



Licensed Program Specifications

Print Services Facility Version 4 Release 7.0 for z/OS Product number 5655-M32

Print Services Facility Version 4 Release 7 Modification 0 for z/OS® (PSF) provides device and resource-management support for Advanced Function Presentation (AFP) printers.

PSF also supports printing on z/OS-attached printers from an AIX® operating system by using the AFP Upload feature of PSF for z/OS.

PSF supports remote printing on AIX, Linux, and Windows operating systems by using one of these programs:

- The AFP Download Plus feature of PSF for z/OS
- The Download for z/OS feature of PSF for z/OS
- A distributed print function or workstation print manager product that is running on a Windows print server

PSF communicates between the Job Entry Subsystem (JES) and the printer to provide access to AFP printer functions. When PSF is processing line printer data, it uses instructions in an external print resource, called a *page definition*, to format the print lines into pages. A form definition resource is used to place the formatted pages on the media and to select media options.

PSF processes print jobs from applications that produce fully composed page output. Applications that produce fully composed page output contain both the output data and the formatting instructions for each page in the same records. PSF accepts data for a page in any valid sequence, processes the data, and creates the commands to drive the printers.

PSF does formatting outside the application program, providing output formatting that is independent of the application program. Changes to the application program need not affect formatting, and formatting changes need not affect the application.

For more information about z/OS print and output software, see [Infoprint Server and Transforms, PSF for z/OS - APS \(www.ibm.com/support/knowledgecenter/SSLTBW_2.4.0/com.ibm.zos.v2r4.aps/aps.htm\)](http://www.ibm.com/support/knowledgecenter/SSLTBW_2.4.0/com.ibm.zos.v2r4.aps/aps.htm).

Optional Features

Several optional, separately priced features are available with PSF.

Note: The optional Compatibility Fonts feature of PSF, which is available with PSF 4.5.0 and earlier, is no longer a feature in PSF 4.6.0 and later. The z/OS Font Collection, a base element of z/OS V2.2 and later, replaces the Compatibility Fonts feature.

These optional features are available with PSF 4.7.0:

AFP Conversion and Indexing Facility

AFP Conversion and Indexing Facility (ACIF) formats line data and XML data according to instructions in a page definition and converts it into an AFP data stream file. ACIF can be used to index the print file to identify individual groups of pages, such as a single customer's bank statement. ACIF also supports enhanced indexing capabilities. Using ACIF, a programmer can archive information and resources that are needed to print the job in system libraries and then retrieve them for printing or viewing. A PSF base license is not required to order ACIF.

AFP Download Plus

AFP Download Plus accepts line data, XML data, or Mixed Object Document Content Architecture (MO:DCA) data from the JES spool; transforms, if required, the data into Mixed Object Document Content Architecture for Presentation (MO:DCA-P); packages all resources and job attributes inline with the print file for printing the job; and, as an option, encodes the file before sending it to the receiving system. You can use AFP Download Plus to send output from a z/OS system to a receiver system for printing, emailing, or faxing with:

- Another PSF for z/OS system
- An AIX, Linux, or Windows print server

AFP Download Plus uses TCP/IP to send data sets from the JES spool to receiver systems. A cooperating receiver that runs on another system receives the data sets.

AFP Upload

AFP Upload receives print data from AIX and places it on the JES spool for printing on any printer that is supported by PSF for z/OS. Jobs that are submitted to AFP Upload can contain any type of data stream that the print server can transform to MO:DCA-P, except XML.

Download for z/OS

Download for z/OS sends data, without transforming it, from a z/OS system to a remote system for archiving with Content Manager OnDemand or for printing with:

- Another PSF for z/OS system that is running AFP Download Plus
- An AIX, Linux, or Windows print server

Download for z/OS uses TCP/IP to send data sets from the JES spool to remote systems. A cooperating server that is running on the remote system receives the data sets.

Specified Operating Environment

Hardware Requirements

PSF operates on IBM processors capable of supporting the operating systems listed in [Software Requirements](#) on page 2.

Printer Requirements

To determine supported printer functions and microcode level, you can use the display printer information function in PSF. For more information, see *PSF for z/OS: Customization*, S550-0427. To determine which functions your printer supports, you can also see the documentation for the printer.

ACIF Requirements

To use the ACIF feature of PSF, the hardware requirements are the same as those required by PSF for z/OS.

AFP Download Plus Requirements

To use the AFP Download Plus feature of PSF, the hardware requirements are the same as those that are required by:

- IBM Content Manager OnDemand for Multiplatforms Version 9.5 or later (5724-J33)
- PSF 4.7.0 for z/OS (5655-M32)

AFP Upload Requirements

To use the AFP Upload feature of PSF, the hardware requirements on the AIX system are:

- Hardware to support SNA communications between the z/OS and AIX systems (no additional hardware is required to support TCP/IP communications).
- Hardware that is required by the print server.
- 8 MB¹ of hard disk and 5 MB of memory for each upload queue.

Download for z/OS Requirements

To use the Download for z/OS feature of PSF, the hardware requirements are the same as those that are required by:

- IBM Content Manager OnDemand for Multiplatforms Version 9.5 or later (5724-J33)
- PSF 4.7.0 for z/OS (5655-M32)

Software Requirements

Before installing PSF, the z/OS Version 2.2 or later (5650-ZOS) operating system is required with supported levels of JES2 or JES3.

To install PSF, one of these is required:

- SMP/E Version 3.6 for z/OS (5655-G44)
- SMP/E element of z/OS

Communication Server Requirements

These functions of the z/OS Communications Server are required, depending on printer attachments:

- SNA Services for SNA-attached printers
- IP Services for TCP/IP-attached printers

RACF Requirements

Resource Access Control Facility (RACF®), part of the Security Server feature of z/OS, is required for optional RACF protection for user libraries and for print security labeling.

AFP Download Plus Requirements

To use the AFP Download Plus feature of PSF, the software requirements on the receiving system are one of these:

- IBM Content Manager OnDemand for Multiplatforms Version 9.5 or later (5724-J33)
- PSF 4.7.0 for z/OS (5655-M32)
- An AIX, Linux, or Windows print server

AFP Upload Requirements

To use the AFP Upload for AIX feature of PSF, the software requirements on the AIX system are:

- AIX Version 7.1 or later (5765-G98)

- InfoPrint Manager for AIX
- Communications Server for AIX Version 6.4 (5765-E51) for printing on SNA-attached printers

Download for z/OS Requirements

To use the Download for z/OS feature of PSF, the software requirements on the remote system are one of these:

- IBM Content Manager OnDemand for Multiplatforms Version 9.5 or later (5724-J33)
- PSF 4.7.0 for z/OS (5655-M32) with the AFP Download Plus feature
- An AIX, Linux, or Windows print server

PPFA Requirements

Page Printer Formatting Aid (PPFA) requires program temporary fixes (PTFs) to support some PSF functions; however, not all new functions are supported.

Licensed Program Materials Availability

Restricted materials: No. This licensed program is available without source licensed program materials. It is available in object code.

Supplemental Terms

Designated Machine Identification

Designated Machine Identification Required: Yes

Testing Period

None

Satisfaction Guarantee

IBM provides a two-month unconditional guarantee for any reason for basic licenses. IBM will credit the price paid. The guarantee period starts 1) 10 days after IBM ships the program or 2) on the day IBM authorizes the customer to make an Additional License copy.

Installation or Location License

A separate license is required for each designated machine on which the licensed program materials are used. An installation or location license cannot be used.

Use-Based Charges and Usage Restriction

- Usage License applies: Limited
- Usage License Restriction: Usage is limited by the usage tier that is specified in [Usage Tiers](#) on page 3. Tiers are determined based on the cumulative point value of the printers installed. You can use the point counting tool in PSF to determine your usage tier. For information about using the point counting tool, see *PSF for z/OS: Customization*, S550-0427.

Categories and Printer Points

The price you pay for a PSF for z/OS V4R7 software license depends on the number of printers PSF is driving and the speed of those printers. Printers are categorized and points are assigned to them based on the printer's published maximum rated impressions per minute (IPM). The printer manufacturer's documentation indicating

¹ MB = Megabytes. When referring to storage capacity, 2 to the twentieth power; 1048576 in decimal notation.

maximum rated speed may be used to place the printer in the proper category. Where no manufacturer's documentation is available, customers should contact their printer sales representative to obtain information on the printer's rated speed.

Printers with maximum speeds rated in lines-per-minute (LPM), characters-per-second (CPS), or inches-per-second (i.e., label printers) all fall into Category 1. These printers do not accumulate points toward the total PSF point value. Any number of printers in Category 1 can be driven with a PSF Tier 1 license. Except for Category 1, each category has a point value assigned that applies to each of the printer listed for that Printer Speed. Use [Table 1](#) on page 3 to determine the category and points for each attached printer.

- For *continuous forms printers*, the speed rated in impressions-per-minute (IPM) is the maximum capacity of industry standard 8½ inches (length) by *n* inches (width) pages per minute.
- For *continuous forms duplex capable printers*, the maximum speed of each printer engine is used to determine the point category and both engines count towards total point value.

Table 1: Printer categories, speeds, and points

Category	Printer Speed (IPM)	Printer Points
1	All Impact Printers	0
2	0–62	1
3	63–105	6
4	106–150	12
5	151–400	20
6	401–700	40
7	701–1000	55
8	1001+	65

Usage Tiers

After point values are determined for the printers driven by PSF, the total point value per PSF license must be calculated by multiplying the number of printers of each type by their respective point values. This cumulative point value represents the usage level for a particular PSF license and is used to select a PSF usage tier. Select a tier from [Table 2](#) on page 3 with a point range that includes the calculated cumulative point value.

Table 2: Pricing tiers based on printer points

PSF Usage Tier	Printer Point Range
1	Up to 5 points
2	Up to 9 points
3	Up to 14 points
4	Up to 20 points
5	Up to 30 points
6	Up to 46 points
7	Up to 66 points
8	Up to 86 points
9	Up to 151 points

Table 2: Pricing tiers based on printer points (continued)

PSF Usage Tier	Printer Point Range
10	Up to 301 points
11	Up to 601 points
12	602 or more points

If the customer exceeds the maximum number of points specified by the usage tier they have, the customer must obtain the appropriate tier for the license

Note: A tool is available to help determine the printers being driven by a PSF license. You can use the point counting tool shipped with PSF for z/OS to determine the correct usage tier. For information about using the point counting tool, see *PSF for z/OS: Customization*, S550-0427.

Type and Duration of Program Services

Program service, including an IBM® Support Center, will be available until discontinued by IBM with a minimum of 12 months written notice.

Authorization for Copy and Use on Home or Portable Computer

Not permitted for PSF 4.7.0 for z/OS.

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