
Chapter 7. PSF configuration object

This chapter describes the Print Service Facility (PSF) configuration object and the iSeries server. This object may be created when PSF/400 is used, or to use the AFP to PDF transform and the e-mail function of the Infoprint Server. The PSF configuration allows the use of specific options and capabilities from PSF. For more information about AFP software components and requirements, see Chapter 3, “IBM software for creating and managing your output.” on page 9.

The AFP Manager is used as a graphical interface to describe the related functions of the PSF configuration object. Information about installing and starting the AFP Manager are provided in Chapter 9, “Install and start the AFP Manager” on page 153.

This chapter includes the following topics:

- How to access the PSF configuration objects through AFP Manager
- Creating a PSF configuration object
- PSF configuration object functionality

The PSF configuration object can be created in two different ways:

- Using the 5250 Interface on the iSeries server (alternatively, the AFP manager may be used as part of the Operation Navigator)
- Using the AFP Manager described in 7.1, “Create an PSF configuration object” on page 130

All functions are also available in the 5250 interface. The CL commands (command language) related to the PSF configuration object are:

CHGPSFCFG Change PSF Configuration
CRTPSFCFG Create PSF Configuration
DLTPSFCFG Delete PSF Configuration
DSPPSFCFG Display PSF Configuration
WRKPSFCFG Work with PSF Configurations

New functions have been implemented to take advantage of the Infoprint Server. The functions of the PSF configuration object can be grouped as shown in the following list:

- Resource related functions
- Communication, sharing, and recovery functions
- PDF transform functions
- Advanced PSF functions

The PDF transform is part of the Infoprint Server but does not require PSF/400. You can create a PSF configuration object to use the PDF transform. See Chapter 2.6, “AFP to PDF” on page 27, for more information.

Figure 75 shows the iSeries print process with PSF/400, the PSF configuration object, and the font substitution table.

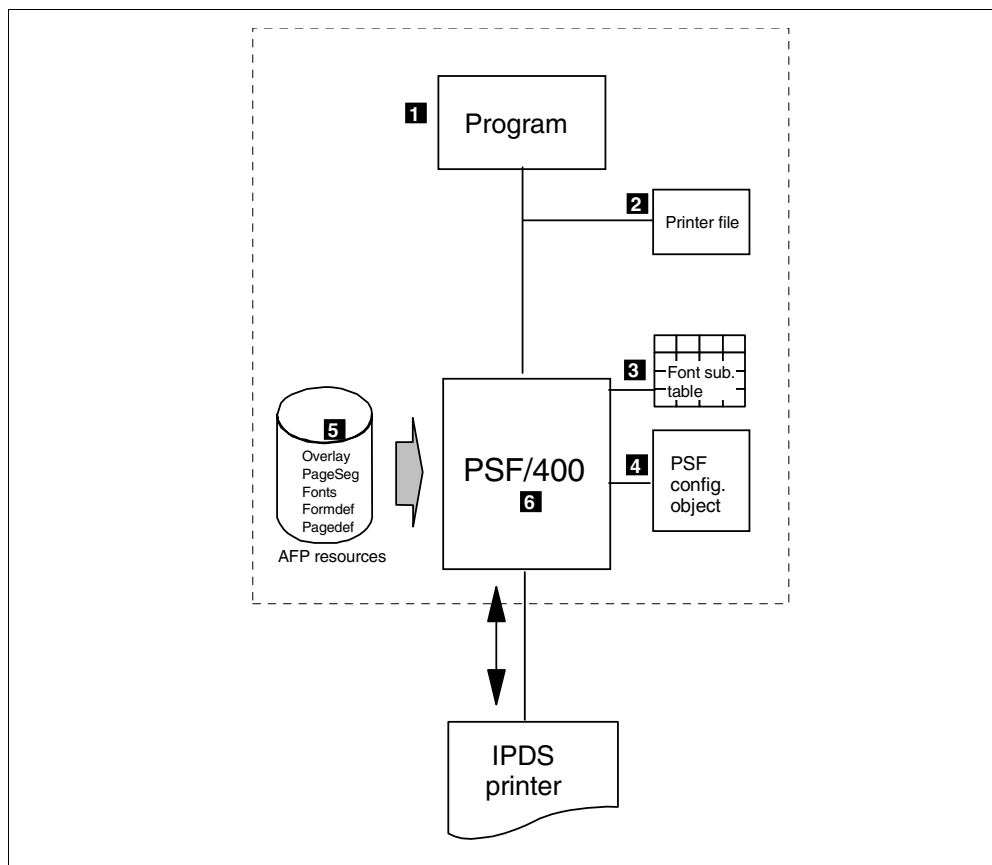


Figure 75. PSF configuration object

The following list numbers correspond to the numbers shown in Figure 75:

1. This is the print program or application that produces the data.
2. This is the printer file used by the program to format the spooled file.
3. A font substitution table is an object that defines how the substitution of missing font resources is performed. Chapter 1, “Font Mapping Table” on page 3, explains how to work with this object.
4. The PSF configuration object provides information about the printer, communication, and resource handling to PSF.
5. AFP resources are used to compose the print document. These resources may be overlays or electronic forms, a page segment or image, fonts, or form definition (Formdef) and page definition (Pagedef) as a formatting alternative to Data Description Specification (DDS).
6. PSF/400 composes the IPDS data stream and manages the dialogue with the printer.

7.1 Create an PSF configuration object

The PSF configuration object may be used to set parameters required by a specific customer environment. These parameters are required to optimize printing functions and the dialog between PSF/400 and IPDS printers.

You should use the AFP Manager to define and manage the PSF configuration object. Chapter 9, “Install and start the AFP Manager” on page 153, guides you through installing and starting the AFP Manager.

The 5250 interface and the AFP Manager use the same default parameters. The parameters are not grouped the same way, but all functions and parameters are the same.

Figure 76 shows the AFP Manager window started from Operations Navigator.

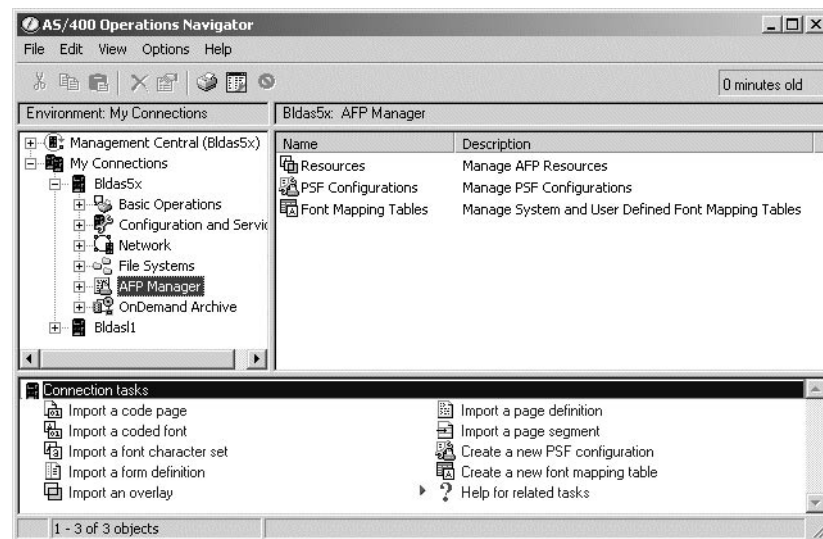


Figure 76. AFP Manager

You can now create or manage the PSF configuration objects. Select **Create a new PSF configuration** toward the bottom or **PSF Configurations** toward the top. Double-click **PSF Configurations** to view your PSF configurations objects.

The AFP Manager provides the same default as the 5250 interface on the iSeries server. Figure 77 shows the General configuration tab.

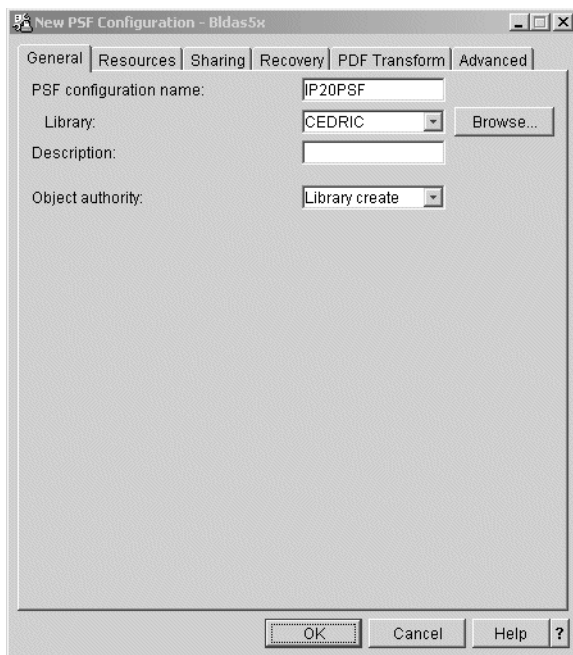


Figure 77. PSF configuration object: General tab

Specify a name for the PSF configuration object (it can be up to 10 characters long and must meet the AS/400 name requirements):

- **Library:** Specify the library where the PSF configuration object is created. It can be created in the current library or a different library. To specify a different library, enter the name or click **Browse...** to search for a library. The library you specify must exist.
- **Description:** Specify a description of the PSF configuration object. This is optional (but recommended). The description cannot contain more than 50 characters.
- **Object authority:** Specify the authority you want to give to users and ensure it meets the following criteria:
 - They do not have specific authority to the object.
 - They are not on an authorization list.
 - Their group profile has no specific authority to the object.

Note

You cannot change the authority for a PSF configuration object after it has been created.

7.1.1 Resources configuration

The Figure 78 shows the resources configuration tab

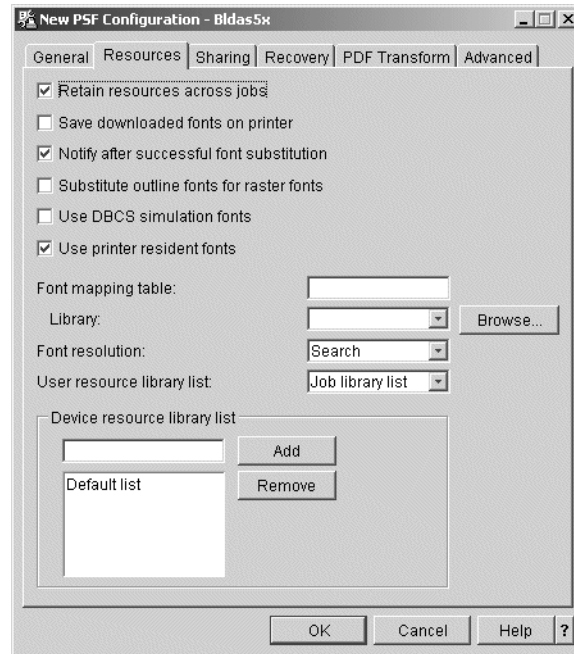


Figure 78. PSF configuration object: Resources tab

- **Retain resources across jobs:** Select this if you want to retain page segments and overlays across printer output file boundaries in the printer. This allows different printer output files to use the same resource without downloading them multiple times. These resources are purged from the printer when the printer writer is ended.

If this is not selected, page segments and overlays are deleted after every printer output file finishes printing.

Note: By default, code pages and font character sets are retained in the printer across printer output file boundaries.

- **Save downloaded fonts on printer:** Select this if you want to activate font capturing for eligible host downloaded fonts on the printer. Captured fonts are not purged from the printer when the printer writer is ended. This option may be very useful for reducing network traffic. If you plan to use font capture, we recommend enough printer memory. This option may not reduce print performance for a single byte character set.

Note: Because improper use of font capture may cause unpredictable results, only system administrators should handle the font capture feature.

- **Notify after successful font substitution:** Select this if you want PSF/400 to issue messages indicating that a successful font substitution has been performed.
- **Substitute outline fonts for raster fonts:** Select this if you want downloadable AFP raster font character sets to be replaced with equivalent downloadable outline fonts when possible. This allows you to use outline fonts to print applications that use raster fonts without changing the application or changing its appearance. Outline fonts are scalable so you don't have to store a different font character set for each point size on your system, and you don't have to send a different font to the printer for every change in point size. This increases your system storage space and enhances printing performance. You

may pay attention on our customized fonts. Customized fonts may be replaced by an Outline Font without your specific modifications.

- **Use DBCS simulation fonts:** Select this if you want PSF/400 to use DBCS simulation fonts instead of old DBCS raster fonts on printers using this PSF configuration object. DBCS simulation fonts are outline fonts that are positioned like the old raster fonts. This allows you to use outline fonts to print applications that use the old DBCS raster fonts without changing the application or changing its appearance. Outline fonts are scalable so you don't have to store a different font character set for each point size on your system, and you don't have to send a different font to the printer for every change in point size. This increases your system storage space and enhances printing performance.

If you select this, and your system does not have DBCS simulation fonts, PSF/400 searches for the simulation font. It then searches for the raster font. This extends printing time.

Note: The DBCS simulation fonts should only be used for an old application. Never mix the old DBCS raster fonts with the new DBCS Core raster or outline fonts since they are positioned differently.

- **Font mapping table:** Specify the name of a printer-resident to printer-resident (PPF) font table. This printer-resident font table is used by PSF/400 when printing to a printer that supports printer-resident fonts and the print job specifies a printer-resident font that is not supported by the printer.

This parameter is optional. If you don't specify a PPFCS font table, PSF/400 maps fonts with its internal tables as necessary.

- **Font resolution:** Specify the resolution PSF/400 should use to print the printer output file when the following conditions are met:
 - The printer supports multiple resolutions.
 - The printer is configured to report support of multiple resolutions.

Either the printer output file does not specify the font metrics and resolution with which to print the file or the font is not available at that resolution.

Click the arrow to select one of the following options:

- Search:** Search the library list for the first occurrence of a host font with a name match. The resolution of that font is used to print the file.
- 240:** The font resolution used to print the file should be 240 pels per inch.
- 300:** The font resolution used to print the file should be 300 pels per inch.

Note: If the printer is configured to report support of either 240 pels per inch or 300 pels per inch only, this value is ignored.

- **User resource library list:** Specify the user resource library list to be used when searching for AFP resources. When an AFP resource is specified with a printer output file, PSF/400 first searches the user resource library list and then searches the device resource library list for the resource.
- **Device resource library list:** Specify the device resource library list to be used when searching for AFP resources. When an AFP resource is specified in a printer output file, PSF/400 first searches the user resource library list and then searches the device resource library list for the resource.

You can use the default list or make your own list. To make your own list, specify a library and click **Add**. Your list is used instead of the default list. You can remove libraries from your custom list by selecting the library name and clicking **Delete**.

You can restore the default list by deleting all of the libraries from your list.

If you choose the default list, all of the following libraries (if present on the system) are searched for AFP resources, including:

- QFNTCPL
- QFNT01 - QFNT19
- QFNT61 - QFNT69

Note: If all the system libraries in this list have not been created, you can create libraries with the name of the missing system libraries. You can then place resources in these libraries that can subsequently be found by other users. Alternatively, the system administrator can create all of the missing system libraries with PUBLIC *USE authority.

7.1.2 PSF configuration Sharing options

Consider the sharing option if your printer must be used from different systems. As soon as a PSF uses a printer, no other system can print on the system. The print writer must be ended to finish a connection if no sharing is defined.

Figure 79 shows the Sharing tab on the PSF configuration object.

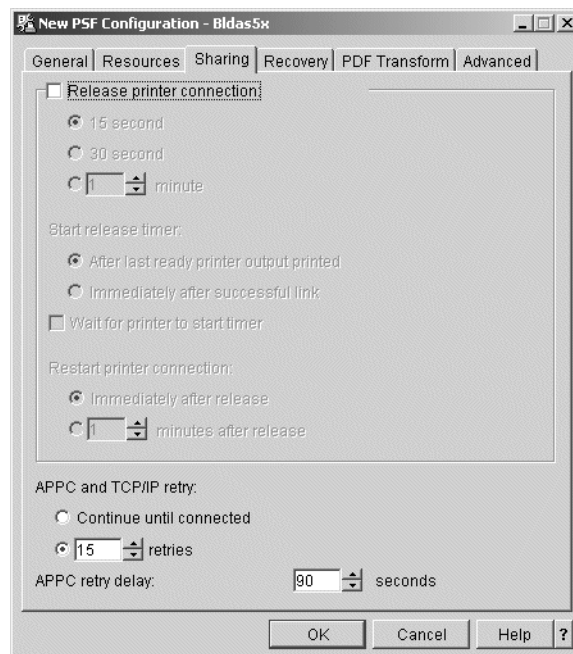


Figure 79. PSF configuration object: Sharing tab

- **Release printer connection:** These options allow you to control printer release. After selecting Release printer connection, you can control:
 - When to start the release timer
 - The duration of the release timer

- How long to wait after the printer is released before trying to establish a new session or dialog

When the printer is released, PSF/400 does not terminate but releases the connection with the printer. A printer output file that has started printing before the time is up finishes before the printer is released. Click a circle to choose 15 seconds, 30 seconds, or up to 1,440 minutes.

- **Start release timer:** These controls let you specify when to start the release timer. The value you specify under Release printer connection determines the length of time the writer keeps the printer before releasing the session. Releasing the session does not terminate PSF. It allows another PSF to start a session to the printer. You can choose one of the following:

- *After last ready printer output printed:* Select this to start the release timer after your last ready printer output file has been printed. If you select this, and a new printer output file becomes ready before the session is released, the timer is canceled. The timer starts again when there are no more ready printer output files.
- *Immediately after successful link:* Select this to start the release timer immediately after a successful link to the printer has been made. Use this value when you want the writer to time-share the printer. If you select this, and a new printer output file becomes ready before the session is released, the file is printed but the timer is not canceled.
- *Wait for printer to start timer:* Select this to wait for an indication from the printer before starting the release timer. This option works in conjunction with one of the other two choices. The timer is started after the writer receives an indication from the printer to release the IPDS dialog and one of the above requirements is met.

Note: This option is only available on IBM printer 3130 (Release 2). If the writer detects that the printer is not capable of controlling the IPDS dialog, this option is ignored.

Examples: If you select Immediately after successful link and 60 minute timer, the printer releases 60 minutes after a connection has been made. Any documents you start to print in that time are printed. The printer is released after 60 minutes or after it finishes printing any ready printer output files it has started (whichever is longer).

If you select After last ready printer output printed and 60 minute timer, the printer is released 60 minutes after the last ready printer output file prints. If some new printer output files become ready after the timer has started, but before the 60 minutes have passed, the new files are printed and the timer is stopped. After the last file has printed, the 60-minute timer is restarted.

Note: Only printers and devices attached to a server using APPC or TCP/IP support these options. The IBM 3130, Release 2, with a Twinaxial connection supports these options if Wait for printer to start timer is selected.

- **Restart printer connection:** These controls allow you to specify how long the printer writer should wait before trying to establish a new session or dialog after the printer is released. You can select one of the following options:
 - *Immediately after release:* Select this to try to establish a new session or dialog as soon as a printer output file is ready.

- *Specified number of minutes after release*: Select this to specify a number of minutes to wait before the printer writer tries to establish a new session or dialog. Specify the number of minutes or click the arrows to select the number of minutes. You can specify, at most, 1,440 minutes.

Example: If you specify 60 minutes after release, the writer looks for a printer output file 60 minutes after the printer is released. If there is one ready, the writer tries to establish a session. If there is no output file ready, the writer keeps looking for one periodically. When one is found, the writer tries to establish a session with the printer.

- **APPC and TCP/IP retry:** These options allow you to control APPC and TCP/IP retries after PSF/400 receives notification that a session start request has failed:
 - To control the number of times PSF/400 tries to start a session, select one of the following options:
 - **Continue until connected:** Select this if you wish to try to establish a connection until one is made.
 - **Specified number of retries:** Select this to specify the number of times to try to establish a connection with the printer if the first try fails. Specify the number or click the arrows to select the number of retries. You can specify at most 99 retries.
 - Note:** These parameters only apply to printers and devices attached to a server using APPC or TCP/IP.
 - To control the amount of time you want PSF/400 to pause after it receives notification that a session start request has failed, specify the desired number of seconds after APPC retry delay. After the specified time has elapsed, another session start request is issued. You may specify between 0 and 999 seconds.

7.1.3 PSF configuration object Recovery option

These functions allows PSF to recover an inactive session and determine which part of the job have proceeded. Figure 80 shows the different options available on the Recovery tab.

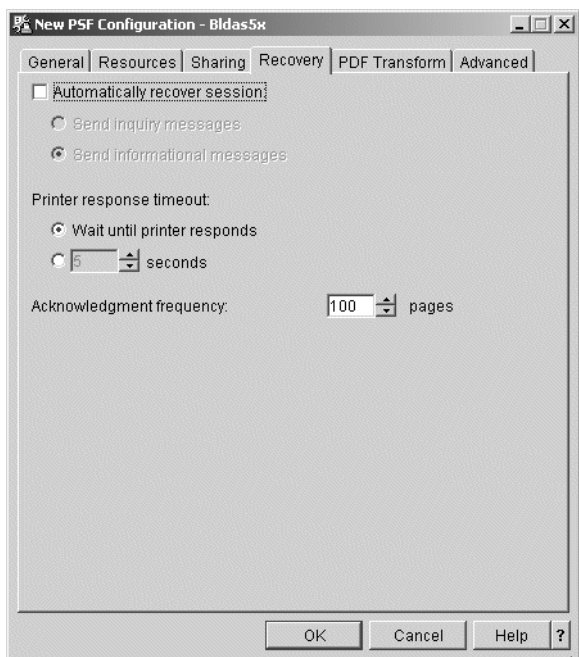


Figure 80. PSF configuration object: Recovery tab

- **Automatically recover session:** These options allow you to control session recovery. Select **Automatically recover session** to have PSF try to resume printing when a session has been unexpectedly ended by a device. A message is sent to the message queue when PSF/400 performs automatic session recovery. You can choose one of the following options:
 - *Send inquiry messages:* This message allows you to specify the page number from which a writer should begin printing the output file that was being processed when the session was ended.
 - *Send informational messages:* This message informs you that PSF/400 is performing automatic session recovery.

Note: These parameters only apply to printers and devices attached to a server using APPC or TCP/IP.

If you are using an APPC-attached printer or device, you must use an APPC controller description and an APPC device description, both of which specify APPN(*YES) on your server. Additionally, the APPC controller description must specify MINSWTSTS(*VRYONPND).

- **Printer response timer:** These options allow you to control how long to wait for a response from a TCP/IP-attached printer. You can choose one of the following options:
 - *Wait until printer responds:* Select this if you want the printer writer to wait for a response from the printer until one is received. If the writer does not receive a message, it is never ended. To avoid this, you may want to use the other option.
 - *Specified number of seconds:* Select this to specify how long the printer writer should wait for a response from the printer. Specify the number, or click the arrows, to select the number of seconds. You may specify between 5 and 3,600 seconds. The writer is ended if the printer does not respond

within the specified amount of time. If this happens, a message is sent to the message queue associated with the writer.

- **Acknowledgment frequency:** Specify how often you want PSF/400 to send IPDS acknowledgment requests to a printer. The printer responses contain information about the status of pages sent to the printer.

Acknowledgment frequency is supported on all attachments. You may specify between 1 and 32,767 pages. Specify the number, or click the arrows, to select the number of pages.

If a printer output file contains fewer pages than you specified, an acknowledgment is requested after the last page of the file is sent.

When a connection with a printer is abnormally ended, PSF/400 may reprint pages because the printer could not return the status of some pages that were printed. If you send acknowledgment requests more often, the number of pages that may be reprinted can be decreased. For example, if you specified 100 as the acknowledgment frequency, and the job fails on page 156, PSF/400 does not know that the last 56 pages printed and they are printed again. In the same situation, if you specified 50 as the acknowledgment frequency, PSF/400 knows that the first 150 pages printed and only prints the last six again. However, if you request acknowledgments too often, such as one per page, you may notice slower performance.

7.1.4 PDF transform options

The Infoprint Server for iSeries provide new transform capability. The AFP to PDF transform is part of the Infoprint server. The options for the AFP to PDF transform have been added in the PSF configuration object, including:

- **Generate PDF:** Controls allow you to generate one or multiple PDF files and store the file or send it. Select Generate PDF if you want the printer output converted to PDF. You can do one of the following tasks with the PDF files:
 - *Store as printer output:* Select this if you want to store the PDF output as a printable file. You can specify the output queue on which to store the file.
 - *Store as stream file:* Select this if you want to store the PDF output as a stream file. This allows you to electronically mail the file or use the file in an Internet based application, such as a soft copy repository. You can specify the path where you want the PDF output to be stored.
 - *Send as electronic mail:* Select this if you want PSF/400 to send the PDF file as e-mail. You can specify who sends the e-mail and which e-mail mapping program to use.

Along with the above options, you can choose to generate multiple PDF files. Select this if you want to split the PDF output into multiple PDF files at each start group boundary (DDS keyword STRPAGGRP) in the data stream when applicable. If you select this option, and there is at least one page group but some data is not in a page group, you receive an error and the PSF configuration object is not created. If you select this option, and there are no page groups, one PDF file is created.

Note: You must have Infoprint Server for OS/400 to generate PDF files.

Figure 81 shows the PDF configuration tab.

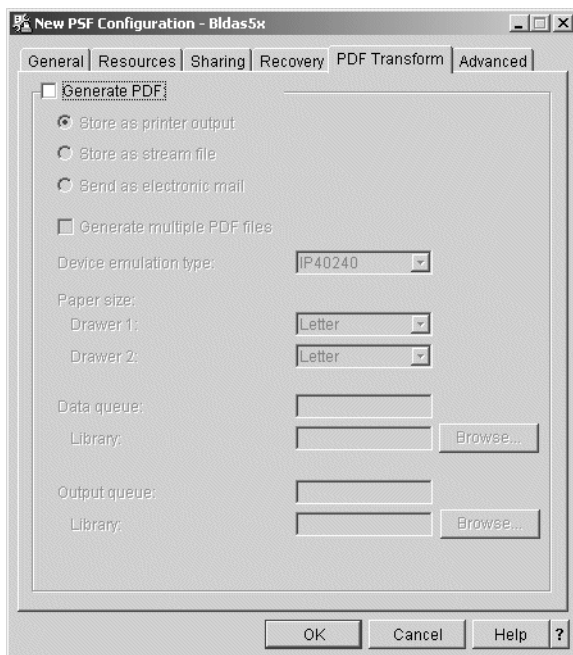


Figure 81. PSF configuration object: PDF Transform tab

- **Device emulation type:** Specify the type of device that the virtual printer associated with the IPDS to PDF transform should emulate. Click the arrow to select one of the following options:
 - IP40240** The virtual printer should emulate an IP40 printer configured at 240 pels per inch resolution.
 - IP40300** The virtual printer should emulate an IP40 printer configured at 300 pels per inch resolution.
 - 4028** The virtual printer should emulate a 4028 printer.
 - 3812** The virtual printer should emulate a 3812 printer.
- **Paper size:** Specify the size of paper in drawers one and two of the device associated with the IPDS to PDF transform. This should be the device specified in Device emulation type. Click the arrow to choose from a list.
- **Data queue:** Specify the name of the data queue where PSF/400 logs the IPDS to PDF transformation completion notifications. This is optional. However, if you specify a data queue, you must specify the library in which it is contained. The data queue must exist when you use this PSF configuration object. If the data queue you specify does not exist at that time, you cannot call the writer that uses this PSF configuration object. If the data queue you specify is damaged or full, the completion notifications are not logged.
- **Library:** Specify the library where the data queue is located. Click **Browse...** to search for one. If the library you specify does not exist when you try to use the PSF configuration object, you cannot call the writer that calls this PSF configuration object.
- **Store as printer output:** Use the Store as printer output parameters to store PDF output as a printable file on the specified output queue. You must specify an output queue.

- **Output queue:** Specify the name of the output queue that should be used for storing the PDF output. The output queue must exist when this PSF configuration object is used. If the output queue does not exist when you try to use the PSF configuration object, you cannot call the writer that uses this PSF configuration object.
- **Library:** Specify the library where the output queue is located. Click **Browse...** to search for one. The library you specify must contain the output queue when this PSF configuration object is used. If the library does not exist when you try to use the PSF configuration object, you cannot call the writer that uses this PSF configuration object.

7.1.5 PSF configuration object Advanced options

The following list explains the PSF configuration object Advanced options:

- **Allow IPDS and SCS files to bypass conversion:** Before printing, SCS files are converted to IPDS files. These are then converted to AFPDS, and then back to IPDS. Also, IPDS files are converted to AFPDS, and are then converted back to IPDS. The final IPDS files have specific commands for your printer. You can choose to skip the conversion to AFPDS and back to IPDS. This is called IPDS pass-through.

Select this if you want to allow IPDS pass-through for eligible files configured with this PSF configuration object.

Not all SCS or IPDS printer output files are eligible for IPDS pass-through. Some files may contain special functions that require transform to AFPDS for correct printing. Specifying IPDS pass-through allows only those printer output files eligible for IPDS pass-through to bypass the extra transforms.

IPDS pass-through is not valid for all PSF/400 supported printers. Any printer (or attachment) that does not support resident fonts cannot support IPDS pass-through. This is because the resident font references in the data stream must be mapped to host fonts that are downloaded to the printer. Distributed Print Function (DPF) is a function supported by the PSF for OS/2 print server that blocks the use of printer-resident fonts. Therefore, no DPF-attached printer supports IPDS pass through.

Any printer that supports resident fonts can support IPDS pass-through. See the documentation provided with your printer to determine if your printer supports resident fonts (and therefore IPDS pass-through).

Note: Selecting this speeds up printing, but you should not skip the conversion unless you know that the original IPDS stream works with your printer.

Figure 82 shows the Advanced functions of the PSF configuration object:

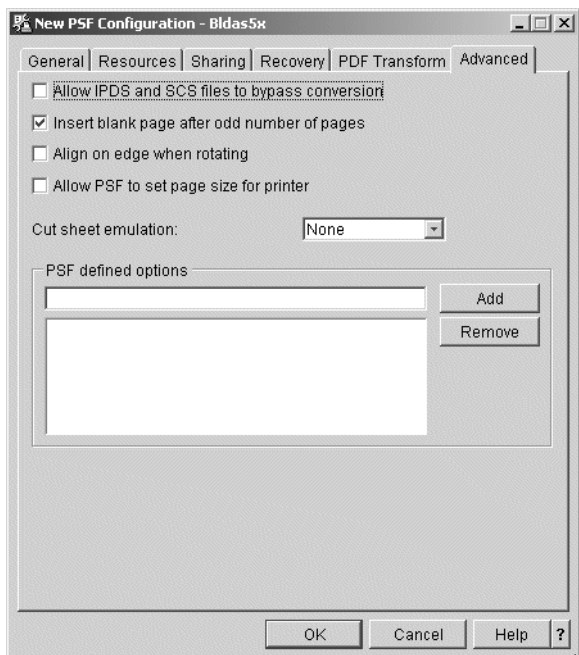


Figure 82. PSF configuration object: Advanced tab

- **Insert blank page after odd number of pages:** Select this if you want PSF/400 to issue a blank page after every separator page and printer output file copy that contains an odd number of pages. The blank pages assure that the first page of one file is not printed on the back of the last page of another file. If you are going to use bursting, you should select this option.

Note: This parameter only applies to continuous forms printers. See the documentation provided with your printer to determine if your printer supports this feature.

- **Align on edge when rotating:** When the page rotation value of a printer output file is *COR or *AUTO on the server, and the server rotates the output, the output is normally rotated 90 degrees.

Select **Align on edge** when rotating to spin the output 270 degrees instead of 90.

- **Allow PSF to set page size for printer:** Select this if you want PSF/400 to set the page size (forms) in the printer.

Note: This parameter does not apply to all printers. See the documentation provided with your printer to determine if your printer supports this feature.

- **Cut sheet emulation:** Specify how frequently PSF/400 checks the document page to determine if it fits on half the continuous forms page when using cut sheet emulation. If PSF/400 determines that the page does not fit properly, cut sheet emulation mode is ended. Click the arrow to select one of the following options:

None: PSF/400 does not verify that the document page fits on half the continuous forms physical page.

- *Check first page:* The first page of each copy group is checked to determine if the page fits on half the continuous forms page.

- **Check front side:** Each front side page is checked to determine if the page fits on half the continuous forms page.
- **PSF defined options:** These parameters allow you to add and remove PSF defined options. One or more options may be made available between releases of OS/400. You can add and remove these options. The list shows your current PSF defined options. If the option you specify is not valid, PSF/400 ignores the option.

To add an option, specify the value as defined by IBM and click **Add**. The new option appears in the list. You can have a maximum of six PSF defined options at a time.

To delete an option, select it from the list and click **Remove**.

