhotoShop offers anti-aliasing when rasterizing an EPS file. (2) 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, fax, color, audio, bar code, and multimedia.

**archiving.** The transfer of digital information from an online system onto magnetic tape, 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.** (1) Pertaining to two or more processes that do not depend upon the occurrence of specific events, such as common timing signals. (T) (2) 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*, *channel-attached printer*, *direct-attached printer*, *TCP/IP-attached printer*, and *upload-SNA-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 within 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, the program that is invoked by the **qdaemon** process 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.** (1) A code representing characters by sets of parallel bars of varying thickness and separation that are read optically by transverse scanning. (2) 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.** (1) The cover and materials that hold a book together. See *edition binding*, *perfect binding*, *spiral binding*, *wire-o binding*. (2) The process of applying the binding to a book. (3) In InfoPrint, assigning a job to an actual destination. See *early binding*, *late binding*. (4) In DCE, pointers stored in a DCE cell that are used to connect clients to servers.

**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.** (1) In platemaking, an exposure. Burn is named because of the extremely bright ultraviolet lamps used to transfer images from film to plate. (2) In photography, to lengthen the final exposure time to increase the final density of print.

## C

**cathode ray tube (CRT).** A vacuum tube in which a beam of electrons can be moved to draw lines or form characters or symbols on its luminescent (phosphor-coated) screen. CRTs are the heart of all modern computer display screens. Black and white displays have only one phosphor scanned by one electron beam, while color displays have RGB phosphors scanned by three beams.

**CDE.** Common Desktop Environment.

**cell.** Synonym for *DCE cell*.

**Cell Directory Service.** A DCE component that manages a database of information about resources within a cell.

**channel-attached printer.** (1) A printer attached to an RS/6000 by cables, rather than through telecommunication lines. (2) In InfoPrint, a PSF physical printer that represents a channel-attached printer device. See also *AIX-attached printer*, *direct-attached printer*, *TCP/IP-attached printer*, *upload-SNA-attached printer*, *upload-TCP/IP-attached printer*.

**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 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. IBM InfoPrint Control and IBM InfoPrintSubmit include clients; you can also install the IBM InfoPrint Select clients on workstations.

**CMY.** Cyan, magenta, yellow.

**CMYK.** Cyan, magenta, yellow, black.

**collator.** In some printers, for example, the IBM InfoColor 70, 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.

**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.

**CRT.** Cathode ray tube.

**CTS.** Cutter-trimmer-stacker.

**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.

**DAT.** Digital audio tape.

**DataBase 2/6000 (DB2\*/6000).** The component of the InfoPrint Library that indexes data for easy retrieval.

**data stream.** (1) All information (data and control commands) sent over a data link. (2) A continuous stream of data that has a defined format. (3) 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.

**DCE.** Distributed Computing Environment.

**DCE authority.** The permission granted by DCE to access an object.

**DCE cell.** The basic unit of operation and administration in DCE. A group of DCE machines that

work together and are administered as a unit. A cell represents a group of users, systems, and resources that typically have a common purpose and share common DCE services.

**DCE login ID.** The identifier of a person logging into DCE. DCE uses this ID to determine a user's authenticity and authorization levels for accessing and modifying data in the DCE cell.

**DCE ticket.** The time-limited DCE authority granted whenever a user logs into DCE. When the DCE ticket expires, the user must log into DCE again in order to access objects protected by DCE.

**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 within 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 an *default document* or an *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*, *fax destination support system*, *PSF destination support system*, *3170 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*.

**DFS.** Distributed File Service.

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

**digital audio tape (DAT).** A high-capacity, low-cost bulk storage system used for archiving, copying (for backup purposes), and transferring large files. Typical DAT units store 1.3 GB on inexpensive cassette tapes.

**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.** (1) A printer device, attached to an RS/6000 through the network or through a serial or parallel port. (2) In InfoPrint, a PSF physical printer that represents a direct-attached printer device. See also *AIX-attached printer*, *channel-attached printer*, *TCP/IP-attached printer*, *upload-SNA-attached printer*, *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 Computing Environment (DCE).** A software system from the Open Software Foundation (OSF). DCE provides the services that allow a distributed application to interact with a collection of possibly heterogeneous computers, operating systems, and networks as if they were a single system.

**Distributed File System (DFS).** A DCE component consisting of a single, integrated file system that is shared among all DCE users and host computers in a DCE cell. DFS allows users to access and share files stored in a network, without having to know the physical location of the files. It also prevents users from simultaneously modifying the same information.

**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 resides 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 in order to smooth the result.

**document.** In InfoPrint, an object representing a grouping of data within 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 within 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 within 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. Values for printing with the IBM InfoColor 70range as high as 600 dpi.

**DPA.** Document Printing Application.

**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.** (1) Printing on both sides of the paper. Contrast with *simplex printing (1)*. (2) 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*, *wire-o binding*.

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

**electronic mail.** Correspondence in the form of messages transmitted 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 within 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.

**extensions.** An IBM program-provided software component that enables users to incorporate variable data into fixed-text documents to produce personalized or customized documents.

## F

**fax destination.** In InfoPrint, an actual destination representing a fax device.

**fax destination support system.** In InfoPrint, the destination support system that supports fax destinations.

**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.** (1) A family of characters of a given size and style; for example, 9-point Helvetica. (2) One size and one typeface in a particular type family, including letters, numerals, punctuation marks, special characters, and ligatures. (3) 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.

**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 within 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.** (1) 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. (2) 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

**IBM InfoColor 70.** A duplex, process color, web-fed printer with 600-dpi resolution.

**IBM 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.

**IBM InfoPrint Control.** The administration and management component of IBM InfoPrint Manager for AIX. It runs on AIX and provides a complete set of system administrator and operator functions to control all aspects of a print environment, as well as job submitter printing functions to submit and control jobs.

**IBM InfoPrint Library.** A component of IBM InfoPrint Manager for AIX. IBM InfoPrint Library is a document archival and retrieval system in which job tickets and their associated resource files (graphics, fonts, images, and PostScript data) are stored and from which these data types can be retrieved for reuse.

**IBM InfoPrint Manager for AIX.** The software component of IBM InfoPrint. IBM 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.

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

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

**IBM InfoPrint Scan.** The component of IBM InfoPrint Manager for AIX that allows users to scan images as TIFF files to be included in jobs submitted by InfoPrint Submit from a Windows workstation.

**IBM InfoPrint Select.** The component of IBM InfoPrint Manager for AIX that allows users to submit jobs from an OS/2 or Windows workstation.

**IBM InfoPrint Submit.** The component of IBM InfoPrint Manager for AIX that allows users to submit jobs with a job ticket from a Windows or Macintosh workstation.

**IBM InfoPrint 20.** A black and white, large-format, cut-sheet, workgroup laser printer with optional duplexing and 600-dpi resolution.

**IBM InfoPrint 4000.** A duplex, black and white, continuous-forms printer with 600-dpi resolution.

**IBM InfoPrint 60.** A duplex, black and white, cut-sheet printer with 600-dpi resolution.

**icon.** A graphic symbol displayed on a screen that a user can select 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.** (1) IBM InfoPrint. (2) In IBM InfoPrint software publications, IBM InfoPrint Manager for AIX or any of its components, especially IBM InfoPrint Control.

**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).** (1) An all-points-addressable data stream that enables users to position text, images, and graphics at any defined point on a printed page. (2) Information that the host sends to IBM IPDS printers. This information generally contains basic formatting, error recovery, and character data and enables the printers to make decisions. (3) 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 transmitting 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 Internet Protocol address of the server in a dotted decimal format where each node is an integer. (For example, 9.99.9.143).

**IPDS.** Intelligent Printer Data Stream.

**ISO.** International Organization for Standardization.

## J

**job.** In InfoPrint, an object that represents a request to print or transmit one or more documents together in a single session. A job includes the data to be printed or transmitted and resources such as fonts, images, and overlays. Depending on how it was submitted, it may 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.** (1) A name or symbol that identifies a parameter. (2) 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 IBM 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*.

**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).

**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.** (1) The human language and character set of information presented to a user. (2) In InfoPrint, the language InfoPrint uses when sending notification and error messages or displaying the InfoPrint graphical user interfaces.

**log.** (1) A collection of messages or message segments added to a file for accounting or data collection purposes. (2) 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, electronic mail systems, or fax machines. 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 within 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.

**name service.** The DCE service that administers the namespace and provides the network binding information that a client requires to access the server.

**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 resides.

**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*, *resettable attribute*.

**notification.** (1) The act of reporting the occurrence of events. (2) In InfoPrint, notification of events appears as messages in event logs or messages sent to administrators, operators, and job submitters. In the InfoPrintGUI, 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 within 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. OSF developed the Distributed Computing Environment (DCE).

**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.

## P

**PAC.** Privilege Attribute Certificate.

**page definition.** (1) A resource that contains the formatting controls for line data. (2) 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. Palladium was selected in 1990 as the DCE distributed printing technology. InfoPrint was designed using Palladium concepts.

**pane.** In the Work Area of the InfoPrint administrator's 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.

**pdcrdcs.** In InfoPrint, a utility used to create directories within the DCE namespace.

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

**PDF.** (1) Portable Document Format. (2) 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*, *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*.

**plug-ins.** A component of Adobe PageMaker that enables users to incorporate variable data into fixed-text documents to produce personalized or customized documents.

**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.

**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 which 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 may or may 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, and 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.

**Privilege Attribute Certificate (PAC).** In DCE, a certified set of access privileges that can be presented by a user or administrator to establish access rights to objects.

**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.

**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.** (1) 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. (2) 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 may change based on other activity.

**ready.** (1) A state in which an object is ready and able to perform tasks. (2) 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.** (1) The accuracy of printing on paper relative to the edges of the paper. (2) The accuracy of printing a single color (cyan, magenta, or yellow) relative to black. (3) The accuracy of printing on one side of a page relative to printing on the reverse side of the page.

**Remote Procedure Call (RPC).** A DCE component that manages communication between clients and servers in a DCE environment. It allows requests from a client program to access a procedure anywhere in the network.

**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.** (1) Raster image processor. (2) 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.

**RS/6000.** 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.

## 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 within 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 may be printed on one or both

sides of the paper. Contrast with *tumble*; see also *simplex printing*, *duplex printing*.

**simplex printing.** (1) Printing on only one side of the paper. Contrast with *duplex printing (1)*. (2) 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*, *wire-o binding*.

**spot color.** Individual colored inks formulated to exactly match a specified color. Spot color is used when CMYK process color is unable to 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.** A bit template indicating which part of an IP address represents the network. A 1 in the subnet mask means that the corresponding bit in the IP address is part of the network address; a 0 means that it is not. For example, if the IP address is 9.99.12.137 and the subnet mask is 255.255.255.0, the network address is 9.99.12.0.

**subnetwork.** (1) Any group of nodes that have a set of common characteristics, such as the same network ID. (2) 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 allows you to perform tasks without entering any commands.

**Systems Network Architecture (SNA).** The description of IBM's logical structure, formats, protocols, and operational sequences for transmitting 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.** (1) A printer device attached to an RS/6000 through telecommunication lines using the TCP/IP protocol. (2) In InfoPrint, a PSF physical printer that represents a TCP/IP-attached printer device. See also *AIX-attached printer*, *channel-attached printer*, *direct-attached printer*, *upload-SNA-attached printer*, *upload-TCP/IP-attached printer*.

**template.** In the InfoPrint administrator's 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*, *DCE 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*, *spread*.

**TRC.** Table Reference Character.

**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 administrator's 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-SNA-attached printer*, *upload-TCP/IP-attached printer*.

**upload-SNA-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 SNA network. See also *AIX-attached printer*, *channel-attached printer*, *direct-attached printer*, *TCP/IP-attached printer*, *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*, *channel-attached printer*, *direct-attached printer*, *TCP/IP-attached printer*, *upload-SNA-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 transmitting 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).** (1) An IBM licensed product that manages the resources of a single computer so that multiple computing systems appear to exist. (2) 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 administrator's GUI, an area within a pane that contains a group of objects related to the objects in the pane; for example, a queues well within 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*, *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 RS/6000 system, from which a user can perform command-line functions and run X-Windows based applications.

**Xtensions.** A UNIX-provided software component that enables users to incorporate variable data into fixed-text documents to produce personalized or customized documents.

## Numerics

**3170 destination support system.** The destination support system used by the IBM InfoColor 70 to print jobs.

**3170 physical printer.** A physical printer representing an IBM InfoColor 70 printer device.



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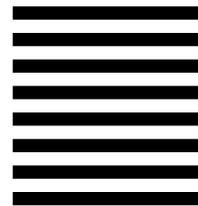
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