



# Licensed Program Specifications

## Print Services Facility Version 4 Release 6.0 for z/OS Product number 5655-M32

Print Services Facility™ Version 4 Release 6 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 [z/OS Print Management Software \(www.ibm.com/systems/z/os/zos/printsoftware\)](http://www.ibm.com/systems/z/os/zos/printsoftware).

### 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. The z/OS Font Collection, a base element of z/OS V2.1 and later, replaces the Compatibility Fonts feature.

These optional features are available with PSF 4.6.0:

#### 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 . 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 4.6.0 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 MB<sup>1</sup> 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 4.6.0 for z/OS (5655-M32)

### Software Requirements

Before installing PSF, the z/OS Version 2.1 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 4.6.0 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 4.6.0 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 [Pricing 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 .

#### Printer Categories

PSF 4.6.0 is priced in Cumulative Block Tiers. The PSF tier is determined by the number of printers PSF is driving and the impressions-per-minute (IPM) rated speed of those printers. Printer points are assigned to each printer, then accumulated. The total number of points indicates the appropriate PSF price tier.

[Table 1](#) on page 3 defines the ranges of printer speeds and the points that are assigned to each printer category.

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

Category	Printer Speed (IPM)	Printer Points
1	Impact	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

A printer is considered to be driven by a single printer control unit, even if that control unit drives two printer engines for duplex continuous-forms printing (or certain continuous-forms printers that use two coordinated control units).

The rated speed for continuous forms printers is based on the number of landscape pages (8 1/2 inches length) that are printed per minute when only one page is printed across the width of the web. For continuous forms printers with wide webs (17 inches or greater width), the maximum rated speed is based on the number of pages that are printed per minute when two portrait pages (11 inches length) are printed side by side across the width of the web. For continuous forms duplex printers, the maximum rated speed is what is advertised for the duplex printer system.

### Pricing Tiers

After point values are determined for the printers that are 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 and accumulating the printer results. This cumulative point value represents the usage level for a particular PSF license and is used to select a PSF usage tier (see Table 2 on page 3). Usage tiers are additive: to order tier 6, tiers 1 - 5 must also be ordered or already installed.

Tier	Allowable Point Range
1	0 - 5
2	6 - 9
3	10 - 14
4	15 - 20
5	21 - 30
6	31 - 46
7	47 - 66
8	67 - 86
9	87 - 151
10	152 - 301

Tier	Allowable Point Range
11	302 - 601
12	602+

You can use the point counting tool in PSF to determine your usage tier based on the total printer points in your installation. For information about using the point counting tool, see .

If the customer exceeds the maximum number of points that are specified by the usage tier in Table 2 on page 3, the customer must obtain the appropriate pricing feature for the license.

### 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 4.6.0 for z/OS.

### Softcopy Publications

To support authorized use of PSF 4.6.0 for z/OS, printed copies of the displayable or source material can be made if the copyright notice and any other legend of ownership is reproduced on each copy or partial copy.

PSF for z/OS publications are available as PDF files on the [IBM Knowledge Center \(www.ibm.com/support/knowledgecenter/SSLTBW/welcome\)](http://www.ibm.com/support/knowledgecenter/SSLTBW/welcome) and the [z/OS Internet Library \(www.ibm.com/systems/z/os/zos/library/bkserv\)](http://www.ibm.com/systems/z/os/zos/library/bkserv).

### Warranty

This program is warranted as specified in the IBM license.

Licensed Program Specifications may be updated from time to time and such updates may constitute a change in specifications.

Following the discontinuance of all program services, this program will be provided "As is" as specified in the IBM license.

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December 2017

G550-0431-04

