IBM InfoPrint Manager for AIX

IBM InfoPrint Manager for AIX Configuring and Using the Adobe PostScript Extreme System

Version 2.1

S544-5488-00

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About This Publication

This publication describes the IBM InfoPrint Manager for AIX (InfoPrint).

- Commands
- Flag used with AIX print commands
- Administrative utilities
- Daemon utilities
- Transforms
- Object attributes

Who Should Use This Publication

This publication describes the Adobe PostScript Extreme that can used to print both PostScript and Portable Document Format (PDF) files quickly. The Adobe PostScript Extreme rasterizes multiple pages of a PostScript or PDF document at the same time, resulting in improved throughput and shorter time to print the first page. If your commercial print shop or industry systems (IS) print shop prints a great deal of either PostScript data or PDF data, Adobe PostScript Extreme can improve your turnaround time by either greatly reducing or eliminating off-shift printing.

This publication is intended for the AIX systems administrator and the network administrator who must install Adobe PostScript Extreme as a feature on your IBM InfoPrint Control.

About the Documentation for InfoPrint

InfoPrint provides the following types of documentation:

- Hardcopy publications
- **readme.txt** files
- Online help for the InfoPrint administrative graphical user interface (GUI)
- Online help for the InfoPrint SMIT production printing system interface
- Online help for the InfoPrint SMIT production print operations interface
- Online help for the InfoPrint SMIT job-submission interface
- Manual (man) pages
- InfoPrint online message catalog
- InfoPrint library in portable document format (PDF)

The InfoPrint Publication Library

InfoPrint provides the following publications. You can order printed copies of any of the publications from IBM by requesting the form number for the publication:

- *IBM InfoPrint Manager for AIX: Executive Summary*, G544-5478. For print shop managers and administrators, this publication describes the print shop environment and the role that InfoPrint plays. It provides an executive-level overview of the InfoPrint product and introduces the terminology that applies to printing in both a data-center and a print-for-profit environment. A PDF file of this publication is provided on a CD-ROM with the InfoPrint installation materials.

- *Planning for and Installing IBM InfoPrint Manager for AIX*, G544-5471. For administrators responsible for setting up the default environment for both data-center and print-for-profit customers. It provides pre-configuration planning issues that should be decided before installing and configuring IBM InfoPrint Manager for AIX. The text expands upon the terminology introduced in the *IBM InfoPrint Manager for AIX: Executive Summary*. A PDF file of this publication is provided on a CD-ROM with the InfoPrint installation materials.
- *IBM InfoPrint Manager for AIX: Using IBM InfoPrint Control for Production Printing*, S544-5473. For administrators and operators responsible for running InfoPrint in a data-center environment, it covers the primary administrator and operator tasks necessary for setting up an InfoPrint environment, scheduling and submitting jobs, as well as managing the output. The job-scheduling information also applies to job submitters. A copy of this publication is provided with the InfoPrint installation materials. A PDF file of this publication is also provided on CD-ROM with InfoPrint.
- *IBM InfoPrint Manager for AIX: Using InfoPrint for Commercial Printing*, S544-5476. For administrators and operators responsible for running InfoPrint in a print-for-profit environment, it is the primary hardcopy information unit that introduces the software concepts of InfoPrint and provides configuration information and troubleshooting tips. A copy of this publication is provided with the InfoPrint installation materials. A PDF file of this publication is also provided on CD-ROM with InfoPrint.
- *PSF Direct Network Configuration Guide for System/370*, S544-5486. For system administrators or network specialists responsible for configuring a system for PSF Direct, which 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. A PDF file of this publication is provided on a CD-ROM with the InfoPrint installation materials.
- *IBM InfoPrint Manager for AIX: Printing from SAP R/3*, S544-5477. For production printing administrators, operators, and application programmers with the need to print PCL or PostScript output from the SAP R/3 application or print AFP data through the **sap2afp** data stream transform. This publication describes the installation, configuration, and printing capabilities available at SAP R/3 installations through IBM InfoPrint Manager for AIX.

  Note: This is an optional feature of InfoPrint.
- *IBM InfoPrint Manager for AIX: Configuring and Using Adobe PostScript Extreme*, S544-5488. For administrators responsible for configuring the Parallel raster image processing System that 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.

InfoPrint Publications Available through Your IBM Printing Systems Company Representative

The following publications are available from your IBM Printing Systems Company representative. Because these publications are regularly updated to provide the latest information, you must contact your IBM Printing Systems Company representative to obtain the latest version.

- *IBM InfoPrint Manager for AIX: Reference Guide*, S544-5475. For production printing 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.
- *IBM InfoPrint Manager for AIX: IBM InfoPrint Control Diagnostics Guide*, G544-5472. For production printing administrators and operators, this publication includes diagnostic procedures for isolating and correcting problems with InfoPrint, including configuration and printing problems.

Other Publications Related to InfoPrint

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

- *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.
- *IBM Page Printer Formatting Aid: User's Guide*, S544-5284. For administrators and job submitters, it 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: Printer Information*, G544-3290. For administrators and job submitters, it provides information on IBM printer devices.
- *IBM Data Stream and Object Architectures Mixed Object Document Content Architecture Reference*, SC31-6802. For administrators and job submitters, it provides information on the MOD:CA data stream.
- *IBM Data Stream and Object Architectures Image Object Content Architecture Reference*, SC31-6805. For administrators and job submitters, it provides information on the IOCA data stream.

Ordering Hardcopy Publications

To order additional printed copies of the InfoPrint publications, or to order printed copies of any IBM publication, contact IBM and request the publications by their associated order numbers.

readme.txt Files

The following files contain last-minute information about InfoPrint that the hardcopy publications or the online information do not contain:

/cdrom/readme.txt
/cdrom/aix/readme.txt
/cdrom/win/readme.txt
/cdrom/mac/readme.txt
/cdrom/books/readme.txt

You can use the AIX **more** command or an AIX editor, such as vi, to view the contents of the **readme.txt** files.

Online Help for the InfoPrint Administrative GUI

Online help is available for each InfoPrint administrative GUI application window. This help contains information about window areas, window buttons, templates, objects, actions, and tasks. The InfoPrint administrative GUI provides online help through:

- The **Help** button
- The **?** Item Help action icon
- Text in the information area at the bottom of each window

InfoPrint places the online help for the InfoPrint administrative GUI in the **/usr/lpp/pd/help/***LANG*, directory, where *LANG* is the name of a locale, such as **fr_CA** for Canadian French (ISO-8859-1).

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:

lprafp
mkfntmap
pdclean
pdcreate
pddelete
pddisable
pdenable
pdls
pdmod
pdpause
pdpr
pdpromote
pdq
pdreorder
pdresubmit
pdresume
pdrm
pdset
pdshutdown
pdspace
psfstat

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 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
ainurpt1
ainurpt2
ainurpt3
ainurpt4
ainurpt5
ainurpt6
cfu
jsmigr
opergui
pdcrdflt
pdcrmed
pdinitports
pdmigpp
pdmincfg
pdmsg
rc.pd
sense
startppo
start_server
startsrv
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

InfoPrint provides the man pages for commands, utilities, and transforms in seven languages: Canadian French, English, French, German, Italian, Japanese, and Spanish. Installed man pages reside in the **/usr/share/man/***LANG***/cat7** directory, where *LANG* is the name of a locale, such as **en_US** for English (ISO-8859-1) or **de_DE** for German (ISO-8859-1).

During installation, InfoPrint appends **:/usr/share/man/***LANG* to the **MANPATH** environment variable, making the InfoPrint man pages available.

For information about the flags 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 supported by each object. 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_aux_sheet
pd_att_document
pd_att_job
pd_att_log
pd_att_log_ptr
pd_att_medium
pd_att_phy_ptr
pd_att_queue
pd_att_res_context
pd_att_server

InfoPrint Online Message Catalog

InfoPrint supplies a message catalog for the messages 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:

0420
0421
0422
0423
0424
0425
5010

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 message-number
```

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

Note: InfoPrint provides message catalogs in seven different languages. InfoPrint installs the message catalog in the **/usr/lib/nls/msg/***locale* directory. The locale in which your session is running determines the catalog installed.

PDF Versions of the InfoPrint Library

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** directory. Use the Adobe Acrobat Viewer to view the publications, or use InfoPrint to print them.

The Organization of This Publication

This publication contains the following chapters and appendixes:

Chapter 1, What is the Adobe PostScript Extreme System?

This chapter provides a brief overview of the PostScript Extreme System.

Chapter 2, Prerequisites for Installing Adobe PostScript Extreme

This chapter describes the prerequisites necessary for configuring a PostScript Extreme System from both a hardware and a software perspective.

Chapter 3, Installing and Configuring the InfoPrint AIX System

This chapter describes the configuration procedures required on the InfoPrint AIX System.

Chapter 4, Installing and Configuring the Primary Adobe PostScript Extreme System

This chapter describes the configuration required on the primary AIX system (**prs**) to activate the Adobe PostScript Extreme system.

Chapter 5, Installing and Configuring the Secondary Adobe PostScript Extreme System

This chapter describes the configuration required on the secondary AIX system (**prs1**) to activate the Adobe PostScript Extreme system.

Chapter 6, Verifying Directory Structures on the Adobe PostScript Extreme Systems

This chapter describes the directories and permissions that you should have on all three AIX systems after configuring Adobe PostScript Extreme.

Chapter 7, Post Installation Adobe PostScript Extreme Diagnostics

This chapter describes how to test and verify your Adobe PostScript Extreme network. Installer on both Adobe PostScript Extreme AIX systems.

Chapter 8, Adobe PostScript Extreme Configuration File Options

This chapter describes PostScript configuration file and its contents on Adobe PostScript Extreme.

Chapter 9, Troubleshooting Errors in the Adobe PostScript Extreme System

This chapter describes the basic diagnostic tools that are provided with Adobe PostScript Extreme.

Appendix A, Fonts Required for Using the Adobe PostScript Extreme System

This appendix contains a description of where the fonts required for the PostScript Extreme System are located.

This publication also contains a glossary and an index.

Conventions Used in This Publication

This publication uses conventions for the following:

- Highlighting
- InfoPrint command notation

Highlighting

This publication uses four different types of highlighting:

Bold When used in the text of the publication, bold highlighting identifies commands, SMIT panels, directories, and other items whose names the system predefines, such as **pdpr** and **/usr/lpp/psf**.

Italic	When used in running text, italic highlighting identifies a variable item whose actual name or value you supply, such as *AttributesFileName* or *Notification*. Italics also identify publication titles.
`Monospace`	When used in SMIT-based examples, information in a monospaced font identifies the exact content and the specific values entered with a particular SMIT field.

Chapter 1. What is the Adobe PostScript Extreme System?

The Adobe PostScript Extreme system transforms both PostScript and Portable Document Format (PDF) data more quickly than the non-parallel raster image process (RIP) through the following steps:

1. A PostScript file is divided into individual PDF pages.
2. Each PDF page is converted back into PostScript data.
3. Each PostScript page is converted by the interpreter into a compressed rasterized page that can be sent to a printer.

Because multiple RIPs work on the data simultaneously, PostScript data can be converted and printed quickly.

Note: Because PDF files can be accessed by individual pages, a PDF file is not broken into individual pages. Instead, it is converted into PostScript data for printing.

How Can I Use Adobe PostScript Extreme?

If your data processing center or lithographic print shop runs a great deal of PostScript, the Adobe PostScript Extreme solution may prove a valuable, long-term solution to your printing concerns. By allowing multiple pages of PostScript to be rasterized at the same time, Adobe PostScript Extreme provides you improved throughput and shorter time to print the first page of data. If your print shop provides PostScript output exclusively, you can eliminate off-shift printing by installing and configuring Adobe PostScript Extreme as described in this publication.

The Adobe PostScript Extreme Configuration Overview

An installation containing Adobe PostScript Extreme has an InfoPrint AIX system that is connected to a Adobe PostScript Extreme configuration through Fast Ethernet 100base-T cables. The configuration consists of a network of different RS/6000 systems, the supporting hardware, and a collection of software application programs that work together across two systems to transform PostScript and PDF data into MO:DCA-P output data for printing.

The PostScript data stream transform client (**ps2afp**) connects to the **ps2afpd** program that resides on the Primary Adobe PostScript Extreme system, which sends the PostScript or PDF files to the coordinator program (**prs2afpd**) that resides in the Adobe PostScript Extreme configuration (as displayed in Figure 1 on page 2). The InfoPrint AIX system is connected to an IBM InfoPrint 4000 Model IR1/IR2 Printer through a fiber distributed data interface (100 Mbit/s fiber optic LAN) connection for printing the data.

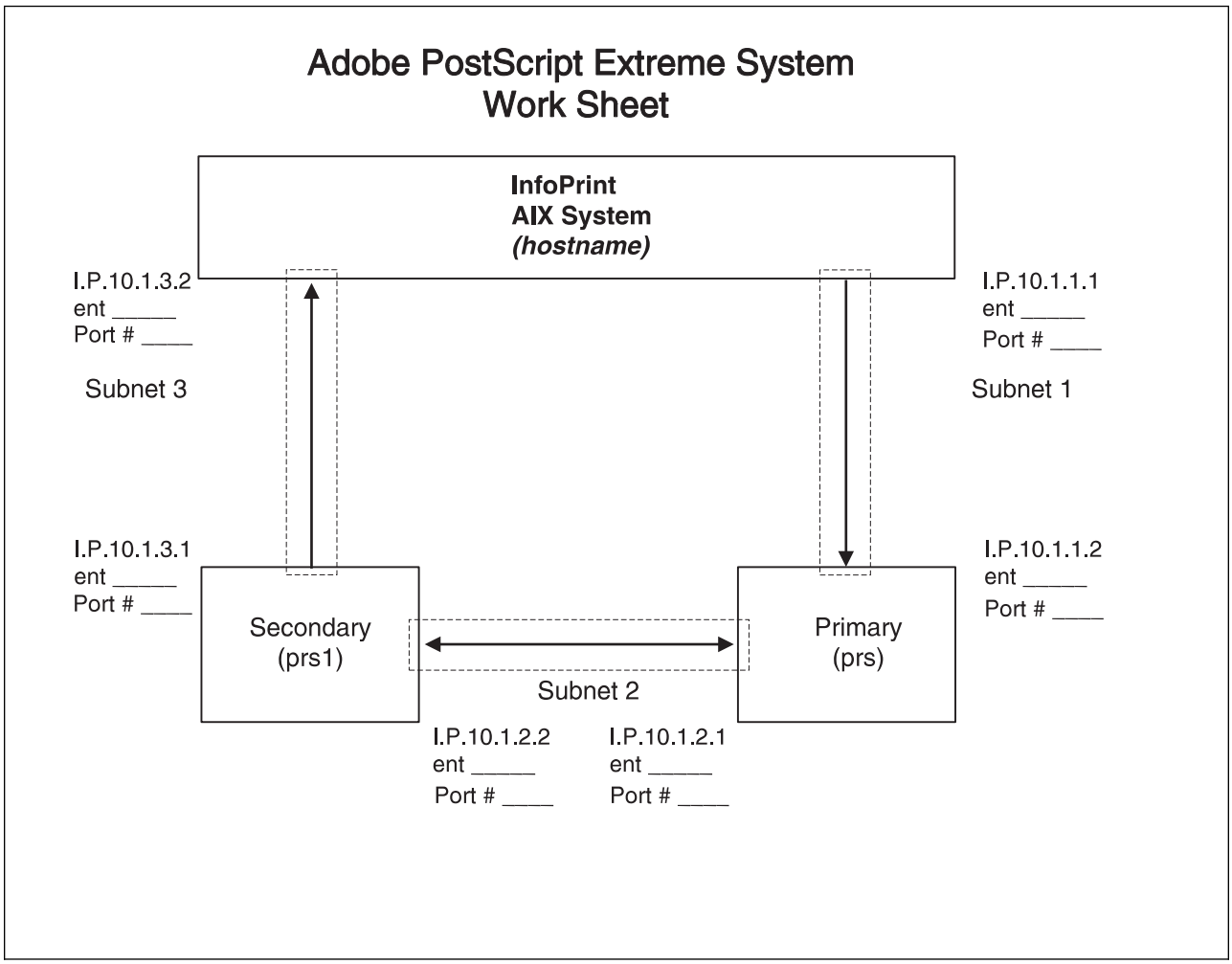

Figure 1. Worksheet for PostScript Extreme Configuration

Note: The standard configuration uses crossover cables to connect all three AIX systems.

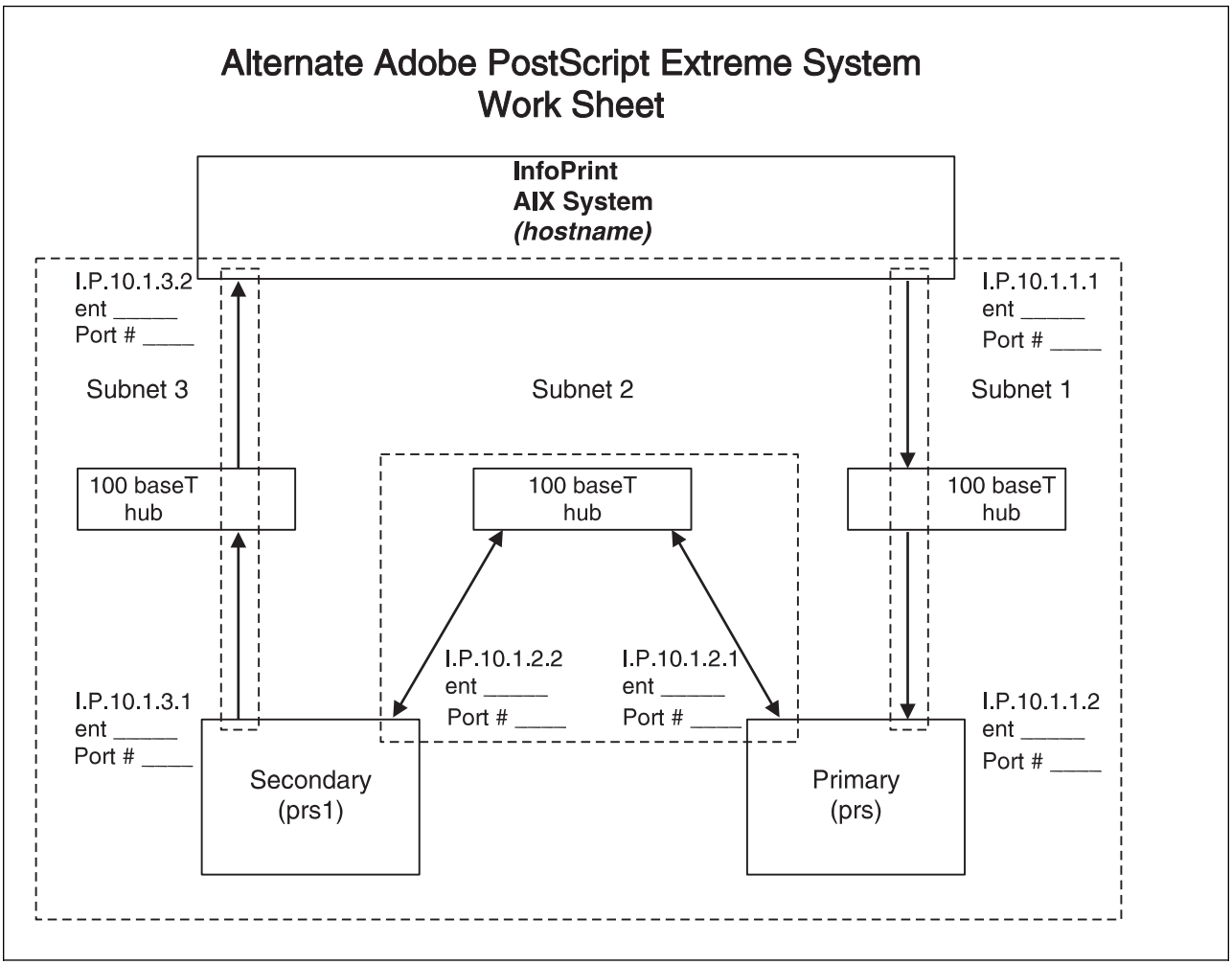

Figure 2. Worksheet for Alternate PostScript Extreme Configuration

Note: The alternate configuration uses 100 base-T hubs and straight-through cables for some connections.

How Do I Use This Book to Install Adobe PostScript Extreme?

This publication is designed to help you install and configure the Adobe PostScript Extreme feature of IBM InfoPrint Manager for AIX (InfoPrint) so that you can run the Adobe PostScript transform and rasterize multiple PostScript pages. Because Adobe PostScript Extreme is a system, you should follow the sequence and directions carefully. Ensure that you have the same hardware configuration as that described in this publication. If your conifiguration differs, certain instructions might not be the same. After a description of the prerequisites of the system, the book describes configuration of:

1. The IBM InfoPrint Manager for AIX system, which is subsequently referred to as the InfoPrint AIX system or *hostname*.
2. The Adobe PostScript Extreme Primary AIX system, which is referred to as **prs**.
3. The Adobe PostScript Extreme Secondary AIX system, which is referred to as **prs1**.
4. The InfoPrint installation options that are required for Adobe PostScript Extreme on both **prs** and **prs1**.

The remainder of this publication consists of troubleshooting diagnostics related to Adobe PostScript Extreme and information about using the Adobe PostScript transform.

Chapter 2. Prerequisites for Installing Adobe PostScript Extreme

The following section describes the hardware and software required to install the Adobe PostScript Extreme configuration at your installation.

Standard Hardware Configuration

The standard hardware configuration required for Adobe PostScript Extreme consists of two F-50 RS/6000 workstations. You can also include three Cisco Systems 100 MB/S Fast Ethernet network hubs (WS-C104 / FASTHUB 104T). The workstations must be configured with the following:

- 512 MB of random access memory (RAM)
- Primary system (**prs**) is an F50 RS/6000 workstation with 5 X 4 GB disk space

  The preferred configuration is an IBM 4161 Model 003 Multiple Printer Controller.
- Secondary system (**prs1**) is F50 with 3 X 4 GB disk space

  The preferred configuration is an IBM 4161 Model 004 Multiple Printer Controller.
- Six 100mb/s Fast Ethernet cards
- ASCII terminal for initial setup
- CD-ROM drive on both F50 workstations
- Firmware or microcode at level WIL97094.IMG or greater
- AIX 4.2.1 operating system
- 4-mm backup program tape
- licensed program product (LPP) **dce.pthreads** AIX option
- LPP **bos.info** AIX option

Standard Software Configuration

The standard software configuration required for Adobe PostScript Extreme consists of the following:

- AIX 4.2.1 Operating System on hdisk0.
- The following options that can be installed on both the Primary and the Secondary through a SMIT-based install (see “Installing InfoPrint on the Primary” on page 39 and “Installing InfoPrint on the Secondary” on page 61):
  - Single Adobe PostScript RIP
  - PostScript fonts required with the single RIP
  - InfoPrint Message Catalogs
  - Executable programs that reside on either the Primary (**prs**) or the Secondary (**prs1**) workstation.

All fonts must be contained locally, on each RS/6000 system. For more information on required fonts, see Appendix A, “Fonts Required for Using the Adobe PostScript Extreme System” on page 83. The executable programs reside in the **/usr/lpp/psf/bin** directory, while **/usr/lpp/psf/prs** is the name of the **Adobe PostScript Extreme** configuration directory on both workstations where these programs can be configured (for more information see Chapter 8, “Adobe PostScript Extreme Configuration File Options” on page 73).

IBM recommends that you purchase preloaded F50 workstations from your IBM Printing Systems Company representative. If you have purchased preloaded systems from Endicott through your IBM Printing Systems Company marketing representative, the following software should already be appropriately installed and configured on your AIX systems. However, if you purchase the F50 workstations directly from IBM or through a third-party vendor, you can configure them through the instructions in this publication.

Note: When you install InfoPrint, all three systems require the single Adobe PostScript RIP, standard fonts, message catalogs, and calibration curves to run Adobe PostScript Extreme.

Using the Installation Keys for InfoPrint and Adobe PostScript Extreme

After completing the basic configuration required for the InfoPrint AIX system and the Primary and Secondary Adobe PostScript Extreme AIX systems, you must install InfoPrint on the Primary (see “Installing InfoPrint on the Primary” on page 39) and on the Secondary (see “Installing InfoPrint on the Secondary” on page 61). On both systems, you must have the installation keys required to install InfoPrint. For information on how to acquire the appropriate keys, refer to Table 1 on page 7.

Table 1 (Page 1 of 4). InfoPrint Installation Key Information by Geographies

Geography	Phone	FAX	VNET/EMAIL	Hours/Location
Argentina	54-1-319-6838 54-1-319-6837	54-1-319-6810 54-1-319-6719	n/a	IBM ARGENTINA
Austria	0660 311 461	+ 45 48142207	DKIBMKVM1 at IBMMAIL DKIBMKVM1(KEYS8) DKIBMK08@IBMMAIL.COM	8 a.m. - 11 p.m. Central European Time
Australia **Note:** Australia provides key registration for all Asia Pacific countries not listed in the table.	1800-812 894 (within Australia only) 61-2-9951 9629	1800-650 434 (within Australia only) 61-2-9951 9791	SYDVM1(KEYS)	Key Registration Center in Australia
Bahrain	973 210 880	973 210 576	BHGBMHBM@IBMMAIL.COM BAHVM1(JULIE)	n/a
Belgium & Luxembourg	0800 738 21	+ 45 48142207	DKIBMK05@IBMMAIL.COM DKIBMK05 at IBMMAIL DKIBMVM1(KEYS5)	8 a.m. - 11 p.m. Central European Time
Brazil	0800-21-6157	55 + 21 + 253-2587	n/a	n/a
Canada	1-800-IBM-CALL (426-2255)	1-800-565-6612 1-905-316-7771	TOROVM1(SWKEYS) TORIBM(SWKEYS) IBMMAIL(CAIBM36Z) swkeys@vnet.ibm.com	Monday through Friday: 8 a.m. - 6 p.m. Eastern Standard Time
Chile	56-2-6334400	56-2-6396999	VMANDINO(ASOTO)	IBM Chile S.A.C.
Colombia	1-527-0111	1-527-9839	n/a	IBM Del Colombia S.A.
Cyprus	0800 738 21	357 2 456372	ATHVM1(PETROU)	n/a
Denmark	80 32 16 19	+ 45 48142207	DKIBMK10@IBMMAIL.COM DKIBMK10 at IBMMAIL DKIBMVM1(KEYS10)	8 a.m. - 11 p.m. Central European Time
Ecuador	593-2-565100/1	593-2-565142	VMANDINO(LOLA)	IBM Ecuador C.A.
Egypt	20 2 3492533	20 2 5726350	CAIVM1(EZABY)	n.a
Finland	0800 1 145 66	+ 45 48142207	DKIBMK10@IBMMAIL.COM DKIBMK10 at IBMMAIL DKIBMVM1(KEYS10)	8 a.m. - 11 p.m. Central European Time

Table 1 (Page 2 of 4). InfoPrint Installation Key Information by Geographies

Geography	Phone	FAX	VNET/EMAIL	Hours/Location
France	0800 910 212	+ 45 48142207	DKIBMK06@IBMMAIL.COM DKIBMK06 at IBMMAIL DKIBMVM1(KEYS6)	8 a.m. - 11 p.m. Central European Time
Germany	49-511/516-4803	49-511/516-4086	SWKEY@DE.IBM.COM PHAVM01(SWKEY)	n/a
Greece	+30 1 6881111	+30 1 6801303	ATHVM1(KAPELLOS)	n/a
Hungary	0800 012 064	+ 45 48142207	DKIBMK07@IBMMAIL.COM DKIBMK07 at IBMMAIL DKIBMVM1(KEYS7)	8 a.m. - 11 p.m. Central European Time
Indonesia Country Code=749	62-21-523 8389	62-21-521 2933	JAKCM001(RAHMAN)	Key Registration Centre in Indonesia
Iran	0039259622558	0039270300107	ITAVMP01(COLOMBO)	n/a
Isreal	(03) 6978-227	(03) 6959-985	n/a	n/a
Italy	+ 39 1670.17001	+ 39 6005029 + 396007151	gpwd@it.ibm.com ITIBMKCZ at IBMMAIL ITHVM05(75880601)	n/a
Korea Country Code=766	82-2-781 7524	82-2-782 9146	IBMKR(KORCAD)	Key Registration Centre in Korea
Latin America Caribbean Center (LCR)	305-442-3734	305-442-3510	RHQVM15(THAYER)	IBM Latin America Caribbean Center
Malaysia Country Code=778	603-710-2791 (Direct) 603-717-7788 (General)	603-717-2188	IBMMY(KULVM) IBMMY(KOOIEC) kooiec@my.ibm.com	Key Registration Centre in Malaysia
Mexico	3.27.45.06	3.27.46.46	MEXVM2(RIVEROLL) MEXVM2(ESPARZA)	n/a
Netherlands	0800 0223 305	+ 45 48142207	DKIBMK05@IBMMAIL.COM DKIBMK05 at IBMMAIL DKIBMVM1(KEYS5)	8 a.m. - 11 p.m. Central European Time
Norway	80 01 00 62	+ 45 48142207	DKIBMK10@IBMMAIL.COM DKIBMK10 at IBMMAIL DKIBMVM1(KEYS10)	8 a.m. - 11 p.m. Central European Time

Table 1 (Page 3 of 4). InfoPrint Installation Key Information by Geographies

Geography	Phone	FAX	VNET/EMAIL	Hours/Location
Pakistan	+ 92 21 525-181	+ 92 21 568-2411	PKIBMRVM@IBMMAIL.COM PAKVM1(ASIM)	n/a
Peru	51-14-366345	51-14-369711	n/a	IBM DEL PERU S.A.
Poland	0800 045 11206	+ 45 48142207	DKIBMK07@IBMMAIL.COM DKIBMK07 at IBMMAIL DKIBMVM1(KEYS7)	8 a.m. - 11 p.m. Central European Time
Portugal	+ 351-1-7915122	+ 351-1-7915261	PKIBMRVM@IBMMAIL.COM PAKVM1(ASIM)	n/a
Saudi Arabia	6600007	966-2-6651163	JEDVM1(KHRISHN)	Saudi Business Machines, Ltd.
South Africa	0800 994 407	+ 45 48142207	DKIBMK04@IBMMAIL.COM DKIBMK04 at IBMMAIL DKIBMVM1(KEYS4)	8 a.m. - 11 p.m. Central European Time
Spain	900 994 547	+ 45 48142207	DKIBMK09@IBMMAIL.COM DKIBMK09 at IBMMAIL DKIBMVM1(KEYS9)	8 a.m. - 11 p.m. Central European Time
Sweeden	020 798 456	+ 45 48142207	DKIBMK10@IBMMAIL.COM DKIBMK10 at IBMMAIL DKIBMVM1(KEYS10)	8 a.m. - 11 p.m. Central European Time
Switzerland	0800 837 195	+ 45 48142207	DKIBMK08@IBMMAIL.COM DKIBMK08 at IBMMAIL DKIBMVM1(KEYS8)	8 a.m. - 11 p.m. Central European Time
Turkey	+ 90-212-280 09 00	+ 90-212-278 04 37	ISTVM2(ISIL)	IBM TURL LIMITED SIRKETI
Taiwan Country Code=858	886-03-475 9304	886-03-475 6917	TAIVM1(KEYCOOR)	Key Registration Centre in Taiwan
Venezuela	58-2-908-8527	58-2-908-8923	INGRIDB at VMANDINO	IBM DE VENEZUELA, S.A.
United Kingdom	0800 965 441	+ 45 48142207	DKIBMK04@IBMMAIL.COM DKIBMK04 at IBMMAIL DKIBMVM1(KEYS4)	8 a.m. - 11 p.m. Central European Time
United States	1-800-924-8989 or 1-303-924-4671	1-303-924-9644	MAHVM1(KEYREGS1) keyregs1@vnet.ibm.com	Monday through Friday: 6 a.m. - 6 p.m. Mountain Standard Time

Table 1 (Page 4 of 4). InfoPrint Installation Key Information by Geographies

Geography	Phone	FAX	VNET/EMAIL	Hours/Location
Central American and Latin American Countries Not Listed	+ 45 48175579	+ 45 48175566	DKIBMRSK@IBMMAIL.COM DKIBMVM1(KEYS)	Monday through Friday: 9 a.m. - 4 p.m. Central European Time
Other Countries in Europe, the Middle East, and Africa	+ 45 48175579	+ 45 48175566	DKIBMRSK@IBMMAIL.COM DKIBMVM1(KEYS)	9 a.m. - 4 p.m. Central European Time

Chapter 3. Installing and Configuring the InfoPrint AIX System

Preparing the InfoPrint AIX system for use with Adobe PostScript Extreme consists of the following procedures, completed in sequence:

1. "Configuring the InfoPrint AIX System."
2. "Configuring the Fast Ethernet Cards on the InfoPrint AIX System" on page 12.

Note: These instructions presume that you have already used the Installer to install IBM InfoPrint Manager for AIX on this AIX system.

Configuring the InfoPrint AIX System

The following describes how IBM InfoPrint Control, the InfoPrint software installed on the InfoPrint AIX system, must be configured to interact with the Primary (**prs**) and Secondary (**prs1**) Adobe PostScript Extreme Systems.

Note: To make these changes, you must log in to IBM InfoPrint Control as **root**.

1. Access the ***/*etc** directory so you can configure the **hosts** file by invoking the **Text Editor** icon from the CDE toolbar.
2. Add the following lines to the file:

   ```
   10.1.1.2    prs
   10.1.1.1    hostname
   ```

   where *hostname* is the host name of the InfoPrint AIX system.

   Note: If this AIX system has already been setup with a network, there may be an earlier *hostname* entry in this file. To avoid confusion with the Adobe PostScript Extreme system, comment out this earlier *hostname* entry.
3. Save the **hosts** file and exit the editor.
4. Access the ***/*etc** directory so you can configure the **rc.net** file by invoking the **Text Editor** icon from the CDE toolbar.

   Note: Because this file is often read-only, you must change the permissions to write to this file. You can modify permissions through either of the following line commands:

   ```
   chmod u+w /etc/rc.net
   ```
5. Once you have access, add the following lines to the bottom of the file:

   ```
   if[-f/usr/sbin/no]; then
   /usr/sbin/no -o rfc1323=1
   /usr/sbin/no -o thewall=16384
   /usr/sbin/no -o sb_max=262144
   /usr/sbin/no -o tcp_sendspace=131072
   /usr/sbin/no -o tcp_recvspace=131072
   /usr/sbin/no -o udp_sendspace=65536
   /usr/sbin/no -o udp_recvspace=65536
   /usr/sbin/no -o tcp_keepidle=240
   /usr/sbin/no -o tcp_keepintvl=60
   /usr/sbin/no -o ipqmaxlen=150
   ```

```
fi
#
if[-f/usr/samples/kernel/vmtune]; then
/usr/samples/kernel/vmtune -f 500 -F 550 -p 20 -P 80 -r 2 -R 48 -c 1024
fi
```

These TCP/IP configuration values provide for optimum performance on the Adobe PostScript Extreme system.

6. Save the **rc.net** file and exit the editor.
7. After you have installed the InfoPrint product, access the **/usr/lpp/psf/ps2afp** directory so you can configure the **ps2afp.cfg** file by invoking the **Text Editor** icon from the CDE toolbar.
8. Change the line

   ```
   server = 127.0.0.1
   ```

   to

   ```
   server = prs
   ```

   Note: This change removes access to the single PostScript interpreter on this AIX system. If you want to start the single PostScript interpreter, enter the following from the AIX command line before running the transform:

   ```
   ps2afp -S 127.0.0.1
   ```

9. Save the **ps2afp.cfg** file and exit the editor

Configuring the Fast Ethernet Cards on the InfoPrint AIX System

Because they exist on different subnets, installation and configuration of the Fast Ethernet cards requires the following procedures:

1. Install the Cards into the RS/6000 system.

   To perform this task, consult the following two publications:

   RS/6000: Adapters, Devices, and Cable Information for Multiple Bus Systems, **(SA38-0516)**
   Provides information about adapters, devices, and cables attached to or used within a system unit. This publication should come with your F50 RS/6000 System.

   PCI Adapter Placement Reference, **(SA38-0538)**
   Outlines Peripheral Component Interface (PCI) adapter slot placement restrictions and graphics adapter support configurations that are specific to your system unit.

2. Put the CD-ROM into the CD-ROM disk drive.

   For Adobe PostScript Extreme, you must have an Advanced Server CD-ROM that runs on AIX Operating system 4.2.1.

3. From a **dtterm** window, logon to the system as **root**
4. Install the cards through the AIX System Management Interface Tool (SMIT) by entering `smitty devices` (ASCII interface) and select **Install/Configure Devices Added After IPL**.

5. From the **Install/Configure Devices Added After IPL** panel, select the F4 key to generate a list.
6. From the `Input device / directory for software` pop up menu, select

   ```
   /dev/cd0       (SCSI Multimedia CD-ROM Drive)
   ```

7. Press the ENTER key.

   The AIX system checks to see if the device drivers are loaded. If these drivers are not loaded, the system retrieves them from the CD-ROM and installs them in the correct location.

8. Press the **F10** key to exit SMIT.
9. Now, you must correctly map the installed Ethernet cards to the correct Peripheral Component Interconnect (PCI) port number on the back of the F50. Be sure to keep track of these values by specifying them on Figure 1 on page 2.

   To determine the correct ports for the Ethernet Card that you just installed, enter the following from the AIX command line:

   ```
   lsdev -C | grep -i ether
   ```

   The AIX system displays the Ethernet Cards available:

   ```
   ent0       Available 10-80    IBM PCI Ethernet Adapter (22100020)
   ent1       Available 30-60    3Com 3C905-TX-IBM Fast EtherLink XL NIC
   ent2       Available 30-68    3Com 3C905-TX-IBM Fast EtherLink XL NIC
   ⋮
   et1        Available          IEEE 802.3 Ethernet Network Interface
   et2        Available          IEEE 802.3 Ethernet Network Interface
   ```

   In this example, you must install both `et1` and `et2` as interfaces to the `ent1` and `ent2` Fast Ethernet cards.

   The **Available** status tells you that the device has been defined on your system. The numbers that follow the status are the location codes. Because the F50 AIX system is new, you should have no problem finding available devices that have not yet been defined to your system. By checking the AIX location codes described in *RS/6000 7025 F50 Series Service Guide*, (SA38-0541), you can determine which PCI port to use for physically attaching the Ethernet Card to the F50. In this example, Ethernet Card **ent1** goes to location code `30-60`, which indicates slot 6.

10. To configure tcp/ip on this system, specify the following at the AIX command line:

    ```
    smitty tcpip
    ```

11. Take the following path:

    Further Configuration --> **Network Interfaces** -->

    Network Interface Selection -->

    Change/Show Characteristics of a Network Interface

12. From the **Available Network Interfaces** panel, select the appropriate Ethernet (et) card to configure. For example,

    ```
    et1     IEEE 802.3 Ethernet Network Interface
    ```

13. From the `Change / Show an IEEE 802.3 Ethernet Network Interface` panel, specify the values displayed in Figure 3 on page 14. You can specify these

values for ent1 on the Worksheet displayed in Figure 1 on page 2. Note that the values not provided as defaults are specified in boldface.

```
          Change / Show an IEEE 802.3 Ethernet Network Interface

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

                                          [Entry Fields]
  Network Interface Name                   et1
  INTERNET ADDRESS (dotted decimal)       [10.1.1.1]
  Network Mask                            [255.255.255.0]
  (hexadecimal or dotted decimal)
  Current STATE                            up
  Use Address Resolution Protocol (ARP)?  yes
  BROADCAST ADDRESS (dotted decimal)      []


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 3. Change / Show an IEEE 802.3 Ethernet Network Interface Panel

14. To properly configure tcp/ip for `et2`, press the **F3** key twice to get back to the **Change/Show Characteristics of a Network Interface** panel.
15. From the **Available Network Interfaces** panel, select the appropriate Ethernet (et) interface to configure. For example,

    ```
    et2      IEEE 802.3 Ethernet Network Interface
    ```

16. From the **Change / Show an IEEE 802.3 Ethernet Network Interface** panel, specify the values displayed in Figure 4. You can specify these values for ent2 on the Worksheet displayed in Figure 1 on page 2. Note that the values not provided as defaults are specified in boldface.

```
          Change / Show an IEEE 802.3 Ethernet Network Interface

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

                                          [Entry Fields]
  Network Interface Name                   et2
  INTERNET ADDRESS (dotted decimal)       [10.1.3.2]
  Network Mask                            [255.255.255.0]
  (hexadecimal or dotted decimal)
  Current STATE                            up
  Use Address Resolution Protocol (ARP)?  yes
  BROADCAST ADDRESS (dotted decimal)      []


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 4. Change / Show an IEEE 802.3 Ethernet Network Interface Panel

17. Once you have filled in these values, and entered this command successfully, press **F10** to exit SMIT.

Rebooting the InfoPrint AIX System

To ensure that all these changes take effect, you must reboot this AIX system. At the AIX command line, enter:

```
shutdown -Fr
```

Once you have completed these tasks, the InfoPrint AIX system is ready to use Adobe PostScript Extreme.

Chapter 4. Installing and Configuring the Primary Adobe PostScript Extreme System

Preparing the Primary (**prs**) Adobe PostScript Extreme system consists of the following procedures, completed in sequence:

1. "Basic Configuration of the Primary Adobe PostScript Extreme System."
2. "Configuring the Primary Adobe PostScript Extreme for the Network" on page 31.
3. "Configuring the Fast Ethernet Cards on the Primary system" on page 35

Basic Configuration of the Primary Adobe PostScript Extreme System

These procedures consist of starting the workstation, creating data volume groups and paging space, and finally striping the volumes for performance benefits. Note that the basic set up tasks can be completed through the **System Management Interface Tool** (**SMIT**). The following directions use SMIT.

1. If you are performing these tasks from an ASCII terminal, you must first set the terminal display. From the AIX prompt, enter the following command:

   ```
   export TERM=ibm3151
   ```

2. To set both the time and the **root** password for the Primary (**prs**) Adobe PostScript Extreme, type **smitty** at the AIX command line and use the following path:

   System Environments -->

   Change / Show Date and Time

3. From the **Use DAYLIGHT SAVINGS TIME?** pop-up menu, select either yes or no.
4. Press the **F3** key twice to access the **Systems Management** panel, then use the following path:

   Security & Users --> **Passwords**

5. From the **Passwords** panel, select the `Change a User's Password` option and choose the **root** password.

To ensure that there is adequate paging space for all **root** volume groups (**rootvg**), you must consider the needs of the Adobe PostScript Extreme system.

The Primary Adobe PostScript Extreme system should contain 600MB of contiguous paging space, spread evenly across all disks (both **rootvg** and **datavg**). Because you will be specifying storage in logical partitions, remember that one logical partition is equivalent to 8MB.

The following describes how storage can be allocated:

Adobe PostScript Extreme (Primary)
600MB / five disks = 120MB a disk; 15 8MB partitions

1. Press the **F3** key twice to access the **Systems Management** panel, then use the following path:

   System Storage Management (Physical & Logical Storage) -->

   Logical Volume Manager --> **Paging Space** -->

   Change / Show Characteristics of a Paging Space -->

2. From the **PAGING SPACE name** pop-up menu, select `hd6`.

   This allows you to set the paging space on the **rootvg** volume group. To set the paging space, you must check the current paging space on the Primary.

3. From the **Change / Show Characteristics of a Paging Space** panel, press **F9**

   This step sends you to an AIX shell from which you can enter the following command:

   ```
   lsps -a
   ```

   The display should resemble the following:

   ```
   Page Space  Physical Volume   Volume Group    Size   %Used  Active  Auto
   hd6         hdisk0            rootvg          64MB      21     yes   yes
   ```

   Note: Save the output from the **lsps** command to refer to later.

4. To exit the AIX shell, type `exit` on the command line.

5. From the **Change / Show Characteristics of a Paging Space** panel, specify a value for the `NUMBER of additional logical partitions` option.

   For example, since 64MB is the size of the existing paging space provided on the initial display for hd6:

   a. Subtract 64MB from 120MB.

   b. Divide the result (56MB) by eight.

      This step determines the size of each partition.

   c. The result indicates the need for seven partitions.

In the **Change / Show Characteristics of a Paging Space** panel, insert the values displayed in Figure 5. Note that this figure displays all values for this screen, presuming that you require seven partitions.

```
                Change / Show Characteristics of a Paging Space

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

                                          [Entry Fields]
 Paging space name                       hd6
 Volume group name                       rootvg
 Physical volume name                    hdisk0
 NUMBER of additional logical partitions [7]
 Use this paging space each time         yes
   the system is RESTARTED?


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 5. Change / Show Characteristics of a Paging Space panel

6. Press the **F10** key to exit SMIT.
7. To create a data volume group (**datavg**) for all hard drives except **hd0** (because it is part of the **rootvg** volume group), specify `smitty lvm` at the AIX command line and take the following path:

   Volume Groups --> **Add a Volume Group**

   In the **Add a Volume Group** panel, insert the values displayed in Figure 6. Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                              Add a Volume Group

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

                                          [Entry Fields]
 VOLUME GROUP name                       [datavg]
 Physical partition SIZE in megabytes    [8]
*PHYSICAL VOLUME names                   [hdisk1 hdisk2 hdisk3 hdisk4]
 Activate volume group AUTOMATICALLY     yes
   at system restart?
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 6. Add a Volume Group Panel

   Note: The number of hard drives specified on this panel depends upon your hardware configuration. Ensure that you are familiar with your hardware before completing this step.

8. Once you have filled in these values, and entered this command successfully, press the **F3** key twice to access the SMIT **Logical Volume Manager** panel.

9. From the **Logical Volume Manager** panel, access the following path:

   Paging Space --> **Add Another Paging Space**

   From the **VOLUME GROUP name** pop-up menu, select the `datavg` option.

10. From the **Add Another Paging Space** panel, insert the values displayed in Figure 7. Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                          Add Another Paging Space

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

                                          [Entry Fields]
 Volume group name                       datavg
 SIZE of paging space                    [15]
   (in logical partitions)
 PHYSICAL VOLUME name                    hdisk1
 Start using this paging space NOW?      yes
 Use this paging space each time         yes
         the system is RESTARTED?


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 7. Add Another Paging Space to Primary: First Physical Volume

Note: The `SIZE of paging space` value can vary, depending upon the number of hard drives on the AIX system.

11. Once you have filled in these values, and entered this command successfully, press the **F3** key and specify the `datavg` option from the **VOLUME GROUP name** pop-up menu again.

12. From the **Add Another Paging Space** panel, insert the values displayed on Figure 8. Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                          Add Another Paging Space

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

                                          [Entry Fields]
 Volume group name                       datavg
 SIZE of paging space                    [15]
   (in logical partitions)
 PHYSICAL VOLUME name                    hdisk2
 Start using this paging space NOW?      yes
 Use this paging space each time         yes
         the system is RESTARTED?


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 8. Add Another Paging Space to Primary: Second Physical Volume

13. Once you have filled in these values, and entered this command successfully, press the **F3** key and specify the `datavg` option from the **VOLUME GROUP name** pop-up menu again.
14. From the **Add Another Paging Space** panel, insert the values displayed in Figure 9. Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                          Add Another Paging Space

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

                                        [Entry Fields]
 Volume group name                     datavg
 SIZE of paging space                  [15]
   (in logical partitions)
 PHYSICAL VOLUME name                  hdisk3
 Start using this paging space NOW?    yes
 Use this paging space each time       yes
         the system is RESTARTED?


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 9. Add Another Paging Space to Primary: Third Physical Volume

15. Once you have filled in these values, and entered this command successfully, press the **F3** key and specify the `datavg` option from the **VOLUME GROUP name** pop-up menu again.
16. From the **Add Another Paging Space** panel, insert the values displayed in Figure 10. Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                          Add Another Paging Space

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

                                        [Entry Fields]
 Volume group name                     datavg
 SIZE of paging space                  [15]
   (in logical partitions)
 PHYSICAL VOLUME name                  hdisk4
 Start using this paging space NOW?    yes
 Use this paging space each time       yes
         the system is RESTARTED?


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 10. Add Another Paging Space to Primary: Fourth Physical Volume

Once these tasks have been completed, the Adobe PostScript Extreme AIX systems are ready to begin the performance enhancements that will ensure good performance.

Striping Logical Volumes on the Primary

To ensure good performance across the Adobe PostScript Extreme workstations, you need to stripe all logical volumes except for the operating system **rootvg** logical volumes. Striping spreads the data in a logical volume across several disk drives so that the I/O capacity of the disk drives can be used in parallel to access data on the logical volume. When logical volumes are striped, it allows for high-performance reading and writing of large sequential files.

Note: When striping, all logical volumes within a volume group must be striped. Note that a volume group must contain a minimum of two physical volumes if it is to be striped.

Table 2. Logical Volumes and Directories

Logical Volume	Directory
LV00	**/usr/lpp/psf**
LV01	**/var/psf/prs/rips**
LV02	**/var/psf/prs/in**
LV03	**/var/psf/prs/out**

1. To stripe logical volumes on a workstation, type **smitty** at the AIX command line and use the following path:

   System Storage Management (Physical & Logical Storage) -->

   Logical Volume Manager --> **Logical Volumes** -->

   Add a Logical Volume

2. From the **Add a Logical Volume** panel, specify `datavg` for the `VOLUME GROUP name` option.

3. From the **Add a Logical Volume** panel, insert the values displayed in Figure 11 on page 23.

   Note that the numbers available for the `logical volume NAME` vary, depending upon your hardware installation. Allow this value to default for each screen, being careful to specify the physical volume names, position on the volumes, and maximum number. For the purposes of this example, we have assumed that the four logical volumes are specified in sequence from `lv00` through `lv03` as shown in Table 2. This figure displays only those values that you need to add or change from the defaults provided.

   This adds the logical volume for the **/usr/lpp/psf** directory. This example assumes that the `Logical volume NAME` field has defaulted to **lv00**

```
                          Add a Logical Volume

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

                                          [Entry Fields]
⋮
*VOLUME GROUP name                       [datavg]
*Number of LOGICAL PARTITIONS            [124]
 PHYSICAL VOLUME names                   hdisk1 hdisk2 hdisk3 hdisk4
⋮
 POSITION on physical volume             middle
 RANGE of physical volumes               minimum
 MAXIMUM NUMBER of PHYSICAL VOLUMES      [4]
         to use for allocation
⋮
 Stripe Size?                            [64k]


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 11. Add the First Logical Volume to the Primary

Note: If you do not specify a minimum of two physical volumes within the logical volume under the `PHYSICAL VOLUME names` option, the operating system fails this command.

4. Once you have filled in these values, use the **F3** to return to the **Add a Logical Volume** panel.
5. From the **Add a Logical Volume** panel, specify `datavg` for the `VOLUME GROUP name` option.
6. From the **Add a Logical Volume** panel, insert the values displayed in Figure 12. This adds the logical volume for the **/var/psf/prs/rips** directory. Note that this figure displays only those values that you need to add or change from the defaults provided.

   This example assumes that the `Logical volume NAME` field has defaulted to **lv01**

```
                          Add a Logical Volume

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

                                          [Entry Fields]
⋮
*VOLUME GROUP name                       [datavg]
*Number of LOGICAL PARTITIONS            [124]
 PHYSICAL VOLUME names                   hdisk1 hdisk2 hdisk3 hdisk4
⋮
 POSITION on physical volume             middle
 RANGE of physical volumes               minimum
 MAXIMUM NUMBER of PHYSICAL VOLUMES      [4]
         to use for allocation
⋮
 Stripe Size?                            [64k]


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 12. Add the Second Logical Volume to the Primary

7. Once you have filled in these values, use the **F3** to return to the **Add a Logical Volume** panel.
8. From the **Add a Logical Volume** panel, specify `datavg` for the `VOLUME GROUP name` option.
9. From the **Add a Logical Volume** panel, insert the values displayed in Figure 13. This adds the logical volume for the **/var/psf/prs/in** directory. Note that this figure displays only those values that you need to add or change from the defaults provided.

   This example assumes that the `Logical volume NAME` field has defaulted to **lv02**

```
                          Add a Logical Volume

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

                                          [Entry Fields]
⋮
*VOLUME GROUP name                        [datavg]
*Number of LOGICAL PARTITIONS             [500]
 PHYSICAL VOLUME names                    hdisk1 hdisk2 hdisk3 hdisk4
⋮
 POSITION on physical volume              inner middle
 RANGE of physical volumes                minimum
 MAXIMUM NUMBER of PHYSICAL VOLUMES       [4]
         to use for allocation
⋮
 Stripe Size?                             [64k]


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 13. Add the Third Logical Volume to the Primary

10. Once you have filled in these values, use the **F3** to return to the **Add a Logical Volume** panel.
11. From the **Add a Logical Volume** panel, specify `datavg` for the `VOLUME GROUP name` option.
12. From the **Add a Logical Volume** panel, insert the values displayed in Figure 14 on page 25. This adds the logical volume for the **/var/psf/prs/out** directory. Note that this figure displays only those values that you need to add or change from the defaults provided.

    This example assumes that the `Logical volume NAME` field has defaulted to **lv03**

```
                          Add a Logical Volume

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

                                          [Entry Fields]
⋮
*VOLUME GROUP name                       [datavg]
*Number of LOGICAL PARTITIONS            [500]
 PHYSICAL VOLUME names                   hdisk1 hdisk2 hdisk3 hdisk4
⋮
 POSITION on physical volume             edge
 RANGE of physical volumes               minimum
 MAXIMUM NUMBER of PHYSICAL VOLUMES      [4]
         to use for allocation
⋮
 Stripe Size?                            [64k]


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 14. Add the Fourth Logical Volume to the Primary

13. From the AIX command line, verify that each logical volume (as defined for this example in Table 2 on page 22) is striped by specifying the following series of commands:

    a. `lslv -l lv00`

       The system display should resemble the following:

       ```
       lv00: n/a
       PV                COPIES        IN BAND       DISTRIBUTION
       hdisk2            031:000:000   100%          000:031:000:000:000
       hdisk3            031:000:000   100%          000:031:000:000:000
       hdisk4            031:000:000   100%          000:031:000:000:000
       hdisk1            031:000:000   100%          000:031:000:000:000
       ```

       This display shows four physical volumes with contiguous storage that has been allocated in the middle of each volume, as displayed by the **DISTRIBUTION** value.

    b. `lslv -l lv01`

       The system display should resemble the following:

       ```
       lv01: n/a
       PV                COPIES        IN BAND       DISTRIBUTION
       hdisk2            031:000:000   100%          000:031:000:000:000
       hdisk3            031:000:000   100%          000:031:000:000:000
       hdisk4            031:000:000   100%          000:031:000:000:000
       hdisk1            031:000:000   100%          000:031:000:000:000
       ```

This display shows four physical volumes with contiguous storage that has been allocated in the middle of each volume, as displayed by the **DISTRIBUTION** value.

c. `lslv -l lv02`

The system display should resemble the following:

```
lv02: n/a
PV                COPIES        IN BAND       DISTRIBUTION
hdisk2            125:000:000   85%           000:018:107:000:000
hdisk3            125:000:000   85%           000:018:107:000:000
hdisk4            125:000:000   85%           000:018:107:000:000
hdisk1            125:000:000   85%           000:018:107:000:000
```

This display shows four physical volumes with contiguous storage that has been allocated in the inner-middle of each volume, as displayed by the **DISTRIBUTION** value.

d. `lslv -l lv03`

The system display should resemble the following:

```
lv03: n/a
PV                COPIES        IN BAND       DISTRIBUTION
hdisk2            125:000:000   86%           108:017:000:000:000
hdisk3            125:000:000   86%           108:017:000:000:000
hdisk4            125:000:000   86%           108:017:000:000:000
hdisk1            125:000:000   86%           108:017:000:000:000
```

This display shows four physical volumes with contiguous storage that has been allocated on the edge of each volume, as displayed by the **DISTRIBUTION** value.

14. Once you have verified the logical volumes and ensured that they are striped, you can create the necessary file systems on each logical volume. To perform this task, specify `smitty` and use the following path:

    System Storage Management (Physical & Logical Storage) -->

    File Systems -->

    Add / Change / Show / Delete File Systems -->

    Journaled File Systems -->

    Add a Journaled File System on a Previously Defined Logical Volume -->

    Add a Standard Journaled File System

15. From the **Add a Standard Journaled File System** panel, insert the values displayed in Figure 15. Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                    Add a Standard Journaled File System

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

                                          [Entry Fields]
*LOGICAL VOLUME name                     [lv00]
*MOUNT POINT                             [/usr/lpp/psf]
 Mount AUTOMATICALLY at system restart?  yes
 PERMISSIONS                             read/write
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 15. Add a Standard Journaled File System for /usr/lpp/psf Directory

16. Press the **F3** key and return to the **Add a Standard Journaled File System** panel.
17. From the **Add a Standard Journaled File System** panel, insert the values displayed in Figure 16. Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                    Add a Standard Journaled File System

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

                                          [Entry Fields]
*LOGICAL VOLUME name                     [lv01]
*MOUNT POINT                             [/var/psf/prs/rips]
 Mount AUTOMATICALLY at system restart? yes
 PERMISSIONS                             read/write
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 16. Add a Standard Journaled File System for /var/psf/prs/rips Directory

18. Press the **F3** key and return to the **Add a Standard Journaled File System** panel.
19. Use the **F3** key to exit SMIT.

20. To define the larger filesystems to the logical volume, specify `smitty` and use the following path:

    System Storage Management (Physical & Logical Storage) -->

    File Systems -->

    Add / Change / Show / Delete File Systems -->

    Journaled File Systems -->

    Add a Journaled File System on a Previously Defined Logical Volume -->

    Add a Large File Enabled Journaled File System

21. From the **Add a Large File Enabled Journaled File System** panel, insert the values displayed in Figure 17. Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                Add a Large File Enabled Journaled File System

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

                                          [Entry Fields]
*LOGICAL VOLUME name                     [lv02]
*MOUNT POINT                             [/var/psf/prs/in]
 Mount AUTOMATICALLY at system restart?  yes
 PERMISSIONS                             read/write
⋮



F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 17. Add a Large File Enabled Journaled File System Panel

22. Press the **F3** key to return to the **Add a Large File Enabled Journaled File System** panel.

23. To create a large file system for the output directory, insert the values displayed in Figure 18. Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                Add a Large File Enabled Journaled File System

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

                                          [Entry Fields]
*LOGICAL VOLUME name                     [lv03]
*MOUNT POINT                             [/var/psf/prs/out]
 Mount AUTOMATICALLY at system restart?  yes
 PERMISSIONS                             read/write
⋮



F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 18. Add a Large File Enabled Journaled File System Panel

Mounting the File Systems on the Primary for Verification

Before you can verify the size of the directories, you must mount the files on the Primary (**prs**) AIX system by using the following procedure:

1. From the AIX command line, specify `smitty` and use the following path:

   System Storage Management (Physical & Logical Storage) -->

   File Systems --> **Mount a File System** -->

2. From the **Mount a File System** panel, select the **F4** key to be prompted for the `FILE SYSTEM name` field value.

   For our example, if you are mounting `/dev/lv00`, which you provided with a mount point in step 15 on page 27, you can specify the `FILE SYSTEM name` field and allow the `DIRECTORY over which to mount` field to default to **/usr/lpp/psf**. The values for both fields are provided in Figure 19. All other values can be allowed to take the default.

```
                Mount a File System

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

                                        [Entry Fields]
 FILE SYSTEM name                      [/dev/lv00]
*DIRECTORY over which to mount         [/usr/lpp/psf]
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 19. Mount a File System Panel for the /usr/lpp/psf Directory

3. Press the **F3** key to return to the **Mount a File System** panel.
4. Select the **F4** key to be prompted for the `FILE SYSTEM name` field value.

   For our example, if you are mounting `/dev/lv01`, which you provided with a mount point in step 17 on page 27, you can specify the `FILE SYSTEM name` field and allow the `DIRECTORY over which to mount` field to default to **/var/psf/prs/rips**. The values for both fields are provided in Figure 20. All other values can be allowed to take the default.

```
                Mount a File System

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

                                        [Entry Fields]
 FILE SYSTEM name                      [/dev/lv01]
*DIRECTORY over which to mount         [/var/psf/prs/rips]
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 20. Mount a File System Panel for the /var/psf/prs/rips Directory

5. Press the **F3** key to return to the **Mount a File System** panel.
6. Select the **F4** key to be prompted for the `FILE SYSTEM name` field value.

   For our example, if you are mounting `/dev/lv02`, which you provided with a mount point in step 21 on page 28, you can specify the `FILE SYSTEM name` field and allow the `DIRECTORY over which to mount` field to default to **/var/psf/prs/in**. The values for both fields are provided in Figure 21. All other values can be allowed to take the default.

```
                Mount a File System

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

                                        [Entry Fields]
 FILE SYSTEM name                      [/dev/lv02]
*DIRECTORY over which to mount         [/var/psf/prs/in]
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 21. Mount a File System Panel for the /var/psf/prs/in Directory

7. Press the **F3** key to return to the **Mount a File System** panel.
8. Select the **F4** key to be prompted for the `FILE SYSTEM name` field value.

   For our example, if you are mounting `/dev/lv03`, which you provided with a mount point in step 23 on page 28, you can specify the `FILE SYSTEM name` field and allow the `DIRECTORY over which to mount` field to default to **/var/psf/prs/out**. The values for both fields are provided in Figure 22. All other values can be allowed to take the default.

```
                Mount a File System

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

                                        [Entry Fields]
 FILE SYSTEM name                      [/dev/lv03]
*DIRECTORY over which to mount         [/var/psf/prs/out]
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 22. Mount a File System Panel for the /var/psf/prs/out Directory

9. Once you have completed mounting these four file systems, exit SMIT.

Verifying the Size of the Directories on the Primary Adobe PostScript Extreme

Once you have completed these steps, take time to verify the size of the directories that you have created. Note that you will not get these results unless you have mounted the directories as described in “Mounting the File Systems on the Primary for Verification” on page 29.

From the AIX command line, enter:

```
df
```

The display should resemble the following:

```
Filesystem    512-blocks      Free %Used    Iused %Iused Mounted on
⋮
/dev/lv00        2031616   1669112   18%      880    1% /usr/lpp/psf
/dev/lv01        2031616   1965536    4%      100    1% /var/psf/prs/rips
/dev/lv02        8192000   7925448    4%       39    1% /var/psf/prs/in
/dev/lv03        8192000   7926296    4%       17    1% /var/psf/prs/out
⋮
```

If either the data stream input directory (**/var/psf/prs/in**) or the data stream output directory (**/var/psf/prs/out**) contains a smaller 512-block allocation than the **/usr/lpp/psf** directory, you will want to remount the file systems. If you do not verify the size and location of these directories, a serious error might arise when you attempt to print an especially large file, or stack a series of files. Because the error in size could occur much later, it might be difficult to trace to an installation problem.

Configuring the Primary Adobe PostScript Extreme for the Network

The following describes how the Primary (**prs**) system must be configured to interact with IBM InfoPrint Control and the secondary (**prs1**) Adobe PostScript Extreme AIX systems. Before using these procedures, ensure that you have performed the tasks specified in “Basic Configuration of the Primary Adobe PostScript Extreme System” on page 17.

File Configuration within Existing Directories on the Primary

Note: To make these changes, you must log in to the Primary Adobe PostScript Extreme system as **root**.

1. Add a user account through the AIX System Management Interface Tool (SMIT) by entering `smitty` (ASCII interface) and take the following path:

   Security & Users --> **Users** --> **Add a User**

   In the **Add a User** panel, insert the values displayed in Figure 23 on page 32. Note that this figure displays only those values that you need to add or change from the defaults provided.

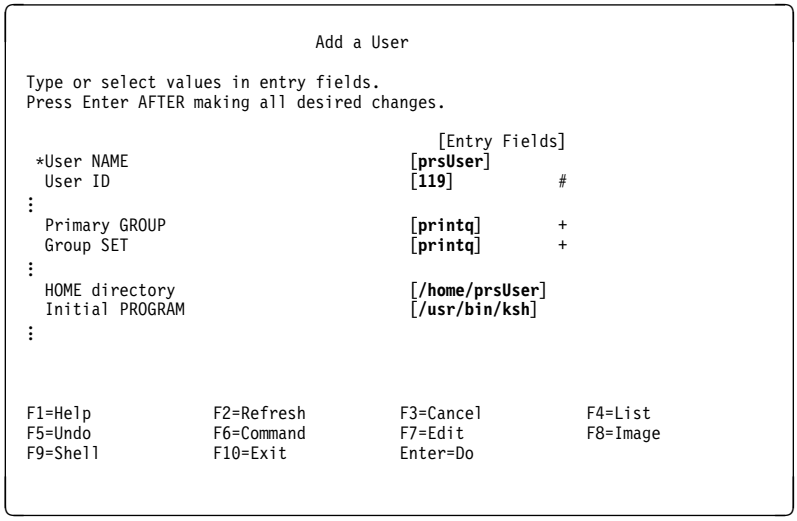

Figure 23. Add a User Panel

2. Once you have filled in these values, and entered this command successfully, press the **F3** key twice to access the SMIT **Users** panel.
3. From the SMIT **Users** panel, select the `Change a User's Password` option.
4. From the SMIT **Change a User's Password** panel, type `prsUser` as the value.
5. Exit SMIT.
6. Enter the following at the AIX command line:

   ```
   telnet localhost
   ```

7. Log into this system as **prsUser**.

   The system responds with the following message:

   ```
   3004-610:  You are required to change your password.
   Please choose a new one.
   ```

   You can reuse the password that you just set. Then, the system will ask you to confirm that password by typing it once again.

8. From the **/home/prsUser** directory, create the **.rhosts** file by specifying **vi .rhosts**
9. Add the following lines to the new file:

   ```
   prs        prsUser
   prs1       prsUser
   ```

10. Save the file.
11. Exit the telnet session by specifying the **Ctrl** and the **D** key in succession and then pressing Enter.

    This key sequence ends your **prsUser** status and returns you to **root** user status.

    Note: You can verify this status by typing `whoami` at the AIX command line. The system response should be **root**. If it is not, repeat the preceeding step and verify that you have **root** status.

12. Move to the top of the directory structure by specifying:

    ```
    cd /
    ```

13. As **root**, use the **vi** editor to access the **.rhosts** file.
14. Add the following lines to this file:

    ```
    hostname          root
    prs               root
    prs1              root
    ```

15. Exit and save the file.
16. Access the **/etc** directory so you can configure the **hosts** file:
17. Add the following lines to the file:

    ```
    10.1.2.1          prs
    10.1.2.2          prs1
    ```

18. Exit and save the file.
19. Access the **rc.net** file.

    Note: Because this file is often read-only, you must change the permissions to write to this file. You can modify permissions through either of the following line commands:

    ```
    chmod u+w /etc/rc.net
    ```

20. Once you have access, add the following lines to the bottom of the file, following the `fi`:

    ```
    /usr/sbin/no -o rfc1323=1
    /usr/sbin/no -o thewall=16384
    /usr/sbin/no -o tcp_recvspace=131072
    /usr/sbin/no -o tcp_sendspace=131072
    /usr/sbin/no -o udp_sendspace=65536
    /usr/sbin/no -o udp_recvspace=65536
    /usr/sbin/no -o sb_max=262144
    /usr/sbin/no -o ipqmaxlen=150

    /usr/samples/kernel/vmtune -c 256 -r 2 -R 48 -p 20 -P 80 -f 500 -F550
    ```

21. Exit and save the file.
22. From the AIX command line, enter the following command:

    ```
    mkitab rcprs:2:once:"/usr/lpp/psf/bin/ps2afpd \

    -C /usr/lpp/psf/prs/ps2afpd.cfg #start the Adobe PostScript Extreme
    daemon"
    ```

    This command ensures that the Adobe PostScript Extreme daemon will start at boot time. The **/usr/lpp/psf/prs** directory is not where the standard PostScript RIP provided with IBM InfoPrint Control exists.

23. The Adobe PostScript Extreme configuration file -- **/usr/lpp/psf/prs/prs2afpd.cfg**& - - should only be modified to turn system tracing either on or off. Because traces impacts the performance of Adobe PostScript Extreme, they should only be used to diagnose problems.

For instructions on using tracing, see “Adobe PostScript Extreme Diagnostic Tools” on page 79.

File System Configuration for New Directories on the Primary

The following procedures are necessary to create the environment required to use the Adobe PostScript Extreme system. Note that these file system sizes are estimates and may vary, depending upon the F50 at an installation. These procedures will allow the creation and striping of the following directories:

/usr/lpp/psf Requires a file size of 1GB.

/var/psf/prs/in Requires a file size of 4GB.

/var/psf/prs/out Requires a file size of 4GB.

/var/psf/prs/rips Requires a file size of 1GB.

The following procedure describes how to export and mount these directories so that **prs1** (the secondary Adobe PostScript Extreme AIX system) can mount the drives.

1. Export the directory **/var/psf/prs/in** through the AIX System Management Interface Tool (SMIT) by entering either `smit nfs` (AIXwindows interface) or `smitty nfs` (ASCII interface) and take the following path:

   Network File System (NFS) --> **Add a Directory to Exports List**

   In the **Add a Directory to Exports List** panel, insert the values displayed in Figure 24. Note that this figure displays all values required for exporting a directory.

```
                Add a Directory to Exports List

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

                                          [Entry Fields]
 *PATHNAME of directory to export        [/var/psf/prs/in]
 *MODE to export directory                read-write
⋮
  Anonymous UID                          [-2]
  HOSTS allowed root access              [prs1]
⋮
  Use SECURE option?                      no
 * EXPORT directory now, system restart
   or both                                both
⋮



F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 24. Add A Directory To Exports List

2. Once you have filled in these values, and entered this command successfully, press the **F3** to access the SMIT **Network File System (NFS)** panel again.
3. Then select `Add a Directory to Exports List` again and fill in the values from Figure 24 to mount the output directory.

   In the **Add a Directory to Exports List** panel, insert the values displayed in Figure 25 on page 35. Note that this figure displays all values required for exporting a directory.

```
                Add a Directory to Exports List

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

                                              [Entry Fields]
 *PATHNAME of directory to export            [/var/psf/prs/out]
 *MODE to export directory                    read-write
⋮
  Anonymous UID                              [-2]
  HOSTS allowed root access                  [prs1]
⋮
  Use SECURE option?                          no
 * EXPORT directory now, system restart
   or both                                    both
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 25. Add A Directory To Exports List for /var/psf/prs/out

Note: You can verify what has been exported to your system by specifying `exportfs` at the AIX command line. If the directories have been correctly exported, the system should display the following:

```
/var/psf/prs/in  -root=prs1
/var/psf/prs/out -root=prs1
```

Configuring the Fast Ethernet Cards on the Primary system

Because they exist on different subnets, installation and configuration of the Fast Ethernet cards requires the following procedures:

1. Install the Cards into the RS/6000 system.

   To perform this task, consult the following two publications:

   RS/6000: Adapters, Devices, and Cable Information for Multiple Bus Systems, **(SA38-0516)**
   Provides information about adapters, devices, and cables attached to or used within a system unit. This publication should come with your F50 RS/6000 System.

   PCI Adapter Placement Reference, **(SA38-0538)**
   Outlines Peripheral Component Interface (PCI) adapter slot placement restrictions and graphics adapter support configurations that are specific to your system unit.

2. Put the CD-ROM into the CD-ROM disk drive.

   For Adobe PostScript Extreme, you must have an Advanced Server CD-ROM that runs on AIX Operating system 4.2.1.

3. Logon to the system as **root**

4. Install the cards through the AIX System Management Interface Tool (SMIT) by entering `smitty devices` (ASCII interface) and select **Install/Configure Devices Added After IPL**.

5. From the **Install/Configure Devices Added After IPL** panel, select the F4 key to generate a list.
6. From the `Input device / directory for software` pop up menu, select

   ```
   /dev/cd0       (SCSI Multimedia CD-ROM Drive)
   ```

7. Press the ENTER key.

   The AIX system checks to see if the device drivers are loaded. If these drivers are not loaded, the system retrieves them from the CD-ROM and installs them in the correct location.

8. Press the **F10** key to exit SMIT.
9. Now, you must correctly map the installed Ethernet cards to the correct Peripheral Component Interconnect (PCI) port number on the back of the F50. Be sure to keep track of these values by specifying them on Figure 1 on page 2.

   To determine the correct ports for the Ethernet Card that you just installed, enter the following from the AIX command line:

   ```
   lsdev -C | grep -i ether
   ```

   The AIX system displays the Ethernet Cards available:

   ```
   ent0    Available 10-80    IBM PCI Ethernet Adapter (22100020)
   ent1    Available 30-60    3Com 3C905-TX-IBM Fast EtherLink XL NIC
   ent2    Available 30-68    3Com 3C905-TX-IBM Fast EtherLink XL NIC
   ⋮
   et1     Available          IEEE 802.3 Ethernet Network Interface
   et2     Available          IEEE 802.3 Ethernet Network Interface
   ```

   In this example, you must install both `et0` and `et1` as interfaces to the `ent1` and `ent2` Fast Ethernet cards.

   The **Available** status tells you that the device has been defined on your system. Because the F50 AIX system is new, you should have no problem finding available devices that have not yet been defined to your system. The numbers that follow the status are the location codes. By checking the AIX location codes described in *RS/6000 7025 F50 Series Service Guide*, (SA38-0541), you can determine which PCI port to use for physically attaching the Ethernet Card to the F50. In this example, Ethernet Card **ent1** goes to location code `30-60`, which indicates slot 6.

10. To install the first Fast Ethernet card, specify the following at the AIX command line:

    ```
    smitty tcpip
    ```

11. From the **TCP/IP** panel, select

    ```
    Minimum Configuration & Startup
    ```

12. From the **Available Network Interfaces** panel, select the appropriate Ethernet (et) card to configure. For example,

    ```
    et1     IEEE 802.3 Ethernet Network Interface
    ```

13. From the **Minimum Configuration & Startup** panel, specify the values displayed in Figure 26. You can specify these values for ent1 on the Worksheet displayed in Figure 1 on page 2. Note that the values not provided as defaults are specified in boldface.

```
                  Minimum Configuration & Startup

To Delete existing configuration data, please use Further Configuration menus

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

                                          [Entry Fields]
 *HOSTNAME                               [prs]
 *INTERNET ADDRESS (dotted decimal)       [10.1.2.1]
  Network MASK (dotted decimal)           [255.255.255.0]
 *Network INTERFACE                       et1
  NAMESERVER
       Internet ADDRESS (dotted decimal) []
       DOMAIN Name                       []
  Default GATEWAY Address                []
  (dotted decimal or symbolic name)
  Your CABLE type                         N/A
  START Now                               Yes


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 26. Minimum Configuration & Startup panel

14. Once you have filled in these values, and entered this command successfully, press the **F3** key.
15. Take the following path:

    Further Configuration --> **Network Interfaces** -->

    Network Interface Selection -->

    Change/Show Characteristics of a Network Interface

16. From the **Available Network Interfaces** panel, select the appropriate Ethernet (et) interface to configure. For example,

```
et2     IEEE 802.3 Ethernet Network Interface
```

17. From the **Change / Show an IEEE 802.3 Ethernet Network Interface** panel, specify the values displayed in Figure 27. You can specify these values for ent2 on the Worksheet displayed in Figure 1 on page 2. Note that the values not provided as defaults are specified in bold face type.

```
          Change / Show an IEEE 802.3 Ethernet Network Interface

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

                                          [Entry Fields]
  Network Interface Name                   et2
  INTERNET ADDRESS (dotted decimal)       [10.1.1.2]
  Network Mask                            [255.255.255.0]
  (hexadecimal or dotted decimal)
  Current STATE                            up
  Use Address Resolution Protocol (ARP)?   yes
  BROADCAST ADDRESS (dotted decimal)      []



F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 27. Change / Show an IEEE 802.3 Ethernet Network Interface Panel

18. Once you have filled in these values, and entered this command successfully, press the **F10** key to exit SMIT.

Installing InfoPrint on the Primary

The following procedure is to be used on the Primary Adobe PostScript Extreme system to install the InfoPrint code necessary to run this feature. To use Adobe PostScript Extreme, you must install the following:

- Single Adobe PostScript RIP
- PostScript fonts required with the single RIP
- InfoPrint message catalogs
- Adobe PostScript Extreme executables

Note: If you will be using Adobe PostScript Extreme to RIP double-byte fonts, you must also install the Kanji fonts.

You can install these InfoPrint options by using the ASCII terminal that you used to perform earlier configuration steps. Install the InfoPrint options from the product CD-ROM:

1. From the AIX command line, set the terminal display by entering:

   ```
   export TERM=ibm3151
   ```

2. Use the procedure described on the insert provided with the InfoPrint CD-ROM to create an install directory and mount the CD-ROM onto the Primary Adobe PostScript Extreme system.

3. From the AIX command line on the Primary, type:

   ```
   mdkir /usr/share/lpp/showcase
   ```

   This creates the directory required by the CD-ROM Showcase.

4. From the AIX command line on the Primary, type:

   ```
   tar -xvf/cdrom/aix/install/installer.tar
   ```

   This command loads required code into the **/usr/lpp/InfoPrint** directory.

5. Install the InfoPrint program on the Primary by typing the **cdtty.exe** command on one line as displayed:

   ```
   /usr/lpp/InfoPrint/install/bin/cdtty.exe -p24 -cXXX-XXX-XXXX -aYYYY-YYYY-YYYY-YYYY-YYYY -n51
   ```

   where *XXX-XXX-XXXX* specifies the 10-digit customer number and *YYYY-YYYY-YYYY-YYYY-YYYY* represents the customer installation key.

   This command allows you to bypass the encryption, using both the customer number and the installation key. In the United States, you can obtain both the customer number and the installation key once your order for Adobe PostScript Extreme software has been processed by IBM Software Manufacturing Services. The installation key will come on the **KEY OR PASSWORD** page of the packing slip that is provided with the Adobe PostScript Extreme software package. If you cannot locate this page, contact the IBM Software Key Registration Center by telephone, FAX, or VNET:

   phone 1-800-446-8989 or 1-303-924-4671/4679

   FAX 1-800-925-7479 or 1-303-924-9644

   Internet keyatl@vnet.ibm.com

   Note: If you reside outside the United States, see “Using the Installation Keys for InfoPrint and Adobe PostScript Extreme” on page 6.

6. At the AIX command line specify the `smitty install_update` option.
7. Select the `Install and Update from ALL Available Software` field.
8. In the `INPUT device / directory for software` field, specify **/cdrom/aix/install/images**, the directory where InfoPrint options are installed.
9. Press `Enter`
10. From the **Install and Update from ALL Available Software** panel, move the cursor to the `SOFTWARE to install` field and press **F4**
11. From the **SOFTWARE to install** pop-up menu, scroll down the list and select the `ipr.prs_p` option.
12. From the **Install and Update from ALL Available Software** panel, specify the values displayed in Figure 28. Note that the values not provided as defaults are specified in bold face type.

```
          Install and Update from ALL Available Software

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

                                      [Entry Fields]
⋮
*SOFTWARE to install      [+2.1.0.0 ipr.prs_p]
 COMMIT software updates? [no]
 SAVE replaced files?     [yes]
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 28. Install and Update from ALL Available Software Panel

13. Press Enter.

    The system should respond by displaying the selected fileset and a list of requisites that are required by this fileset.

14. Check the end of the InfoPrint-generated messages to ensure that the software was successfully installed.

    If your installation was successful, you will see a display at the bottom of your screen similiar to the following:

```
Installation Summary
--------------------
Name                     Level           Part        Event       Result
-------------------------------------------------------------------------
ipr.adobe2afp.rte        2.1.0.0         USR         APPLY       SUCCESS
ipr.prtsvcs.msg.en_US    2.1.0.0         USR         APPLY       SUCCESS
ipr.prs_p.rte            2.1.0.0         USR         APPLY       SUCCESS
ipr.fnt.ps               2.1.0.0         USR         APPLY       SUCCESS
ipr.cal                  2.1.0.0         USR         APPLY       SUCCESS
ipr.xforms.tiff2afp      2.1.0.0         USR         APPLY       SUCCESS
ipr.xforms.raster2afp    2.1.0.0         USR         APPLY       SUCCESS
```

    If the installation fails for any reason, the **installp** command displays failure information. In addition, the **installp** command identifies the directories that it was able to clean after the installation failure.

15. From the AIX command line on the Primary, type:

    ```
    /usr/lpp/InfoPrint/install/bin/prtsvcs_cfg.ksh
    ```

    This executable performs several configuration tasks on the RS/6000, including the running of the **install_fonts** script if you have installed the **ipr.dbfnt.ps** installation option for printing double-byte Kanji fonts.

16. To properly configure the single-byte fonts for printing, type the following at the AIX command line:

    ```
    /usr/lpp/psf/ps/install_ps_fonts
    ```

Note: The **ipr.prs_t** install image is an alternate Adobe PostScript Extreme configuration. For information about expanding your Adobe PostScript Extreme system, contact your IBM Printing Systems Company marketing representative.

Rebooting the Primary Adobe PostScript Extreme System

To ensure that all these changes take effect, you must reboot this Primary (**prs**) system. At the AIX command line, enter:

```
shutdown -Fr
```

Once you have completed these tasks, the Primary Adobe PostScript Extreme system is ready to use.

Chapter 5. Installing and Configuring the Secondary Adobe PostScript Extreme System

Preparing the secondary (**prs1**) Adobe PostScript Extreme system consists of the following procedures, completed in sequence:

1. "Basic Configuration of the Secondary Adobe PostScript Extreme System."
2. "Configuring the Secondary Adobe PostScript Extreme for the Network" on page 52.
3. "Configuring the Fast Ethernet Cards on the Secondary AIX System" on page 55.

Basic Configuration of the Secondary Adobe PostScript Extreme System

These procedures consist of starting the workstation, creating data volume groups and paging space, and finally striping the volumes for performance benefits. Note that the basic set up tasks can be completed through the **System Management Interface Tool** (**SMIT**). The following directions use SMIT.

1. If you are performing these tasks from an ASCII terminal, you must first set the terminal display. From the AIX prompt, enter the following command:

   ```
   export TERM=ibm3151
   ```

2. To set both the time and the **root** password for the Secondary (**prs1**) Adobe PostScript Extreme AIX System, type **smitty** at the AIX command line and use the following path:

   System Environments -->

   Change / Show Date and Time

3. From the **Use DAYLIGHT SAVINGS TIME?** pop-up menu, select either yes or no.
4. Press the **F3** key twice to access the **Systems Management** panel, then use the following path:

   Security & Users --> **Passwords**

5. From the **Passwords** panel, select the `Change a User's Password` option and choose the **root** password for each system.

To ensure that there is adequate paging space for all **root** volume groups (**rootvg**), you must consider the needs of the Adobe PostScript Extreme system.

The Secondary Adobe PostScript Extreme system should contain 600MB of contiguous storage, spread evenly across all disks. Because you will be specifying storage in logical partitions, remember that one logical partition is equivalent to 8MB.

The following describes how storage can be allocated:

Adobe PostScript Extreme1 (Secondary)
600MB / three disks = 200MB a disk; 25 8MB partitions

1. Press the **F3** key twice to access the **Systems Management** panel, then use the following path:

   System Storage Management (Physical & Logical Storage) -->

   Logical Volume Manager --> **Paging Space** -->

   Change / Show Characteristics of a Paging Space -->

2. From the **PAGING SPACE name** pop-up menu, select `hd6`.

   This allows you to set the paging space on the **rootvg** volume group.

3. From the **Change / Show Characteristics of a Paging Space** panel, press **F9**

   This step sends you to an AIX shell from which you can enter the following command:

   ```
   lsps -a
   ```

   The display should resemble the following:

   ```
   Page Space  Physical Volume   Volume Group    Size   %Used  Active  Auto
   hd6         hdisk0            rootvg          64MB      21     yes   yes
   ```

   Note: Save the output from the **lsps** command to refer to later.

4. To exit the AIX shell, type `exit` on the command line.

5. From the **Change / Show Characteristics of a Paging Space** panel, specify a value for the `NUMBER of additional logical partitions` option.

   For example, since 64MB is the size of the existing paging space provided on the initial display for hd6:

   a. Subtract 64MB from 200MB.

   b. Divide the result (136MB) by eight.

      This step determines the size of each partition.

   c. The result indicates the need for 17 partitions.

In the **Change / Show Characteristics of a Paging Space** panel, insert the values displayed in Figure 29. Note that this figure displays all values for this screen, presuming that you require 17 partitions.

```
                Change / Show Characteristics of a Paging Space

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

                                          [Entry Fields]
 Paging space name                       hd6
 Volume group name                       rootvg
 Physical volume name                    hdisk0
 NUMBER of additional logical partitions [17]
 Use this paging space each time         yes
   the system is RESTARTED?


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 29. Change / Show Characteristics of a Paging Space panel

6. Press the **F10** key to exit SMIT.
7. To create data volume groups (**datavg**) for all hard drives except **hd0**, specify `smitty lvm` at the AIX command line and take the following path:

   Volume Groups --> **Add a Volume Group**

   In the **Add a Volume Group** panel, insert the values displayed in Figure 30. Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                                Add a Volume Group

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

                                          [Entry Fields]
 VOLUME GROUP name                       [datavg]
 Physical partition SIZE in megabytes    [8]
*PHYSICAL VOLUME names                   [hdisk1 hdisk2]
 Activate volume group AUTOMATICALLY     yes
   at system restart?
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 30. Add a Volume Group Panel

8. Once you have filled in these values, and entered this command successfully, press the **F3** to access the SMIT **Logical Volume Manager** panel.
9. From the **Logical Volume Manager** panel, access the following path:

   Paging Space --> **Add Another Paging Space**

   From the **VOLUME GROUP name** pop-up menu, select the `datavg` option.

10. From the **Add Another Paging Space** panel, insert the values displayed in Figure 31 on page 46. Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                          Add Another Paging Space

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

                                          [Entry Fields]
 Volume group name                       datavg
 SIZE of paging space                    [25]
   (in logical partitions)
 PHYSICAL VOLUME name                    hdisk1
 Start using this paging space NOW?      yes
 Use this paging space each time         yes
         the system is RESTARTED?


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 31. Add Another Paging Space for Secondary: First Physical Volume

Note: The `SIZE of paging space` value can vary, depending upon the number of hard drives on the AIX system.

11. Once you have filled in these values, and entered this command successfully, press the **F3** key to access this panel again.
12. From the **Add Another Paging Space** panel, insert the values displayed in Figure 32. Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                          Add Another Paging Space

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

                                          [Entry Fields]
 Volume group name                       datavg
 SIZE of paging space                    [25]
   (in logical partitions)
 PHYSICAL VOLUME name                    hdisk2
 Start using this paging space NOW?      yes
 Use this paging space each time         yes
         the system is RESTARTED?


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 32. Add Another Paging Space for Secondary: Second Physical Volume

Once these tasks have been completed, the Adobe PostScript Extreme Secondary is ready to begin the striping enhancements that will ensure good performance.

Striping Logical Volumes on the Secondary

To ensure good performance across the Adobe PostScript Extreme workstations, you need to stripe all logical volumes except for the operating system **rootvg** logical volumes. Striping spreads the data in a logical volume across several disk drives so that the I/O capacity of the disk drives can be used in parallel to access data on the logical volume. When logical volumes are striped, it allows for high-performance reading and writing of large sequential files.

Note: When striping, all logical volumes within a volume group must be striped. Note that a volume group must contain a minimum of two physical volumes if it is to be striped.

Table 3. Logical Volumes and Directories

Logical Volume	Directory
LV00	**/usr/lpp/psf**
LV01	**/var/psf/prs/rips**

1. To stripe logical volumes on a workstation, type **smitty** at the AIX command line and use the following path:

   System Storage Management (Physical & Logical Storage) -->

   Logical Volume Manager --> **Logical Volumes** -->

   Add a Logical Volume

2. From the **Add a Logical Volume** panel, specify `datavg` for the `VOLUME GROUP name` option.

3. From the **Add a Logical Volume** panel, insert the values displayed in Figure 33 on page 48.

   This adds the logical volume for the **/usr/lpp/psf** directory. This example assumes that the `Logical volume NAME` field has defaulted to **lv00** Note that this figure displays only those values that you need to add or change from the defaults provided.

   You must create all the logical volumes through this path, modifying the `Logical volume NAME` value and the `POSITION on physical volume` value for each logical volume.

```
                          Add a Logical Volume

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

                                          [Entry Fields]
⋮
*VOLUME GROUP name                       [datavg]
*Number of LOGICAL PARTITIONS            [124]
 PHYSICAL VOLUME names                   hdisk1 hdisk2
⋮
 POSITION on physical volume             middle
 RANGE of physical volumes               minimum
 MAXIMUM NUMBER of PHYSICAL VOLUMES      [2]
         to use for allocation
⋮
 Stripe Size?                            [64k]


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 33. Add a Logical Volume Panel on Secondary: First Volume

Note: If you do not specify a minimum of two physical volumes within the logical volume under the PHYSICAL VOLUME names option, the operating system fails this command.

4. Once you have filled in these values, and entered this command successfully, press the **F3** to access the SMIT **Logical Volume Manager** panel again.
5. Insert the values displayed in Figure 34.

   This adds the logical volume for the **/var/psf/prs/rips** directory. This example assumes that the Logical volume NAME field has defaulted to **lv01** Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                          Add a Logical Volume

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

                                          [Entry Fields]
⋮
*VOLUME GROUP name                       [datavg]
*Number of LOGICAL PARTITIONS            [124]
 PHYSICAL VOLUME names                   hdisk1 hdisk2
⋮
 POSITION on physical volume             middle
 RANGE of physical volumes               minimum
 MAXIMUM NUMBER of PHYSICAL VOLUMES      [2]
         to use for allocation
⋮
 Stripe Size?                            [64k]


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 34. Add a Logical Volume Panel on Secondary: Second Volume

6. From the AIX command line, verify that the logical volumes are striped by specifying the following:

   a. `lslv -l 1v00`

      The system display should resemble the following:

      ```
      lv00: n/a
      PV                COPIES        IN BAND       DISTRIBUTION
      hdisk2            062:000:000    100%          000:062:000:000:000
      hdisk1            062:000:000    100%          000:062:000:000:000
      ```

      This display shows two physical volumes with contiguous storage. The physical partitions were allocated on the middle of the volume (the DISTRIBUTION value).

   b. `lslv -l 1v01`

      The system display should resemble the following:

      ```
      lv01: n/a
      PV                COPIES        IN BAND       DISTRIBUTION
      hdisk2            062:000:000    72%           000:045:017:000:000
      hdisk1            062:000:000    70%           000:045:017:000:000
      ```

      This display shows two physical volumes with contiguous storage. The physical partitions were allocated on the middle of the volume (the DISTRIBUTION value).

7. Once you have verified the logical volumes and ensured that they are striped, you can create the necessary file systems on both logical volumes.

   To perform this task, specify `smitty` and use the following path:

   System Storage Management (Physical & Logical Storage) -->

   File Systems -->

   Add / Change / Show / Delete File Systems -->

   Journaled File Systems -->

   Add a Journaled File System on a Previously Defined Logical Volume -->

   Add a Standard Journaled File System

8. From the **Add a Standard Journaled File System** panel, specify `datavg` for the `VOLUME GROUP name` option.

9. From the **Add a Standard Journaled File System** panel, insert the values displayed in Figure 35. Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                    Add a Standard Journaled File System

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

                                          [Entry Fields]
*LOGICAL VOLUME name                     [lv00]
*MOUNT POINT                             [/usr/lpp/psf]
 Mount AUTOMATICALLY at system restart?  yes
 PERMISSIONS                             read/write
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 35. Add a Standard Journaled File System for the /usr/lpp/psf Directory

10. To create the file system for **/var/psf/prs/rips** on logical volume one (**lv01**), press the **F3** key to return to the **Add a Standard Journaled File System** panel.
11. Insert the values displayed in Figure 36. Note that this figure displays only those values that you need to add or change from the defaults provided.

```
                    Add a Standard Journaled File System

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

                                          [Entry Fields]
*LOGICAL VOLUME name                     [lv01]
*MOUNT POINT                             [/var/psf/prs/rips]
 Mount AUTOMATICALLY at system restart? yes
 PERMISSIONS                             read/write
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 36. Add a Standard Journaled File System for the /var/psf/prs/rips Directory

12. Use the **F3** key to exit SMIT.

Mounting the File Systems on the Primary for Verification

Before you can verify the size of the directories, you must mount the files on the Secondary (**prs1**) AIX system by using the following procedure:

1. From the AIX command line, specify `smitty` and use the following path:

   System Storage Management (Physical & Logical Storage) -->

   File Systems --> **Mount a File System** -->

2. From the **Mount a File System** panel, select the **F4** key to be prompted for the `FILE SYSTEM name` field value.

   For our example, if you are mounting `/dev/lv00`, which you provided with a mount point in step 3 on page 47, you can specify either the `FILE SYSTEM name` field and allow the `DIRECTORY over which to mount` field to default to **/usr/lpp/psf**. The values for both fields are provided in Figure 37. All other values can be allowed to take the default.

```
                Mount a File System

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

                                        [Entry Fields]
 FILE SYSTEM name                      [/dev/lv00]
*DIRECTORY over which to mount         [/usr/lpp/psf]
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 37. Mount a File System Panel for the /usr/lpp/psf Directory

3. Press the **F3** key to return to the **Mount a File System** panel.
4. Select the **F4** key to be prompted for the `FILE SYSTEM name` field value.

   For our example, if you are mounting `/dev/lv01`, which you provided with a mount point in step 5 on page 48, you can specify the `FILE SYSTEM name` field and allow the `DIRECTORY over which to mount` field to default to **/var/psf/prs/rips**. The values for both fields are provided in Figure 38. All other values can be allowed to take the default.

```
                Mount a File System

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

                                        [Entry Fields]
 FILE SYSTEM name                      [/dev/lv01]
*DIRECTORY over which to mount         [/var/psf/prs/rips]
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 38. Mount a File System Panel for the /var/psf/prs/rips Directory

5. Once you have completed mounting these two file systems, exit SMIT.

Verifying the Size of the Directories on the Adobe PostScript Extreme Secondary

Once you have completed these steps, take time to verify the size of the directories that you have created. Note that you will not get these results unless you have mounted the directories as described in “Mounting the File Systems on the Primary for Verification” on page 51.

From the AIX command line, enter:

```
df
```

The display should resemble the following:

```
Filesystem    512-blocks      Free %Used    Iused %Iused Mounted on
⋮
/dev/lv00        2031616   1861192    9%      483    1% /usr/lpp/psf
/dev/lv01        2031616   1965432    4%      347    1% /var/psf/prs/rips
⋮
```

Ensure that the directory for the PostScript RIPs (**/var/psf/prs/rips**) possesses an adequate size. Because an error caused by an inaccurate size for each directory could occur much later, it might be difficult to trace to an installation problem.

Configuring the Secondary Adobe PostScript Extreme for the Network

Before using these procedures, ensure that you have performed the tasks specified in “Basic Configuration of the Secondary Adobe PostScript Extreme System” on page 43. To configure the secondary RS/6000 AIX system (**prs1**) so it can interact with the Primary RS/6000 (**prs**) and IBM InfoPrint Control, use the following procedures.

File Configuration within Existing Directories on the Secondary

Note: To make these changes, you must log in to the secondary Adobe PostScript Extreme system as **root**.

1. Add a user account through the AIX System Management Interface Tool (SMIT) by entering `smitty` (ASCII interface) and take the following path:

   Security & Users --> **Users** --> **Add a User**

   In the **Add a User** panel, insert the values displayed in Figure 39 on page 53. Note that this figure displays only those values that you need to add or change from the defaults provided.

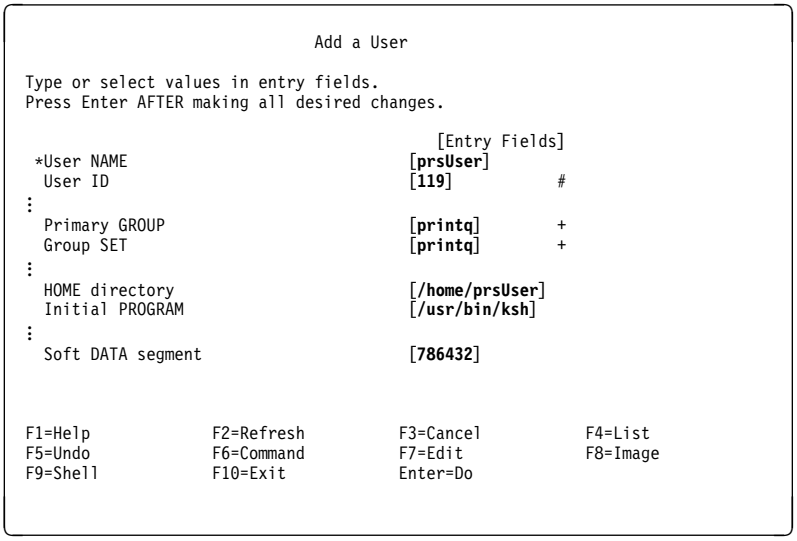

Figure 39. Add a User Panel

Note that the `Soft DATA segement` field is increased from its default value of `262144` to provide more memory for the Adobe PostScript Extreme engine program.

2. Once you have filled in these values, and entered this command successfully, press the **F3** key twice to access the SMIT **Users** panel.
3. From the SMIT **Users** panel, select the `Change a User's Password` option.
4. From the SMIT **Change a User's Password** panel, type `prsUser` as the value.
5. Press the **F10** key to exit SMIT.
6. Enter the following at the AIX command line:

   ```
   telnet localhost
   ```

7. Log into this system as **prsUser**.

   The system responds with the following message:

   ```
   3004-610:  You are required to change your password.
   Please choose a new one.
   ```

   You can reuse the password that you just set. Then, the system will ask you to confirm that password by typing it once again.

8. From the **/home/prsUser** directory, create the **.rhosts** file by specifying `vi .rhosts`
9. Add the following lines to the new file:

   ```
   prs        prsUser
   prs1       prsUser
   ```

10. Save the file.
11. Exit the telnet session by specifying the **Ctrl** and the **D** key in succession and then pressing Enter.

    This key sequence ends your **prsUser** status and returns you to **root** user status.

Note: You can verify this status by typing `whoami` at the AIX command line. The system response should be **root**. If it is not, repeat the preceeding step and verify that you have **root** status.

12. Move to the top of the directory structure by specifying:

    ```
    cd /
    ```

13. As **root**, use the **vi** editor to access the **.rhosts** file.
14. Add the following lines to this file:

    ```
    hostname        root
    prs             root
    prs1            root
    ```

15. Exit and save the file.
16. Access the **/etc** directory so you can configure the **hosts** file.
17. Add the following lines to the file:

    ```
    10.1.2.1         prs
    10.1.2.2         prs1
    10.1.3.2         hostname
    ```

    Note: If this Adobe PostScript Extreme Secondary system has already been set up in a network, there may be an earlier **prs1** entry in this file. To avoid confusion, comment out this earlier **prs1** entry.

18. Exit and save the file.
19. Access the **rc.net** file.

    Note: Because this file is often read-only, you must change the permissions to write to this file. You can modify permissions through either of the following line commands:

    ```
    chmod u+w /etc/rc.net
    ```

20. Once you have access, add the following lines to the bottom of the file, following the `fi`:

    ```
    /usr/sbin/no -o rfc1323=1
    /usr/sbin/no -o thewall=16384
    /usr/sbin/no -o tcp_recvspace=131072
    /usr/sbin/no -o tcp_sendspace=131072
    /usr/sbin/no -o udp_sendspace=65536
    /usr/sbin/no -o udp_recvspace=65536
    /usr/sbin/no -o sb_max=262144
    /usr/sbin/no -o ipqmaxlen=150

    /usr/samples/kernel/vmtune -c 256 -r 2 -R 48 -p 20 -P 80 -f 500 -F550
    ```

21. Exit and save the file.

22. From the AIX command line, enter the following command:

    ```
    mkitab rcprs1:2:respawn:"/usr/lpp/psf/bin/remoteSignal"
    ```

    This process allows a signal to be sent from the Primary to the Secondary.

23. The Adobe PostScript Extreme configuration file -- **/usr/lpp/psf/prs/prs2afpd.cfg** -- should only be modified to turn system tracing either on or off. Because traces impact the performance of Adobe PostScript Extreme, they should only be used to diagnose problems. For instructions on using tracing, see “Adobe PostScript Extreme Diagnostic Tools” on page 79.

Configuring the Fast Ethernet Cards on the Secondary AIX System

Because they exist on different subnets, installation and configuration of the Fast Ethernet cards requires the following procedures:

1. Install the Cards into the RS/6000 system.

   To perform this task, consult the following two publications:

   RS/6000: Adapters, Devices, and Cable Information for Multiple Bus Systems, **(SA38-0516)**
   Provides information about adapters, devices, and cables attached to or used within a system unit. This publication should come with your F50 RS/6000 System.

   PCI Adapter Placement Reference, **(SA38-0538)**
   Outlines Peripheral Component Interface (PCI) adapter slot placement restrictions and graphics adapter support configurations that are specific to your system unit.

2. Put the CD-ROM into the CD-ROM disk drive.

   For Adobe PostScript Extreme, you must have an Advanced Server CD-ROM that runs on AIX Operating system 4.2.1.

3. Logon to the system as **root**

4. Install the cards through the AIX System Management Interface Tool (SMIT) by entering `smitty devices` (ASCII interface) and select **Install/Configure Devices Added After IPL**.

5. From the **Install/Configure Devices Added After IPL** panel, select the F4 key to generate a list.

6. From the `Input device / directory for software` pop up menu, select

   ```
   /dev/cd0       (SCSI Multimedia CD-ROM Drive)
   ```

7. Press the ENTER key.

   The AIX system checks to see if the device drivers are loaded. If these drivers are not loaded, the system retrieves them from the CD-ROM and installs them in the correct location.

8. Press the **F10** key to exit SMIT.

9. Now, you must correctly map the installed Ethernet cards to the correct PCI port number on the back of the F50. Be sure to keep track of these values by specifying them on Figure 1 on page 2.

   To determine the correct ports for the Ethernet Card that you just installed, enter the following from the AIX command line:

   ```
   lsdev -C | grep -i ether
   ```

   The AIX system displays the Ethernet Cards available:

   ```
   ent0       Available 10-80    IBM PCI Ethernet Adapter (22100020)
   ent1       Available 30-60    3Com 3C905-TX-IBM Fast EtherLink XL NIC
   ent2       Available 30-68    3Com 3C905-TX-IBM Fast EtherLink XL NIC
   ⋮
   et1        Available          IEEE 802.3 Ethernet Network Interface
   et2        Available          IEEE 802.3 Ethernet Network Interface
   ```

   In this example, you must install both `et1` and `et2` as interfaces to the `ent1` and `ent2` Fast Ethernet cards.

   The **Available** status tells you that the device has been defined on your system. Because the F50 AIX system is new, you should have no problem finding available devices that have not yet been defined to your system. The numbers that follow the status are the location codes. By checking the AIX location codes described in *RS/6000 7025 F50 Series Service Guide*, (SA38-0541), you can determine which PCI port to use for physically attaching the Ethernet Card to the F50. In this example, Ethernet Card **ent1** goes to location code `30-60`, which indicates slot 6.

10. To install the first Fast Ethernet card, specify the following at the AIX command line:

    ```
    smitty tcpip
    ```

11. From the **TCP/IP** panel, select

    ```
    Minimum Configuration & Startup
    ```

12. From the **Available Network Interfaces** panel, select the appropriate Ethernet (et) card to configure. For example,

    ```
    et1      IEEE 802.3 Ethernet Network Interface
    ```

13. From the **Minimum Configuration & Startup** panel, specify the values displayed in Figure 40. You can specify these values for ent1 on the Worksheet displayed in Figure 1 on page 2. Note that the values not provided as defaults are specified in boldface.

```
                  Minimum Configuration & Startup

To Delete existing configuration data, please use Further Configuration menus

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

                                          [Entry Fields]
 *HOSTNAME                               [prs1]
 *INTERNET ADDRESS (dotted decimal)      [10.1.2.2]
  Network MASK (dotted decimal)          [255.255.255.0]
 *Network INTERFACE                       et1
  NAMESERVER
       Internet ADDRESS (dotted decimal) []
       DOMAIN Name                       []
  Default GATEWAY Address                []
  (dotted decimal or symbolic name)
  Your CABLE type                         N/A
  START Now                               Yes


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 40. Minimum Configuration & Startup panel

14. Once you have filled in these values, and entered this command successfully, press the **F3** key to return to the **TCP/IP** SMIT panel and take the following path:

    Further Configuration --> **Network Interfaces** -->

    Network Interface Selection -->

    Change/Show Characteristics of a Network Interface

15. From the **Available Network Interfaces** panel, select the appropriate Ethernet (et) interface to configure. For example,

```
et2      IEEE 802.3 Ethernet Network Interface
```

16. From the **Change / Show an IEEE 802.3 Ethernet Network Interface** panel, specify the values displayed in Figure 41. You can specify these values for ent2 on the Worksheet displayed in Figure 1 on page 2. Note that the values not provided as defaults are specified in bold face type.

```
          Change / Show an IEEE 802.3 Ethernet Network Interface

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

                                          [Entry Fields]
  Network Interface Name                   et2
  INTERNET ADDRESS (dotted decimal)       [10.1.3.1]
  Network Mask                            [255.255.255.0]
  (hexadecimal or dotted decimal)
  Current STATE                            up
  Use Address Resolution Protocol (ARP)?   yes
  BROADCAST ADDRESS (dotted decimal)      []



F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 41. Change / Show an IEEE 802.3 Ethernet Network Interface Panel

17. Once you have filled in these values, and entered this command successfully, press the **F10** key to exit SMIT.

Mounting NFS File Systems to the Secondary AIX system at Boot Time

Use the following procedure on the Secondary Adobe PostScript Extreme system (**prs1**) to mount the directories that you exported from the Primary system (**prs**) in “File System Configuration for New Directories on the Primary” on page 34.

Note: To perform the following procedure, ensure that you have **root** authority.

1. To create the correct mount points, enter the following at the AIX command line:

   ```
   mkdir -p /var/psf/prs/in
   ```

   ```
   mkdir -p /var/psf/prs/out
   ```

2. Create the NFS mounts for the directory **/var/psf/prs/in** through the AIX System Management Interface Tool (SMIT) by entering either `smit nfs` (AIXwindows interface) or `smitty nfs` (ASCII interface) and take the following path:

   Network File System (NFS) -->

   Add a File System for Mounting

   In the **Add a File System for Mounting** panel, insert the values displayed in Figure 42. Note that this figure displays all values required for exporting a directory.

```
                        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                    [/var/psf/prs/in]
 *PATHNAME of remote directory                [/var/psf/prs/in]
 *HOST where remote directory resides         [prs]
⋮
 *Use SECURE mount option?                    no
 *MOUNT now, add entry to                     both
  /etc/filesystems or both?
 */etc/filesystems entry will mount           yes
   the directory on system RESTART
⋮
 *Mount file system soft or hard              soft
⋮


⋮



F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 42. Add a File System for Mounting Panel

3. Once you have filled in these values, and entered this command successfully, press the **F3** key to access the SMIT **Network File System (NFS)** panel again.

4. Access the **Add a File System for Mounting** panel again.
5. Insert the values displayed in Figure 43. Note that this figure displays all values required for exporting a directory.

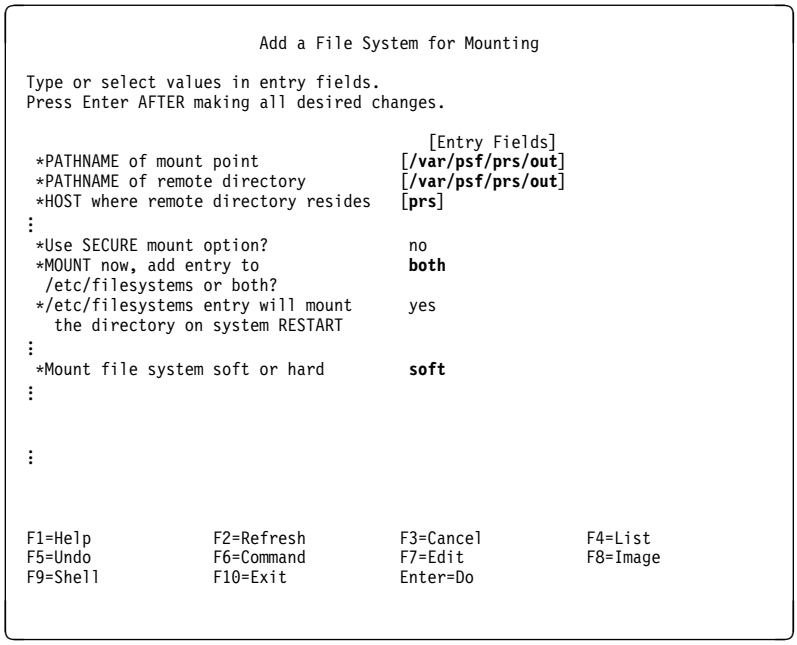

Figure 43. Add a File System for Mounting Panel

6. Once you have saved and exited SMIT, you can confirm that the file systems are mounted by entering the following command from the AIX Command prompt on **prs1**:

   ```
   mount
   ```

   The AIX operating system should provide a display similar to the following:

   ```
   node     mounted    mounted over  vfs    date    options


   ⋮

   prs    /var/psf/prs/in    /var/psf/prs/in   nfs3    May 02 08:36
   bg,soft,intr,rw

   prs    /var/psf/prs/out     /var/psf/prs/out    nfs3    May 02 08:36
   bg,soft,intr,rw
   ```

Installing InfoPrint on the Secondary

The following procedure is to be used on the Secondary Adobe PostScript Extreme system to install the InfoPrint code necessary to run this feature. To use Adobe PostScript Extreme, you must install the following:

- Single Adobe PostScript RIP
- PostScript fonts required with the single RIP
- InfoPrint message catalogs
- Adobe PostScript Extreme executables

Note: If you will be using Adobe PostScript Extreme to RIP double-byte fonts, you must also install the Kanji fonts.

You can install these InfoPrint options by using the ASCII terminal that you used to perform earlier configuration steps. Install the InfoPrint options from the product CD-ROM:

1. From the AIX command line, set the terminal display by entering:

   ```
   export TERM=ibm3151
   ```

2. Use the procedure described on the insert provided with the InfoPrint CD-ROM to create an install directory and mount the CD-ROM onto the Secondary Adobe PostScript Extreme system.

3. From the AIX command line on the Secondary, type:

   ```
   mdkir /usr/share/lpp/showcase
   ```

   This creates the directory required by the CD-ROM Showcase.

4. From the AIX command line on the Secondary, type:

   ```
   tar -xvf/cdrom/aix/install/installer.tar
   ```

   This command loads required code into the **/usr/lpp/InfoPrint** directory.

5. Install the InfoPrint program on the Primary by typing the **cdtty.exe** command on one line as displayed:

   ```
   /usr/lpp/InfoPrint/install/bin/cdtty.exe -p24 -cXXX-XXX-XXXX -aYYYY-YYYY-YYYY-YYYY-YYYY -n51
   ```

   where *XXX-XXX-XXXX* specifies the 10-digit customer number and *YYYY-YYYY-YYYY-YYYY-YYYY* represents the customer installation key.

   This command allows you to bypass the encryption, using both the customer number and the installation key. In the United States, you can obtain both the customer number and the installation key once your order for Adobe PostScript Extreme software has been processed by IBM Software Manufacturing Services. The installation key will come on the **KEY OR PASSWORD** page of the packing slip that is provided with the Adobe PostScript Extreme software package. If you cannot locate this page, contact the IBM Software Key Registration Center by telephone, FAX, or VNET:

   phone 1-800-446-8989 or 1-303-924-4671/4679

   FAX 1-800-925-7479 or 1-303-924-9644

   Internet keyatl@vnet.ibm.com

   Note: If you reside outside the United States, see “Using the Installation Keys for InfoPrint and Adobe PostScript Extreme” on page 6.

6. At the AIX command line specify the `smitty install_update` option.
7. Select the `Install and Update from ALL Available Software` field.
8. In the `INPUT device / directory for software` field, specify **/cdrom/aix/install/images**, the directory where InfoPrint options are installed.
9. Press `Enter`
10. From the **Install and Update from ALL Available Software** panel, move the cursor to the `SOFTWARE to install` field and press **F4**
11. From the **SOFTWARE to install** pop-up menu, scroll down the list and select the `ipr.prs_s` option.
12. From the **Install and Update from ALL Available Software** panel, specify the values displayed in Figure 44. Note that the values not provided as defaults are specified in bold face type.

```
          Install and Update from ALL Available Software

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

                                      [Entry Fields]
⋮
*SOFTWARE to install      [+2.1.0.0 ipr.prs_s]
 COMMIT software updates? [no]
 SAVE replaced files?     [yes]
⋮


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Undo             F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 44. Install and Update from ALL Available Software Panel

13. Press Enter.

    The system should respond by displaying the selected fileset and a list of requisites that are required by this fileset.

14. Check the end of the InfoPrint-generated messages to ensure that the software was successfully installed.

    If your installation was successful, you will see a display at the bottom of your screen similiar to the following:

```
Installation Summary
--------------------
Name                     Level           Part        Event       Result
-------------------------------------------------------------------------
ipr.adobe2afp.rte        2.1.0.0         USR         APPLY       SUCCESS
ipr.prtsvcs.msg.en_US    2.1.0.0         USR         APPLY       SUCCESS
ipr.prs_s.rte            2.1.0.0         USR         APPLY       SUCCESS
ipr.fnt.ps               2.1.0.0         USR         APPLY       SUCCESS
ipr.cal                  2.1.0.0         USR         APPLY       SUCCESS
ipr.xforms.tiff2afp      2.1.0.0         USR         APPLY       SUCCESS
ipr.xforms.raster2afp    2.1.0.0         USR         APPLY       SUCCESS
```

If the installation fails for any reason, the **installp** command displays failure information. In addition, the **installp** command identifies the directories that it was able to clean after the installation failure.

15. From the AIX command line on the Secondary, type:

    ```
    /usr/lpp/InfoPrint/install/bin/prtsvcs_cfg.ksh
    ```

    This executable performs several configuration tasks on the RS/6000, including the running of the **install_fonts** script if you have installed the **ipr.dbfnt.ps** installation option for printing double-byte Kanji fonts.

16. To properly configure the single-byte fonts for printing, type the following at the AIX command line:

    ```
    /usr/lpp/psf/ps/install_ps_fonts
    ```

Note: The **ipr.prs_t** install image is an alternate Adobe PostScript Extreme configuration. For information about expanding your Adobe PostScript Extreme system, contact your IBM Printing Systems Company marketing representative.

Rebooting the Secondary Adobe PostScript Extreme System

To ensure that all these changes take effect, you must reboot this Secondary (**prs1**) system. At the AIX command line, enter:

```
shutdown -Fr
```

Once you have completed these tasks, the Secondary Adobe PostScript Extreme system is ready to use.

Chapter 6. Verifying Directory Structures on the Adobe PostScript Extreme Systems

To use Adobe PostScript Extreme, the following directories must exist:

/usr/lpp/psf This directory must exist on all Adobe PostScript Extreme systems.

/var/psf/prs/in This input directory has mount points on **prs1** and the RIP-only system, but is mounted and striped on **prs**.

/var/psf/prs/out This output directory has mount points on **prs1** and the RIP-only system, but is mounted and striped on **prs**.

/var/psf/prs/rips This directory contains the PostScript RIPs and resides locally on each AIX system in the **datavg** volume group.

/var/psf/prs/syslogs This directory on the **rootvg** volume group contains the system log and other diagnostic support. It resides on **prs** only.

This syslog is a diagnostic tool that provides detailed system information without significantly degrading system performance.

Now that you have configured all three AIX Systems, you must verify the permissions of the directories that have been created. To do so, enter the following commands at the AIX command line and ensure that the permissions on each of your systems match the displays provided below.

Directory Structures on the Primary Adobe PostScript Extreme

1. To check the **/usr/lpp/psf/prs** directory, enter:

   ```
   ls -la /usr/lpp/psf/prs
   ```

   You should see:

   ```
   -r--r--r--   1 root     printq    329274 Jul 02 14:26 PS.VM
   -rw-rw-r--   1 root     printq     11010 Jul 28 14:26 prs2afpd.cfg
   -rw-rw-r--   1 root     printq      1982 Jul 28 12:38 ps2afpd.cfg
   lrwxrwxrwx   1 root     printq        30 Jul 25 15:57 ps2afpe.ps
   -> /usr/lpp/psf/ps2afp/ps2afpe.ps
   -r--r--r--   1 root     printq      1022 Jul 28 14:26 startupNORM.ps
   -r--r--r--   1 root     printq   5265765 Jul 28 14:26 superatm.db
   ```

2. To check the **/var/psf/prs** directory, enter:

   ```
   ls -la /var/psf/prs
   ```

   You should see:

   ```
   ⋮
   drwxrwsr-x   3 prsUser  printq       512 Jun 26 10:51 in
   drwxrwsr-x   3 prsUser  printq     38912 Jun 26 10:51 out
   drwxrwsr-x   6 prsUser  printq       512 Jun 26 10:08 rips
   drwxrwxrwx   2 root     printq       512 Jun 26 10:08 syslogs
   ```

3. To check the **/usr/lpp/psf/bin** directory, enter:

   ```
   ls -la /usr/lpp/psf/bin
   ```

   You should see:

   ```
   -r-xr-xr-x   1 root     printq    666784 Jun 02 14:25 prs2afpd
   ---x--x--x   1 root     printq   1937136 May 21 09:11 prs2afpi
   -r-xr-xr-x   1 root     printq     10615 Jun 02 14:26 prsKill
   -r-xr-xr-x   1 root     printq     93006 Jun 02 14:25 prsMonitor
   -r-xr-xr-x   1 root     printq    703458 Jun 02 14:25 prsassem
   -r-xr-xr-x   1 root     printq    667488 Jun 02 14:25 prsextract
   -r-xr-xr-x   1 root     printq    665076 Jun 02 14:25 prsfilesourcer
   -r-xr-xr-x   1 root     printq    616857 Jun 02 14:25 prsjobtextui
   -r-xr-xr-x   1 root     printq     40435 Jun 02 14:25 prslauncher
   -r-xr-xr-x   1 root     printq   3912184 Jun 02 14:26 prsnorm
   -r-xr-xr-x   1 root     printq   2405970 Jun 02 14:25 prsrip
   -r-xr-xr-x   1 root     printq    660880 Jun 02 14:25 prsseq
   -r-sr-sr-x   1 root     printq   3371500 May 21 09:11 ps2afpd
   -r--r--r--   1 root     printq    427017 May 19 12:37 ps2afpi.vm
   ```

Directory Structures on the Secondary Adobe PostScript Extreme

1. To check the **/usr/lpp/psf/prs** directory, enter:

   ```
   ls -la /usr/lpp/psf/prs
   ```

   You should see:

   ```
   ⋮
   -r--r--r--   1 root     printq    330440 Jul 28 09:59 PS.VM
   ⋮
   -rw-rw-r--   1 root     printq     11247 Jul 28 10:00 prs2afpd.cfg
   lrwxrwxrwx   1 root     printq        30 Jul 28 15:57 ps2afpe.ps
   -> /usr/lpp/psf/ps2afp/ps2afpe.ps
   ```

2. To check the **/var/psf/prs** directory, enter:

   ```
   ls -la /var/psf/prs
   ```

   You should see:

   ```
   ⋮
   drwxrwsr-x   3 prsUser  printq       512 Jul 28 1997  in
   drwxrwsr-x   3 prsUser  printq     38912 Jul 28 1997  out
   drwxrwsr-x   8 prsUser  printq     48128 Jul 28 10:00 rips
   ```

3. To check the **/usr/lpp/psf/bin** directory, enter:

   ```
   ls -la /usr/lpp/psf/bin
   ```

   You should see:

   ```
   ⋮
   ---x--x--x   1 root     printq   1937136 May 21 09:12 prs2afpi
   -r-xr-xr-x   1 root     printq     10619 Jun 26 10:00 prsKill
   -r-xr-xr-x   1 root     printq    100099 Jun 26 09:59 prsengine
   -r-xr-xr-x   1 root     printq   2521314 Jun 26 10:00 prsrip
   -r--r--r--   1 root     printq    427017 May 19 12:38 ps2afpi.vm
   -r-xr-xr-x   1 root     printq     15858 Jun 26 10:00 remoteSignal
   ```

For information about how these directories are configured, see “File System Configuration for New Directories on the Primary” on page 34

Chapter 7. Post Installation Adobe PostScript Extreme Diagnostics

Once you have installed the InfoPrint on both the Primary (**prs**) and the Secondary (**prs1**) Adobe PostScript Extreme systems, perform the following tests to ensure that the network configuration is correct and you are ready to submit jobs through InfoPrint.

Verifying Network Connections

The following procedure verifies that the network of an InfoPrint AIX system and the two Adobe PostScript Extreme systems (**prs** and **prs1**) is configured correctly.

1. From the InfoPrint AIX system, login as **root**.
2. At the AIX command line, type:

   ```
   ping -c3 prs
   ```

   This command tells you the dotted decimal notation address of the Primary (**prs**) Adobe PostScript Extreme system:

   ```
   PING prs: (10.1.1.2): 56 data bytes
   64 bytes from 10.1.1.2: icmp_seq=0 ttl=255 time=0 ms
   64 bytes from 10.1.1.2: icmp_seq=0 ttl=255 time=0 ms
   64 bytes from 10.1.1.2: icmp_seq=0 ttl=255 time=0 ms

   ----prs PING Statistics----
   3 packets transmitted, 3 packets received, 0% packet loss
   ```

3. At the AIX command line, type:

   ```
   rsh prs
   ```

   This command prompts you for the **root** password and should log you into the Primary Adobe PostScript Extreme system (**prs**).

4. When the display appears, type `hostname` at the AIX command line to verify that you are on the Primary (**prs**).

   The system should return a display of **prs**.

5. At the AIX command line, type:

   ```
   ping -c3 prs1
   ```

   This command tells you the dotted decimal notation address of the Secondary (**prs1**) Adobe PostScript Extreme system:

   ```
   PING prs1: (10.1.2.2): 56 data bytes
   64 bytes from 10.1.2.2: icmp_seq=0 ttl=255 time=0 ms
   64 bytes from 10.1.2.2: icmp_seq=0 ttl=255 time=0 ms
   64 bytes from 10.1.2.2: icmp_seq=0 ttl=255 time=0 ms

   ----prs PING Statistics----
   3 packets transmitted, 3 packets received, 0% packet loss
   ```

6. At the AIX command line, type:

   ```
   rsh prs1
   ```

7. When the display appears, type `hostname` at the AIX command line to verify that you are on the Secondary (**prs1**).

   The system should return a display of **prs1**.

8. At the AIX command line, type:

   ```
   ping -c3 hostname
   ```

   where *hostname* is the name of the InfoPrint AIX system.

   This command tells you the dotted decimal notation address of the InfoPrint AIX system:

   ```
   PING hostname: (10.1.3.2): 56 data bytes
   64 bytes from 10.1.3.2: icmp_seq=0 ttl=255 time=0 ms
   64 bytes from 10.1.3.2: icmp_seq=0 ttl=255 time=0 ms
   64 bytes from 10.1.3.2: icmp_seq=0 ttl=255 time=0 ms

   ----prs PING Statistics----
   3 packets transmitted, 3 packets received, 0% packet loss
   ```

9. At the AIX command line, type:

   ```
   rsh hostname
   ```

   This command prompts you for the **root** password and should logs you into the InfoPrint AIX system.

10. When the display appears, type the command `hostname` at the AIX command line to verify that you are on the InfoPrint AIX system.

    The system should return a display of *hostname*, where *hostname* is the symbolic name of the InfoPrint AIX system.

11. Once this test is completed successfully, type `exit` and press enter three times to get back to your initial login on the InfoPrint AIX system.

    Note: If any of these steps does not result in a login on the correct system, the network is not properly configured. Refer back to Chapter 3, “Installing and Configuring the InfoPrint AIX System” on page 11, Chapter 4, “Installing and Configuring the Primary Adobe PostScript Extreme System” on page 17, and Chapter 5, “Installing and Configuring the Secondary Adobe PostScript Extreme System” on page 43; ensure that you have completed all the steps in the order described. Then try the login procedure described above again. If the network is still not properly configured, test the Ethernet card connections and the Hub connections (if applicable) as described in “Testing the 3Com Adapter” on page 71. If the network is still not properly configured, contact your IBM Printing Systems Company service Representative.

Testing the 3Com Adapter

To test the 3Com adapter, use the following procedure on the InfoPrint AIX system, on the Primary (**prs**), and on the Secondary (**prs1**):

1. From the **3Com Network Adapter Diagnostics** main menu, select the `Test` option.
2. Select the `Setup Basic Tests` option and specify the **Enter** key.

   This value allows you to run the Group 1 tests that are cited in the following sources:

   - *3Com Etherlink III Parallel Tasking 16-Bit ISA Adopter User Guide* (chapter 5).
   - *3Com Fast Etherlink Parallel Tasking PCI 10/100BASE-T Network Adapter User Guide* (chapter 4).
3. From the `Test` option, select the `Run Basic Tests` option and specify the **Enter** key to run them.
4. From the `Test` option, select the `Run Loopback Test` to run the Group 2 test series.

   These Group 2 tests are also described in the publications cited under step 2.

   Note: This test requires a coaxial Fast EtherLink adapter and a loopback plug.
5. From the `Test` option, select the `Run Echo Test` to run the Group 3 test.

   These Group 3 tests are also described in the publications cited under step 2.

   Note: If any error messages appear, refer to the "Getting Help if a Test Fails" topic in the *3Com Etherlink III Parallel Tasking 16-Bit ISA Adopter User Guide* publication.
6. Press the **Esc** key to exit the **Diagnostics** main menu.
7. Press the **Esc** key twice to exit to the **IBM Power Personal Systems System Management Services** menu.
   Diagnostics

   This step should complete the hardware installation and configuration of the 3Com adapter.
8. Select the **F3** key to reboot the workstation.

Printing a Test Job through Adobe PostScript Extreme

The following procedure verifies that you can submit a print job through InfoPrint and print, using the Adobe PostScript Extreme system. You should attempt this test only after having ensured that the network is correctly configured in “Verifying Network Connections” on page 69.

1. Locate the **tiger.ps** test submission file by typing:

   ```
   cd /usr/lpp/psf/ps

   ls tiger.ps
   ```

   The system should display the **tiger.ps** file.

2. At the AIX command line, enter the following command to submit this job:

   ```
   ps2afp -anone tiger.ps
   ```

   You should receive the following system response:

   ```
   0423-158 ps2afp: Configuration file(s) processed:/usr/lpp/psf/ps2afp/ps2afp.cfg
   ps2afp -P8251 -Sprs -aNONE -j9999 -l11.0i -M24000K -r600 -s360
   -w8.5i -x0.0i -y0.0i tiger.ps
   [prs]:[Normalizer-0]:[26008]:Normalizer scratchFileDirectory = /var/psf/prs/out/
   [prs]:[Normalizer-1]:[20890]:Normalizer scratchFileDirectory = /var/psf/prs/out/
   [prs]:[Assembler]:[24988]:IBM-PRS Engine: Engine is up and running!
   [prs1]:[Engine]:[15240]:IBM-PRS Engine: allocating 20 raster buffers of 2500000
   bytes each
   [prs1]:[Engine]:[15240]:IBM-PRS Engine: opening server hostname on port 8252
   [prs1]:[Engine]:[15240]:IBM-PRS Engine: Wrote 1 pages of output type NONE (99)
   0423-204 ps2afp: Transform processing has completed.
   ```

   Note: The line-lengths for this display may vary, depending upon your display emulation.

   The display shows that the **-S** flag of the transform program is set to **prs**. This indicates that you are running the Adobe PostScript Extreme system, not the single Adobe PostScript RIP. The five-digit number that appears in the first full line after the **ps2afp** command flag values is the AIX process identifier (PID) for each software program. This number is vaulable for diagnosing possible problems when running Adobe PostScript Extreme.

   Note: If you do not receive an on-screen message comparable to the preceeding, check for diagnostic errors like those described in Chapter 9, “Troubleshooting Errors in the Adobe PostScript Extreme System” on page 77 and resubmit the **tiger.ps** job If the job continues to fail, consult your IBM Printing Systems Company service representative.

Chapter 8. Adobe PostScript Extreme Configuration File Options

The Adobe PostScript Extreme configuration file (**prs2afpd.cfg**) contains the parameters that control the PostScript RIP in the Adobe PostScript Extreme system. You need touch this file only when turning system tracing on or off (see “Adobe PostScript Extreme Diagnostic Tools” on page 79). A copy of this file resides in the Adobe PostScript Extreme configuration directory on both RS/6000 systems. The following sections describes:

- Adobe PostScript Extreme executable programs
- Adobe PostScript Extreme configuration file values

Note: IBM strongly recommends that users avoid modifying these tuning options unless recommend by your Printing Systems Company systems support personnel.

Adobe PostScript Extreme Executable Programs

The following describes the executable programs found on both the Primary (**prs**) and the Secondary (**prs1**) AIX Systems. Each program can be identified

prs_Executable = /usr/lpp/psf/bin/prs2afpd
Controls the flow of input data, rasterization, and usable output information to the printer. For a value, provide the fully qualified path for the executable (**ps2afpd**) that is known as the Adobe PostScript Extreme Systems Coordinator.

prs_Monitor = prs 9111
Provides the name of the host and socket port number where the **prs_Monitor** program resides. Runs the Adobe PostScript Extreme Systems Coordinator (**prs2afpd**) executable that starts the system.

Note: You can run only one monitor.

prs_Coordinator = prs
Provides the name of the host where the **prs2afpd** (Adobe PostScript Extreme System Coordinator) resides. Runs the Adobe PostScript Extreme Systems Coordinator (**prs2afpd**) executable that starts the system.

Note: You can run only one coordinator.

prs_Sequencer = prs 2
Controls the sequencing of individual pages of PostScript before they are sent to the rasterizer. The value indicates the AIX system name and the number of normalizers running. This must be the first process specified in this file.

Note: You can run only one sequencer.

prs_Normalizer = prs /usr/lpp/psf/prs/prs2afpd.cfg
Transforms raw PostScript data and creates individual pages of Portable Document Format (PDF) data that can be sent to the interpreters and rasterized.

You can use a maximum of four normalizers at one time. In such a configuration, the prs_Sequencer would contain the value `= prs 4`.

prs_Assembler = prs /usr/lpp/psf/prs/prs2afpd.cfg
Provides the interpreters with rasterized image processor (RIP) requests while indicating to the engine which page is being rasterized.

Note: You can run only one assembler.

prs_Filesourcer = prs
Places data that comes from the client into the correct directory structure and manages the data during the job.

Note: You can run only one file sourcer.

prs_Extractor = prs
Extracts the correct information from the data so that the PDF pages can be rasterized as the correct size that needs to be sent to the printer.

Note: You can run only one file sourcer.

prs_Interpreter = prs
Converts the PostScript and PDF data into raster bitmaps. You must define a new prs_Interpreter for each RIP that you want to run at your installation and spread them across both the **prs** and the **prs1** systems. The standard configuration is is **8**, with four on the Primary AIX system and four on the Secondary AIX system. You can define a maximum of 10 RIPs.

prs_Engine = /usr/lpp/psf/prs2afpd.cfg
Receives the output data (compressed bitmaps) from the interpreters and sends them to the printer. This executable is a sub-process of the assembler.

Note: You can run only one file sourcer.

Adobe PostScript Extreme Configuration File Values

The following describes the Adobe PostScript Extreme system values provided in the **prs2afpd.cfg** configuration file:

prs_buffers_size = 2000000
Specifies the size (in bytes) of the page buffer for each PostScript Interpreter in the page Assembler/Engine.

prs_height = 297.0m | 6600 | 11.0i
Specifies the page height of a transformed image in either millimeters, pels, pixels, or inches.

prs_init_file = /usr/lpp/psf/prs/ps2afpe.ps
Specifies the PostScript initialization file to use for the transform. This file specifies the types of messages that are reported from the PostScript interpreter during the PostScript transform.

prs_max_memory = 16000K
Specifies how much total memory (in KB) each PostScript interpreter should use. If you do not configure this value, it defaults to **16000K**, or **24000K** for systems that contain the Kanji fonts.

prs_num_page_buffers = 20
Specifies the number of buffers that receive the raster data that comes out of the PostScript interpreters.

prs_resolution = 600

Specifies the device resolution of the output image for each engine. Select the resolution based upon the printer on which you will be printing the image.

Users can specify more than a single resolution for different engines with this parameter on each system.

prs_width = 210.0m | 5100 | 8.50i

Specifies the page width of a transformed image in either millimeters, pels, pixels, or inches.

prs_x_offset = 0.0m | 0 | 0.0i

Specifies the left and right margins of a transformed image in either millimeters, pels, pixels, or inches.

prs_y_offset = 0.0m | 0 | 0.0i

Specifies the top and bottom margins of a transformed image in either millimeters, pels, pixels, or inches.

work_directory = /var/psf/prs/out

Specifies the path to the directory where the **prs2afpd** daemon puts its work files. The daemon must have read, write, and execute permissions to this directory.

Chapter 9. Troubleshooting Errors in the Adobe PostScript Extreme System

The following topic describes particular problems that can emerge while installing the Adobe PostScript Extreme System and the diagnostic tools that you can use to resolve these problems.

Problems Installing the Adobe PostScript Extreme System

The following topic is divided into problem symptoms and potential solutions. It is designed as an aide to resolving installation problems without having to call IBM Printing Systems Company service representatives.

Note: The FastHub 108T/104T problems only apply if you use a configuration that uses the 100 MB/S Fast Ethernet network hubs (WS-C104 / FASTHUB 104T).

Power LED does not Come On for FastHub 108T/104T

If the light emitting diode (LED) on your FastHub 108T/104T does not come on, ensure that the power cord has been connected.

Solution:

Plug in both ends of the power cord.

Link/Receive LED Does not Come On for FastHub 108T/104T

If the Link/Receive light emitting diode (LED) on your FastHub 108T/104T does not come on, it could be caused by the lack of a cable, a bad cable, a wrong cable type, or either the FastHub or the RS/6000 System not being powered on.

Solution:

You can correct each condition by:

- Inserting both ends of the cable into a device.
- Replacing the flawed cable with a known good cable.
- Verifying the cable selection as crossover or straight-through.
- Ensure that both the FastHub and the RS/6000 system have power.

Disabled LED Blinks for FastHub 108T/104T

If a disabled light emitting diode (LED) on your FastHub 108T/104T blinks, it might be the result of a faulty device at the other end of the cable (in this case, the RS/6000 system), or a bad cable.

Solution:

You can investigate the RS/6000 or replace the cable with a known good one.

To investigate the RS/6000:

1. List the status of your devices by specifying the following at the AIX command-line:

   ```
   lsdev -C | grep -i ether
   ```

   The system display should resemble the following:

   ```
   ent0       Available 10-80        IBM PCI Ethernet Adapter (22100020)
   ent1       Available 30-60        3Com 3C905-TX-IBM Fast EtherLink XL NIC
   ent2       Available 30-68        3Com 3C905-TX-IBM Fast EtherLink XL NIC
   en1        Defined                Standard Ethernet Network Interface
   en2        Defined                Standard Ethernet Network Interface
   et1        Defined                IEEE 802.3 Ethernet Network Interface
   et2        Defined                IEEE 802.3 Ethernet Network Interface
   ```

2. If either the `et1` or the `et2` second column displays as `Available` instead of defined, enter `smitty` at the command line and take the following path:

   Communications Applications and Services -->

   TCP/IP --> **Further Configuration** -->

   Network Interfaces -->

   Network Interface Selection -->

   Change / Show Characteristics of a Network Interface -->

   Note: If all the Ethernet Card values display as `Defined`, the problem is probably a bad cable.

3. From the **Available Network Interface** pop-up window, select the `et`*x* value as an interface to the **ent***x* 3Com Fast Ethernet Cards, where *x* is a numeric value of either 0, 1, or 2.

4. From the **Change / Show Characteristics of a Network Interface** panel, modify the `Current STATE` field and use the **F4** key to select the `up` value.

5. Once you have filled in these values and entered the command successfully, press the **F10** key to exit SMIT.

System Prompts For Password with Adobe PostScript Extreme During Network Verification

If you are prompted for a password when performing the tests described in “Verifying Network Connections” on page 69, you have not properly connected the network.

Solution:

On both the Primary (**prs**) and the Secondary (**prs1**) access the **.rhosts** file in both the **/** directory and the **/home/prsUser** directory and ensure that you have defined both **prs** and **prs1**. as described in “File Configuration within Existing Directories on the Primary” on page 31 and “File Configuration within Existing Directories on the Secondary” on page 52.

System Hangs at Reboot

If you have installed the Adobe PostScript Extreme system on the InfoPrint AIX system and the reboot hangs before it can access the Common Desktop Environment on IBM InfoPrint Control, the problem may be an incorrect address.

Solution:

Access the **hosts** file in the **/etc** directory and ensure that you have commented out the token-ring address provided with the system. Because you provided an IP address for the InfoPrint AIX system in “Configuring the InfoPrint AIX System” on page 11, any other addresses would cause confusion. If you have another such address, comment it out by placing a # symbol in front of that address.

Server Connection Cannot Be Established (RC = -79)

If you are following the directions in “Printing a Test Job through Adobe PostScript Extreme” on page 72 and receive the following message:

```
0423-158 ps2afp: Configuration file(s) processed:
/usr/lpp/psf/ps2afp/ps2afp.cfg
0423-156 ERROR: ps2afp: Server connection cannot be established
(return code=-79).
```

Use the following procedure to resolve the issue.

Solution:

On the Primary Adobe PostScript Extreme, check to see if the PostScript daemon file has stopped running by entering:

```
ps -e | grep ps2afpd
```

If the system returns a blank prompt, you can try starting the daemon on the Primary Adobe PostScript Extreme system by entering the following command:

```
ps2afpd -C pathname
```

where *pathname* is the explicit path for the appropriate PostScript configuration file. If the PostScript daemon has failed, there may be a problem with the **mkitab** command that is issued on the Primary (see page 33). Review your configuration of the Primary (**prs**) to ensure that it has been properly configured. If the problem persists, contact your IBM Printing Systems Company service representative.

Adobe PostScript Extreme Diagnostic Tools

Adobe PostScript Extreme gives you the ability to turn system tracing on and off to address error conditions. This section provides information on this topic.

How Can I Ensure Tracing Across All AIX Systems?

You only need to modify the **prs2afpd.cfg** configuration file when turning system tracing either on or off. If you modify the file on **prs**, the Primary system, you must ensure that the changes are propagated to **prs1**, the secondary system. To do so, enter the following command on either system:

```
rcp /usr/lpp/psf/prs/prs2afpd.cfg prs1:/usr/lpp/psf/prs/prs2afpd.cfg
```

How Can I Activate Tracing Feature Actions?

To view the detailed analysis of all interpreter actions, consult the **prs.syslog** file located in the **/var/psf/prs/syslogs** directory. To activate tracing information, access the Primary (**prs**) system as **root** and use the following procedure.

Note: Because this subsystem is installed as a script, you do not perform this action until after installation.

1. From the AIX command line, type:

   ```
   cd /etc
   ```

2. Add the following line to the bottom of the **syslog.conf** file:

   ```
   daemon.info                 /var/psf/prs/syslogs/prs.syslog
   ```

   This file contains network commands that direct where system log message are sent. Commands consist of a type of message and the location where they should go.

   Ensure that the file name is at the end of the line or the system searches for a file named **prs.syslog** .

3. Update the access and modification time of this file:

   ```
   touch  /var/psf/prs/syslogs/prs.syslog
   ```

4. Stop the **syslogd** subsystem:

   ```
   stopsrc -s syslogd
   ```

5. Start the **syslogd** subsystem:

   ```
   startsrc -s syslogd
   ```

How Can I Activate the Tracing Log?

To activate syslog tracing features, use the following syntax:

```
prs_tracelevel = hostname modulename
```

prs_tracelevel
Specifies the identifier for the trace.

hostname
Specifies the symbolic host name of the AIX system.

modulename
Specifies the module name of the software application program that you want to trace. The following module names are supported:

- Assembler
- Coordinator
- Engine
- Executable
- Extractor
- Filesourcer
- Interpreter
- Monitor
- Normalizer
- RipI
- Sequencer

How Can I Control the Size of the Trace Log?

If system performance slows down because of the growing size of your **syslog** file, use the following procedure:

1. Stop the **syslogd** subsystem:

   ```
   stopsrc -s syslogd
   ```

2. Remove the **prs.syslog** file:

   ```
   rm /var/psf/prs/syslogs/prs.syslog
   ```

3. Recreate a zero-length trace log file:

   ```
   touch  /var/psf/prs/syslogs/prs.syslog
   ```

4. Start the **syslogd** subsystem:

   ```
   startsrc -s syslogd
   ```

Appendix A. Fonts Required for Using the Adobe PostScript Extreme System

The font map files that can be added to the **prs2afpd** daemon for both the PostScript interpreter(s) and the normalizer(s) are found in the following locations:

/usr/lpp/psf/ps/psfonts.map Specifies the default font mapping file where the Type I (outline) fonts provided with InfoPrint reside. These are the standard mapped PostScript fonts.

/usr/lpp/psf/ps/fonts Specifies the default font directory for Adobe PostScript Extreme-specific PostScript fonts.

/var/psf/psfonts/user.map Specifies the font mapping file where you can add your own Type I (outline) fonts when printing either PostScript or PDF files. With the **installp** image, Adobe PostScript Extreme provides each RS/6000 system with a zero-length file for this purpose:

```
-rw-rw-rw- 1 root  printq     0 May 07 16:59 user.map
```

Standard Mapped PostScript Fonts

The standard set of Type I (outline) fonts that are used for transforming PostScript files for printing on InfoPrint printers are located in this file. This file maps the IBM Expanded Core Outline fonts with their installation locations. If a Type I file is in binary format, you must name the file in the format *some_file_name***.pfb**. For example, the Courier Cyrillic Greek font is provided in the following line:

```
font CourierCyrGrk cyrgrk/COU_CG.PFB
```

where `COU_CG.PFB` represents the binary file's location on the system.

For a complete list of the fonts supplied with the standard Adobe PostScript interpreter, see the **psfonts.map** file on your system.

Font fauxing is a method of creating single-byte fonts for printing. When a font is absent from the system, fauxing builds the font from the metrics file (**superatm.db**).

Adobe PostScript Extreme-Specific PostScript Fonts

The fonts that are required to run the Adobe PostScript Extreme system are located in the **fonts** directory:

- AdobeSansMM
- AdobeSansMM.MMM
- AdobeSerifMM
- AdobeSerifMM.MMM
- Courier
- Courier-Bold
- Courier-BoldOblique
- Courier-Oblique
- Helvetica
- Helvetica-Bold
- Helvetica-BoldOblique
- Helvetica-Oblique
- Symbol
- Times-Bold
- Times-BoldItalic
- Times-Italic
- Times-Roman

Glossary

This glossary provides definitions of specialized terms used in the evaluation and planning for Adobe PostScript Extreme in an IBM InfoPrint Control installation. Terms that are defined in nontechnical dictionaries and that have no special meaning in information processing are not defined in this glossary.

This glossary includes definitions from the following sources:

- Definitions reprinted from the *American National Dictionary for Information Processing Systems*, copyright 1982 by the Computer Business Equipment Manufacturers Association (CBEMA), are identified by the symbol (A) following the definition. Copies can be purchased from the American Standards Institute, 1430 Broadway, New York, New York 10018.
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- Definitions are also reprinted from the *CCITT Eighth Plenary Assembly Red Book, Terms and Definitions* and working documents published by the International Telegraph and Telephone Consultative Committee of the International Telecommunication Union, Geneva, 1985.
- Definitions that are specific to IBM products are so labeled, for example, "In SNA," or "In VM."
- Definitions from the Adobe glossary available on the World Wide Web Adobe Home Page

References

The following cross references are used in this glossary:

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 dictionary.

Synonymous with. This is a backward reference from a defined term to all other terms that have the same meaning.

See. This refers the reader to multiple-word terms that have the same last word.

See also. This refers the reader to terms that have a related, but not synonymous, meaning.

A

adapter. A part that electrically or physically connects a device to a computer or to another device.

Advanced Function Presentation (AFP). A set of licensed programs that use the all-points-addressable concept to print data on a wide variety of printers or display data on a variety of display devices. AFP also includes creating, formatting, archiving, viewing, retrieving, and distributing information.

AFP. Advanced Function Presentation.

Advanced Function Presentation data stream (AFP data stream). A presentation data stream that is processed in the AFP environment. MO:DCA-P is the strategic AFP interchange data stream. IPDS is the strategic AFP printer data stream.

AFPDS. A term used to identify the composed page, MO:DCA-P-based data stream interchanged in AFP environments.

AIX print commands. The set of AIX commands for printing that accept the **-o** flag: **enq**, **lp**, and **qprt**.

AIX for RS/6000. The operating system for the RS/6000 system that exists between the hardware and the application programs.

alphabetic character. A letter or other symbol, excluding digits, used in a language. Usually the uppercase and lowercase letters A through Z plus other special symbols (such as $ and _) allowed by a particular language. See also *alphanumeric character.*

alphanumeric character. Consisting of letters, numbers, and often other symbols, such as punctuation marks and mathematical symbols. See also *alphabetic character.*

ASCII (American Standard Code for Information Interchange). The standard code, using a coded character set consisting of 7-bit coded characters (8-bits including parity check), that is used for information interchange among data processing systems, data communication systems, and associated equipment. The ASCII set consists of control characters and graphic characters.

ATM: Adobe Type Manager Software. A font rasterizer for Type I font programs that converts an outline font program into bitmap characters for use on a raster device (e.g. a laser printer or computer monitor).

ATM makes it possible to print Type I fonts to non-PostScript printers. Adobe also supplies an API (Application Programmer's Interface) that allows applications to manipulate and control Type I fonts.

attachment. A device or feature attached to a processing unit, including required adapters. Contrast with *adapter.*

authorize. (1) To grant to a user the right to communicate with or make use of a computer system or display station. (2) To give a user either complete or restricted access to an object, resource, or function.

B

backend. In the AIX operating system, the program that sends output to a particular device. Synonymous with *backend program.*

backend program. Synonym for *backend.*

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

Bar Code Object Content Architecture (BCOCA). An architected collection of constructs used to interchange and present bar codes.

BCOCA. Bar Code Object Content Architecture.

boldface. (1) A heavy-faced type. (2) Printing in heavy-faced type.

C

case-sensitive. Able to distinguish between uppercase and lowercase letters.

CCITT. Consultative Committee on International Telegraphy and Telephone, now Telecommunications Standardization Sector (TSS).

CD-ROM. Compact disc read-only memory.

character. A letter, digit, or other symbol.

:

Character Identifier (CID). A font with a simplified internal structure and a compact file size that results in improved performance for large character sets such as Chinese, Cyrillic, Japanese, and Korean.

character set. A group of characters used for a specific reason; for example, the set of characters a printer can print or a keyboard can support.

CID-keyed Font. A file organization for multi-byte Type I fonts; glyphs are accessed by Character ID (CID) instead of by name look-up.

code point. A character within a code page.

command. A request to perform an operation or run a program. When parameters values, flags, or other operands are associated with a command, the resulting character string is a single command.

command line. The area of the screen where commands are displayed as they are typed.

communication adapter. (1) An optional hardware feature, available on certain processors, that permits communications facilities to be attached to the processors. (T) (2) A circuit card with associated software that enables a processor, controller, or other device to be connected to a network.

compact disc read-only memory (CD-ROM). High capacity read-only memory in the form of an optically read compact disk.

condensed print. A print format where characters are smaller and spaced closer together horizontally, typically at a density of 17 characters per inch.

configuration. The process of describing to a system the devices, optional features, and program products that have been installed so that these features can be used. Contrast with *customization.*

configuration file. A file that specifies the characteristics of a system or subsystem; for example, the operating system queueing system.

configure. To describe to a system the devices, optional features, and licensed programs installed on a system.

console. The main operating system display station.

Consultative Committee on International Telegraphy and Telephone (CCITT). A United Nations Specialized Standards group whose membership includes common carriers concerned with devising and proposing

recommendations for international telecommunications representing alphabets, graphics, control information, and other fundamental information interchange issues.

continuous forms. Blank paper or forms fed through a printer continuously. Synonymous with *continuous forms paper.*

continuous forms paper. (1) A continuous length of single-ply, fan-folded paper with both edges punched for tractor feeding and with perforation between pages. Paper is available in various sizes and basis weights. (2) Synonym for *continuous forms.* (T)

controller. A device that coordinates and controls the operation of one or more input/output devices, such as workstations, and synchronizes the operation of the system as a whole.

conversion. In programming languages, the transformation between values that represent the same data item but belong to different data types.

customization. The process of describing optional changes to defaults of a software program that is already installed on the system and configured so that it can be used. Contrast with *configuration.*

customize. To describe the system, the devices, programs, users, and user defaults for a particular data processing system or network. Contrast with *configure.*

D

daemon. In the AIX operating system, a process begun by the root user or by the root shell that can be stopped only by the root user. Daemon processes generally provide services that must be available at all times, such as sending data to the printer. A daemon runs continuously, looking for work to do, performing that work, and waiting for more work. A daemon does not have a controlling terminal associated with it.

data stream. A continuous stream of data elements being transmitted, or intended for transmission, in character or binary-digit form using a defined format.

data type. The type, format, or classification of a data object.

decompression. A function that expands data to the length that preceded data compression.

Decompression Performance Enhancement (DPE). A feature for IBM printers that improves performance while decompressing compressed graphics in GOCA format and images in IOCA format.

default. A value, attribute, or option that is assumed when no alternative is specified by the user.

default directory. The directory name supplied by the operating system if none is specified.

default value. A value stored in the system that is used when no other value is specified. See also *default.*

device driver. A program that operates a specific device, such as a printer, disk drive, or display.

diagnostic. Pertaining to the detection and isolation of errors in programs and faults in equipment.

directory. (1) A type of file containing the names and controlling information for other files or directories. (2) A listing of related files arranged in a useful hierarchy.

download. To transfer data from one computer for use on another one. Typically, users download from a larger computer to a diskette or fixed disk on a smaller computer or from a system unit to an adapter.

E

Encapsulated PostScript. A standard file format for importing and exporting PostScript language files among applications in a variety of heterogeneous environments.

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

error log entry. In AIX, a record in the system error log describing a hardware or software failure and containing failure data captured at the time of the failure.

error message. An indication that an error has been detected. (A)

error recovery. The process of correcting or bypassing the effects of a fault to restore a computer system to a prescribed condition. (T)

F

file transfer. In remote communications, the transfer of a file or files from one system to another over a communications link.

File Transfer Protocol (FTP). In TCP/IP, the protocol that makes it possible to transfer data among hosts and to use foreign hosts indirectly.

fixed-disk drive. The mechanism used to read and write information on a fixed disk.

flag. A modifier that appears on a command line with the command name that defines the action of the command. A dash usually precedes a flag.

fold. To translate the lowercase characters of a character string into uppercase.

font. (1) A family of characters of a given size and style, for example 9-point Helvetica. (2) A set of characters in a particular style. See *raster font.*

font mapping file. A list of all fonts that have been loaded into the system.

FTP. File Transfer Protocol.

full path name. The name of any directory or file expressed as a string of directories and files beginning with the root directory.

G

glyph. A recognizable abstract graphic symbol which is independent of any specific design. A glyph is the final presentation form of one or more characters. For example, 'f' and 'i' are both characters (when referenced in a document) and glyphs (as included in a font). The 'fi' ligature is only a glyph.

glyph image. A particular image of a glyph; for example, a swash version of a Garamond italic 'fi' ligature.

GOCA. Graphic Object Content Architecture.

graphic. A symbol produced by a process such as handwriting, drawing, or printing. (I) (A)

graphic character. A character that can be displayed or printed.

Graphic Object Content Architecture (GOCA). An architecture that provides a collection of graphics values and control structures used to interchange and present graphics data.

graphics. A type of data created from such fundamental drawing units such as lines, curves, polygons, and so forth.

H

hardcopy. A printed copy of machine output in a visually readable form such as printed reports, listings, documents, and summaries.

hardware. The physical equipment of computing and computer-directed activities. The physical components of a computer system. Contrast with *software.*

host. (1) The primary or controlling computer in the communications network. (2) See *host system.*

I

IBM Compatibility font. A category of font supplied as part of AFP Font Collection. Many of these fonts are derived from fonts created for specific IBM printers (such as the IBM Proprinter) or applications (such as Document Composition Facility). Examples of IBM Compatibility fonts include the Courier, Gothic Text, and Prestige type families. Synonymous with *Compatibility font*.

IBM Expanded Core font. A category of font supplied as part of AFP Font Collection. Examples of IBM Expanded Core Fonts include type families such as Latin1: Helvetica, Latin235: Times New Roman, and Thai: Monthob, Boldface, Gothic Test, Letter Gothic, and Prestige. Expanded Core fonts consist of what had been known as either *IBM Coordinated fonts* or *Coordinated fonts*. Synonymous with *Expanded Core Font.*

image. (1) An electronic representation of a picture produced by means of sensing light, sound, electron radiation, or other emanations coming from the picture or reflected by the picture. An image can also be generated directly by software without reference to an existing picture. (2) An electronic representation of an original document recorded by a scanning device.

Image Object Content Architecture (IOCA). An architected collection of constructs used to interchange and present images.

informational message. (1) A message that provides information to the operator but does not require a response. (2) A message that is not the result of an error condition.

input device. A physical device that provides data to a computer.

input file. A file opened in order to allow records to be read.

install. (1) To add a program, program option, or software program to the system in a manner such that it may be executed and will interact properly with all affected programs in the system. (2) To connect a piece of hardware to the processor.

Intelligent Printer Data Stream (IPDS). An all-points-addressable data stream that allows users to position text, images, and graphics at any defined point on a printed page.

interface. Hardware, software, or both, that links systems, programs, or devices.

Interpreter. The Adobe PostScript Raster Image Processor (RIP) that translates the instructions in a PostScript language file.

IOCA. Image Object Content Architecture.

IPDS. Intelligent printer data stream.

italic. A type style with characters that slant to the right.

J

job. (1) One or more related procedures or programs grouped into a procedure, identified by appropriate job control statements. (2) See *print job.*

K

K-byte. See *kilobyte.*

keyword. Part of a command operand that consists of a specific character string.

kilobyte (K-byte). 1024 bytes in decimal notation when referring to memory capacity; in all other cases, it is defined as 1000.

L

LAN. Local area network.

LAN server. A data station that provides services to other data stations on a local area network; for example, file server, print server, mail server. (T)

licensed program. A separately priced program and its associated materials that bear a copyright and are offered to customers under the terms and conditions of a licensing agreement.

local area network (LAN). (1) A computer network located on a user's premises within a limited geographical area. Communication within a local area network is not subject to external regulations; however, communication across the LAN boundary may be subject to some form of regulation. (2) A network in which a set of devices is connected to one another for communication and that can be connected to a larger network. See also *token-ring network.*

M

mapping. A list that establishes a correspondence between items in two groups. For example, a keyboard mapping can establish what character is displayed when a certain key is pressed.

M byte. Megabyte.

megabyte (MB). Loosely, one million bytes. When referring to semiconductor memory capacity, two to the twentieth power; 1048576 in decimal notation. When referring to media device storage, a megabyte is ten to the sixth power (1000000) bytes.

memory. Program-addressable memory from which instructions and other data can be loaded directly into registers for subsequent running or processing. Memory is sometimes referred to as "storage."

message. Information from the system that informs the user of a condition that may affect further processing of a current program.

message catalog. A file of messages that can be displayed.

Mixed Object Document Content Architecture. A strategic, architected, device-independent data stream for interchanging documents.

mixed-pitch font. A font that uses several different character widths so that it resembles proportionally spaced type.

MO:DCA-P. Mixed Object: Document Content Architecture for Presentation.

Mixed Object: Document Content Architecture for Presentation (MO:DCA-P). A printing data stream that is a subset of the Advanced Function Printing data stream.

mount. To make a file system accessible.

multi-byte fonts. Fonts that use multiple-byte encodings to access glyphs. An example is the CID-keyed font file format defined by Adobe Systems.

N

numeric. Pertaining to any of the digits 0 through 9.

O

online. Being controlled directly by or directly communicating with the computer.

operating system. Software that controls the running of programs and that also can provide such services as resource allocation, scheduling, input and output control, and data management.

outline font. A font that is composed of mathematical formulas, and that can be sized mathematically. An outline font is generally used with PostScript printing. Contrast with *raster font.*

parameter. (1) Information that the user supplies to a panel, command, or function. (2) In the AIX operating system, a keyword-value pair.

partitioned data set. A data set in direct access storage that is divided into partitions, called members, each of which can contain a program, part of a program, or data.

path. In a network, any route between any two nodes.

PDF file. The Portable Document Format (PDF) is the file format used by Adobe Acrobat. PDF files contain a very compact representation of text and graphics that enables documents with complete text and graphics to be viewed and printed on DOS. Macintosh, Windows, and UNIX (AIX, SGI, SUN, Solaris, and Linux) systems. For the format specification, see the PDF File Format Specification.

pel. Picture element.

permissions. Codes that determine how the file can be used by any users who work on the system.

pipe. To direct the data so that the output from one process becomes the input to another process. The standard output of one command can be connected to the standard input of another with the pipe operator (|). Two commands connected in this way constitute a pipeline.

pitch. A unit of width of typewriter type, based on the number of times a letter can be set in a linear inch. For example, 10-pitch type has 10 characters per inch.

point. A unit of typesetting measure equal to 0.01384 inch (0.35054 mm), or about 1/72 of an inch. There are 12 points per pica.

port. (1) A part of the system unit or remote controller to which cables for external devices (display stations, terminals, or printers) are attached. The port is an access point for data entry or exit. (2) A specific communications end point within a host. A port is identified by a port number.

PostScript. A page description language with graphics capabilities that was developed by Adobe Systems, Incorporated.

print queue. A file containing a list of the names of files waiting to be printed.

print spooler. The print spooler directs the printing of data from different applications. It temporarily stores information in separate files until they are printed.

profile. (1) A file containing customized settings for a system or user. (2) Data describing the significant features of a user, program, or device.

program level. The version, release, modification, and fix levels of a program.

proportionally spaced font. A font with graphic characters contained in character cells varying with the size of each graphic character. This allows for even spacing between printed characters and eliminates excess white space around narrow characters, such as the letter i. Contrast with *uniformly spaced font.*

prompt. A displayed symbol or message that requests information or operator action.

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

IBM InfoPrint Control printer. A printer supported by the IBM InfoPrint Control licensed program.

PTF. Program temporary fix.

PTOCA. Presentation Text Object Content Architecture.

Q

queue. (1) A line or list formed by items waiting to be processed. (2) To form or arrange in a queue.

R

raster. In Advanced Function Presentation, an on/off pattern of electrostatic images produced by the laser print head under control of the character generator.

rasterizer. Software that converts outline font characters into bitmap characters for imaging on a raster device, such as a computer monitor or laser printer.

raster font. A font in which the characters are defined directly by the raster bit map. See *font.* Contrast with *outline font.*

raster graphics. Computer graphics in which a display image is composed of an array of pixels arranged in rows and columns.

Raster Image Processor (RIP).

read access. In computer security, permission to read information.

record. (1) In programming languages, an aggregate that consists of data objects, possibly with different attributes, that usually have identifiers attached to them. (2) A set of data treated as a unit. (3) A collection of fields treated as a unit.

recovery procedure. (1) An action performed by the operator when an error message appears on the display screen. This action usually permits the program to run the next job. (2) The method of returning the system to the point where a major system error occurred and running the recent critical jobs again.

Request for Price Quotation (RPQ). A customer request for a price quotation on alterations or additions to the functional capabilities of a computing system, hardware product, or device. The RPQ may be used in conjunction with programming RPQs to solve unique data processing problems.

resolution. (1) In computer graphics, a measure of the sharpness of an image, expressed as the number of lines and columns on the display screen. (2) The number of pels per unit of linear measure.

resource. In Advanced Function Presentation, a collection of printing instructions, and sometimes data to be printed, that consists entirely of structured fields. A resource can be stored as a member of a directory and can be called for by InfoPrint when needed. The different resources are: coded font, character set, code page, page segment, overlay, and form definition.

resource directory. A place in which resource files are stored.

resource management. The function that protects serially accessed resources from concurrent access by computing tasks.

retry. To try the operation that caused the device error message again.

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.

roman font. The ordinary type style. In many typefaces, this is the default font, governing most text. It most often is used to turn off italics or boldface.

root. The user name for the system user with the most authority.

root directory. The directory, identified with a single / (backslash) that contains all other directories in the system.

routing. The assignment of the path by which a message will reach its destination.

RPQ. Request for Price Quotation.

S

server. (1) On a network, the computer that contains the data or provides the facilities to be accessed by other computers on the network. (2) A program that handles protocol, queuing, routing, and other tasks necessary for data transfer between devices in a computer system.

shell script. A series of commands, combined in a file, that carry out a particular function when the file is run or when the file is specified as a value to the AIX **sh** command.

simplexed output. Output printed by a printer on only one side of the sheet.

SMIT. System Management Interface Tool.

software. Programs, procedures, rules, and any associated documentation pertaining to the operating of a system. Contrast with *hardware.*

spool file. (1) A disk file containing output that has been saved for later printing. (2) Files used in the transmission of data among devices.

spooling (simultaneous peripheral operation online). Performing a peripheral operation such as printing while the computer is busy with other work.

spooling subsystem. A synonym for the queuing system that pertains to its use for queuing print jobs.

stand-alone workstation. A workstation that can perform tasks without being connected to other resources such as servers or host systems.

standard input. The primary source of data going into a command. Standard input comes from the keyboard unless redirection or piping is used, in which case standard input can be from a file or the output from another command.

standard output. The primary destination of data coming from a command. Standard output goes to the display unless redirection or piping is used, in which case standard output can be to a file or another command.

status. (1) The current condition or state of a program or device. For example, the status of a printer. (2) The condition of the hardware or software, usually represented in a status code.

storage. (1) The location of saved information. (2) In contrast to memory, the saving of information on physical devices such as disk or tape.

storage device. A functional unit for storing and retrieving data.

string. A linear sequence of entities such as characters or physical elements.

structure. A variable that contains an ordered group of data objects. Unlike an array, the data objects within a structure can have varied data types.

structured field. A mechanism that permits variable length data to be encoded for transmission in the data stream.

subdirectory. In the file system hierarchy, a directory contained within another directory.

syntax. The grammatical rules for constructing a command, statement, or program.

syntax diagram. A diagram for a command that displays how to enter the command on the command line.

system management. The tasks involved in maintaining the system in good working order and modifying the system to meet changing requirements.

System Management Interface Tool (SMIT). In the AIX operating system, a series of panels that allow you to perform functions without directly issuing any commands.

system memory. Synonymous with *main storage*, but used in hardware to refer to semiconductor memory (modules).

system prompt. Synonym for command line. The system prompt is the symbol that appears at the command line of an operating system. The system prompt indicates that the operating system is ready for the user to enter a command.

T

TCP. Transmission Control Protocol.

TCP/IP. Transmission Control Protocol/Internet Protocol.

text. (1) A type of data consisting of a set of linguistic characters (letters, numbers, and symbols) and formatting controls. (2) In word processing, information intended for human viewing that is presented in a two-dimensional form, such as data printed on paper or displayed on a screen.

throughput. A measure of the amount of work performed by a computer system over a period of time, for example, the number of jobs per day. (I)

token-ring network. A ring network that allows unidirectional data transmission between data stations, by a token passing procedure, such that the transmitted data return to the transmitting station. (T) See also *local area network*.

trace. (1) To record data that provides a history of events occurring in the system. (2) A record of the running of a computer program. It exhibits the sequences in which the instructions were run. (3) To monitor system performance or aid in debugging programs.

trace entry. Data recorded from a trace event.

trace log. A file where trace events are recorded.

transfer. To send data to one place and to receive data at another place.

transform. To change the form of data according to specified rules without significantly changing the meaning of the data. (I) (A)

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

Transmission Control Protocol/Internet Protocol (TCP/IP). A set of communications protocols that support peer-to-peer connectivity functions for both local and wide area networks.

TSS. Telecommunications Standardization Sector, formerly Consultative Committee on International Telegraphy and Telephone (CCITT).

Type I. The international type standard for digital type, available on almost every computer platform; more than 30,000 fonts are available in the Type I format.

Type I Fonts. The industry-standard outline font technology created by Adobe that enables type to be scaled to any size while staying sharp and clear. Over 20,000 Type I typefaces are available from vendors.

type style. The form of characters of a given size, style, and design within the set of the same font.

typographic font. A typeface originally designed for typesetting systems. Typographic fonts are usually proportionally spaced fonts.

typography. Printing with type.

U

uniformly spaced font. A font with graphic characters contained in character cells of uniform size. The distance between reference points of adjacent graphic characters is constant in the inline progression. The white space between the graphic characters can vary. Contrast with *proportionally spaced font.*

UNIX operating system. An operating system developed by Bell Laboratories that features multiprogramming in a multi-user environment. The UNIX operating system was originally developed for use on minicomputers but has been adapted for mainframes and microcomputers.

upload. To transfer data from one computer to another. Typically, users upload from a small computer to a large one.

user interface. The hardware, software, or both that implements a user interface, allowing the user to interact with and perform operations on a system, program, or device. Examples are a keyboard, mouse, command language, or windowing subsystem.

V

value. (1) A set of characters or a quantity associated with a parameter or name. (2) A quantity assigned to a constant, variable, parameter, or symbol.

variable. (1) A name used to represent a data item whose value can change while the program is running. (2) In programming languages, a language object that can take different values at different times. Contrast with *constant*. (3) A quantity that can assume any of a given set of values.

version number. The version level of a program, which is an indicator of the hardware and basic operating system upon which the program operates. The version, release, modification, and fix levels together comprise the program level or version of a program.

W

workstation. A terminal or microcomputer, usually one that is connected to a mainframe or to a network, at which a user can perform applications.

wrap around. (1) The movement of the point of reference in a file from the end of one line to the beginning of the next, or from the end of a file to the other. (2) The continuation of an operation from the maximum addressable location in storage to the first addressable location. (3) The continuation of register addresses from the highest register address to the lowest.

write access. In computer security, permission to write to an object.

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IBM InfoPrint Manager for AIX
Configuring and Using
the Adobe PostScript Extreme System
Version 2.1

Publication No. S544-5488-00

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Runtime values:

Document fileid	IPRU0MST SCRIPT
Document type	USERDOC
Document style	IPRZSTYL
Profile	EDFPRF40
Service Level	0030
SCRIPT/VS Release	4.0.0
Date	97.09.02
Time	10:35:40
Device	PSA
Number of Passes	3
Index	YES
SYSVAR D	YES
SYSVAR G	INLINE
SYSVAR V	BOULDER
SYSVAR X	YES
SYSVAR Y	NOBOX

Formatting values used:

Annotation	NO
Cross reference listing	YES
Cross reference head prefix only	NO
Dialog	LABEL
Duplex	YES
DVCF conditions file	(none)
DVCF value 1	(none)
DVCF value 2	(none)
DVCF value 3	(none)
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Explode	NO
Figure list on new page	YES
Figure/table number separation	YES
Folio-by-chapter	NO
Head 0 body text	Part
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Hyphenation	NO
Justification	NO
Language	ENGL
Keyboard	395
Layout	OFF
Leader dots	YES
Master index	(none)
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