



Using Intelligent Routing

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Using Intelligent Routing

This document supplements information about Infoprint® Server for iSeries™ (hereafter referred to as Infoprint Server) found in *Infoprint Server for iSeries: User's Guide*. Changes that have been made to this document since it was first released, as well as changes to the PDF mapping program from V5R2 are marked with a revision bar (|) in the left margin. The most current version of this document is available online from this Web page:
http://www.printers.ibm.com/internet/wwsites.nsf/vwwebpublished/ipserveruser_i_ww.
In order to implement the functions described in this document, you must install all of these PTFs:

- SI09449
- SI09470
- SI09471
- SI09473
- SI09474

In this document, the term 'routing tag' refers to the group tag in the data for a file that will be split. If the file is not split, the group tag becomes an 'index tag'.

Restriction: You must have OS/400® V5R2 to use these PTFs. The functions supplied with PTF SI09449 require Infoprint Server for iSeries as well.

Important note: The behavior of the mapping program has changed. You should read the information in "Changes to the PDF Mapping Program" on page 10 before using an existing mapping program.

This document contains these sections to help you understand and use the functionality supplied with these PTFs:

- "Where to Find More Information"
- "How do I Install a PTF?" on page 2
- "Overview of Functions Supplied with these PTFs" on page 2
- "Respooling a Spooled File as AFP" on page 4
- "Specifying Intelligent Routing" on page 6
- "Specifying a PDF Administrator" on page 6
- "Specifying Encryption for Your PDF File" on page 7
- "Setting the Public Authority Level" on page 8
- "Naming and Specifying a Location for Your PDF File" on page 9
- "Changes to the PDF Mapping Program" on page 10
- "PDF Mapping Program Templates" on page 27

Where to Find More Information

There are several sources of information about the iSeries system and Infoprint Server:

- These documents can be found in the iSeries Information Center:
 - Infoprint Server for iSeries: User's Guide*, G544-5775-02
 - Infoprint Server for iSeries: Introduction and Planning Guide*, G544-5774-01
 - iSeries Guide to Output*, S544-5319-05
- Redbooks™ are available from:
<http://publib.boulder.ibm.com/pubs/html/redbooks/>

- *IBM® @server iSeries Printing VI: Delivering the Output of e-business*, SG24-6250
- The iSeries Information Center is your starting point for looking up iSeries technical information.
You can access the Information Center two ways:
 - From this Web site:
<http://www.ibm.com/servers/eserver/iseries/infocenter>
 - From CD-ROMs that ship with your product order:
iSeries Information Center, SK3T-4091-04. This package also includes the PDF versions of iSeries manuals, *iSeries Information Center: Supplemental Manuals*, SK3T-4092-01, which replaces the Softcopy Library CD-ROM.

How do I Install a PTF?

For instructions to install a program temporary fix (PTF), refer to the iSeries Information Center at <http://www.ibm.com/servers/eserver/iseries/infocenter>. From the Information Center go to: Systems management → Software and licensed programs → Use software fixes (or PTFs) → Install fixes.

Overview of Functions Supplied with these PTFs

These PTFs include enhancements to Infoprint Server and PSF. These enhancements increase the spooled file distribution capabilities and improve the Portable Document Format (PDF) output from Infoprint Server's PDF subsystem, as well as increasing PSF's capabilities:

Intelligent routing of Spooled files

Prior to this PTF, you could use the Infoprint Server PDF subsystem to transform a file to PDF then do one of these with the PDF output:

- Spool it to an output queue.
- Store it as a stream file in the integrated file system.
- Send it as e-mail.

Once you install this PTF, you can use *intelligent routing* to distribute the output files. That is, you can do any combination of the above with each output PDF file, along with respooling the input file as AFP™. If the input spooled file contains group tags, you can have the file split at group boundaries and distribute each piece in any combination of the these ways:

- Spool it to an output queue.
- Store it as a stream file in the integrated file system.
- Send it as e-mail.
- Respool it as AFP.

For more information about this function, see "Specifying Intelligent Routing" on page 6.

Specify a PDF administrator

This function lets you specify an administrator's e-mail address to use when transforming spooled files to PDF. If there is a problem with the distribution of the PDF, PSF sends an e-mail with the error information to this address. The PDF file in error is attached to the e-mail.

This is especially beneficial when working with an input spooled file that is split. If one output file cannot be distributed, you can distribute that one file manually. Before, you would have had to reprocess the entire spooled file

and every output file would be redistributed unless you modified the application. For more information, see “Specifying a PDF Administrator” on page 6.

Specify encryption and accessibility for PDF output

With this PTF installed, you can specify encryption, password protection, and other options for the PDF file generated by the Infoprint Server PDF subsystem for e-mail. You can also specify whether to enable accessibility features in the PDF file. If you want to specify encryption, you must have the US encryption (feature number 5722AC3) OS/400 feature installed. This is a free feature in the base operating system. For more information about specifying encryption and accessibility, see “Specifying Encryption for Your PDF File” on page 7.

Specify a name for the PDF output file

Currently, PSF generates a file name like 000001.PDF or 103036_000013_QPDCDVV_07172002_000001.PDF for Infoprint Server's PDF output, depending on how you have Infoprint Server distribute the output. Now you can use this PTF and a mapping program to give your PDF output a meaningful name. See “Naming and Specifying a Location for Your PDF File” on page 9 for more information.

Control PDF file's location

Before this PTF, there was limited control over the actual directory in the integrated file system to which the PDF file was written. Now you now have complete control over the location of each PDF stream file.

Rotate PDF files automatically

When you use Infoprint Server to convert a landscape spooled file to PDF, the pages will automatically be rotated appropriately when you view it.

Smaller PDF files

The PDF files generated when you have this PTF installed are smaller than those generated previously.

2D and Planet bar codes

You can now include planet bar codes and these 2D bar codes in your input to the PDF subsystem:

- Data Matrix
- PDF417
- Maxicode

See “Generating the New Bar Codes for Your Output” on page 9 for more information.

Respool as AFP

This lets you respool a spooled file as Advanced Function Presentation™ (AFP) data after Print Services Facility™ (PSF) processing. You have the option to physically print a spooled file and respool it as AFP or just respool it as AFP without printing.

You can use this option with standard iSeries spooled files. If you have Infoprint Server installed, its PDF subsystem can split a segmented spooled file and use this function to respool a segment as AFP. For more information about this function, see “Respooling a Spooled File as AFP” on page 4.

Respooling a Spooled File as AFP

You might want to respool a spooled file as AFP for use with Fax, for printing on an AFP printer, or for a different use. With these PTFs, you can respool these types of spooled files as AFP:

- SCS
- AFP Data Stream (AFPDS)
- Intelligent Printer Data Stream™ (IPDS™)¹
- USERASCII data (that contains PostScript, PDF, or PCL); this requires Infoprint Server and Infoprint Server's Transform Manager. When Transform Manager is used, the resultant PDF file is an image, not text.
- Line data²
- Mixed data²

Note: The job attributes from the original spooled file are usually carried through to the AFP output. However, Total copies is always 1 in the resulting AFP spooled file.

AFP Respool Command Flow

There are several different ways to control whether the input spooled file is respooled as AFP. Understanding how the command works will help you know how to specify respooling in your environment.

1. A file is spooled to a device that has a PSF configuration object associated with it. The PSF configuration object specifies 'AFPSAVE(*YES)' as a PSF defined option.
2. PSF looks at the spooled file for AFPRESPOOL(*NOPRINT) specified as user defined data. If it is, no further processing is done (including PDF generation). The AFP might be respooled, depending on the outcome of step 3.
3. PSF looks to see if there's a mapping program specified on the PSF configuration object.
 - a. If there is, PSF gets this information from the mapping program:
 - Whether to respool the input spooled file as AFP.
 - To which output queue the AFP file should be spooled. If the queue is not specified on the mapping program, PSF uses the AFP output queue specified on the PSF configuration object. If the AFP output queue is not specified on the PSF configuration object, the writer does not start. If the specified output queue does not exist, the AFP is spooled to QGPL/QPRINT.
 - b. If there is not, PSF looks for AFPRESP00L on the input spooled file's user defined data. If it is there, PSF gets this information from the PSF configuration object:
 - Whether to respool the input spooled file as AFP.
 - To which output queue the AFP file should be spooled. If the AFP output queue is not specified on the PSF configuration object, the writer does not start. If the specified output queue does not exist, the AFP is spooled to QGPL/QPRINT.

1. You cannot respool files produced from a job that uses a printer file specifying IPDS pass through = *YES.

2. In order to respool line or mixed data, you must first convert it to AFPDS. To convert data to AFPDS, use the printer file's Convert line data (CVTLINDTA) parameter or use the Create AFP Data (CRTAFPDTA) command, as appropriate.

To specify that a spooled file is to be respooled as AFP data, do these as necessary:

- (Required) Activate AFP respool on the printer (actual or virtual). To do this, specify 'AFPSAVE(*YES)' as a PSF defined option on the PSF configuration object associated with the printer. This command changes a PSF configuration object named CONFIG1 in MYLIB to activate AFP respool. The AFP output will be saved on the queue AFPQUEUE, which is in the library MYLIB:

```
CHGSPFCFG PSFCFG(MYLIB/CONFIG1) PSFDFNOPT('AFPSAVE(*YES)' 'AFPOUTQ(MYLIB/AFPQUEUE)')
```

- (Required if you are not using a mapping program) Specify AFP respool as User defined data in the spooled file using one of these parameters. This tells PSF whether the file is to be further processed. If you specify *NOPRINT and send the data to a printer, including the PDF subsystem, you might get AFP output and will receive nothing else. See “AFP Respool Command Flow” on page 4 for details:

```
AFPRESPOOL(*PRINT)
AFPRESPOOL(*NOPRINT)
```

For example, assume you have a spooled file MY_FILE that was created by the job MY_JOB which is run under the user profile BOB. To specify that MY_FILE is respooled and printed when sent to a device with respooling activated, use this command:

```
CHGSPLFA FILE(MY_FILE) JOB(BOB/MY_JOB) USRDFNDA('AFPRESPOOL(*PRINT)')
```

Important: You cannot submit a print request that specifies AFPRESPOOL to a writer that does not have AFPSAVE(*YES) and AFPOUTQ(*library/queue*) specified on the PSF configuration object's PSFDFNOPT parameter. If you do submit a print request that specifies AFPRESPOOL to such a writer, your job will be held. To print this job you must remove AFPRESPOOL from the User defined data.

If you do not specify the AFP output queue (AFPOUTQ), the writer does not start. If you specify an output queue that does not exist, the AFP spooled file is spooled to QGPL/QPRINT.

Notes:

1. If IPDS pass through is performed, anything specified for AFPSAVE or AFPRESPOOL is ignored. You specify the value for IPDS pass through on the printer file's IPDSPASTHR parameter. However, if the system discovers that the job will not run successfully with IPDS pass through, the value is disregarded and IPDS pass through is not performed.
2. The AFP file is always given the same name as the original spooled file.
3. Multiple AFP files are saved to the output queue when the original spooled file meets all of these conditions:
 - It is being sent to Infoprint Server's PDF subsystem.
 - The device specifies AFP respooling.
 - It contains group tags and will be split into multiple output files.
 - The mapping program specifies AFP respooling for multiple segments.

Specifying Intelligent Routing

With Infoprint Server, OS/400 5.2, and these PTFs, you can specify intelligent routing. That is, you can send a spooled file to the PDF subsystem and specify that the output be distributed in any combination of these ways:

- spooled to an output queue as AFP or PDF data
- stored as a PDF stream file in the integrated file system
- sent as a PDF file attached to an e-mail

To use intelligent routing requires a mapping program. You can use the mapping program to specify everything you want done with the output files. When you use a mapping program, any values you specify in the PSF configuration object are treated as defaults. For example, assume you specified that you want an output PDF spooled file but did not specify an output queue in the mapping program. Infoprint Server tries to use the PDF output queue specified on the PSF configuration object.

Note: To specify a mapping program, you must specify a value other than *NONE for PDFGEN in the PSF configuration object. However, when you specify a mapping program, the value specified for PDFGEN can be overridden.

If your input spooled file has group tags and you specify PDFMULT(*YES *SPLIT) on the PSF configuration object, by default each generated output file is distributed the same way. For example, if you specified PDFGEN(*MAIL), by default each PDF file is e-mailed. If you do not want them all distributed the same way, use a mapping program to specify how to distribute each generated file. For information about how to do this, see “Changes to the PDF Mapping Program” on page 10. The complete mapping program is documented in *Infoprint Server for iSeries: User's Guide*.

For more information about using the PDF subsystem, including information about setting up your device and PSF configuration object, and descriptions of the PSF configuration object parameters related to the PDF subsystem, refer to *Infoprint Server for iSeries: User's Guide* or the Redbook *IBM @server iSeries Printing VI: Delivering the Output of e-business*.

Specifying a PDF Administrator

When using Infoprint Server's PDF subsystem, you can specify a PDF administrator. The PDF administrator is a user that is notified by e-mail if some of the generated output cannot be distributed properly. For example, a message is sent to the administrator if the file is supposed to be segmented, but no match for the routing tag is found. The PDF file is attached to this e-mail. Errors encountered while generating the PDF are also sent to the message queue.

This option is most useful when generating multiple output files from one spooled file. If there is an error processing one of the output files generated from the spooled file, the file in error is sent to the administrator. The attachment is given the group name from the original spooled file, if one exists. If not, IBM gives it a default name.

For example, assume your printer output file is to be split into 10 PDF files; all 10 are to be e-mailed, and one is also to be stored as a stream file. If the specified directory does not exist when the job is run and there are no other errors, all 10 PDF files are e-mailed, the PDF administrator gets an e-mail with the PDF file that

was supposed to be stored as a stream file, and the spooled file is held. You can then manually store the attached PDF file where you want it instead of reprocessing the spooled file. If you had to reprocess the spooled file, all of the e-mails would be sent again unless you modified the application.

Note: Infoprint Server does not detect errors due to incorrect e-mail addresses with correct syntax. For example, assume you specified patt@ibm.com to send the PDF file to but the correct address is pat@ibm.com. Infoprint Server tries to send the e-mail to patt@ibm.com and does not notify the administrator. If you specify a reply to address on the mapping program, that address is sent a message when the mail is undeliverable. If you do not specify a reply to address, the address from which the mail is sent receives these messages. For information about receiving non-delivery notifications when using SNDDST to send e-mail, refer to *Infoprint Server for iSeries: User's Guide*.

Before you begin:

In order to specify a PDF administrator, you must have your iSeries set up to send e-mail. If the PDF administrator's e-mail address is on an iSeries, that iSeries must also be set up to receive e-mail. For instructions to set up your iSeries to send and receive e-mail, refer to the iSeries Information Center:

<http://www.ibm.com/eserver/iseries/infocenter>. From the Information Center, expand Networking → TCP/IP → E-mail → Configure e-mail.

Specifying the PDF administrator:

Specify the PDF administrator's e-mail address on the PSF configuration object's PSF defined option parameter, where *name@domain* is the PDF administrator's e-mail address. The e-mail address can be at most 20 characters long:

```
PSFDFNOPT('PDFADMIN(name@domain)')
```

Specifying Encryption for Your PDF File

If you generate sensitive documents, convert them to PDF, and e-mail them, you will want to be sure the PDF file is encrypted, password protected, or both. Changes to the mapping program let you specify these PDF standard encryption and accessibility options:

- PDF master password - password required to change security settings
- PDF user password - password required to open the document
- Encryption level - 40 and 128 bit available
- Print options - whether the user can print, and, if 128-bit encryption is specified, what type of output a user can print
- Document change options - whether the user can change the document and what types of changes a user can make
- Copy authority - whether the user can copy or extract text and graphics
- Changing comments - whether the user can add or change annotations
- Document assembly - whether users can move pages and create bookmarks and thumbnails. This option is only available with 128-bit encryption.
- Content accessibility - whether content accessibility is enabled. This option is only available with 128-bit encryption. With 40-bit encryption, accessibility is controlled by Copy authority.

If you want to specify encryption, you must have the US encryption (feature number 5722AC3) OS/400 feature installed. This is a free feature in the base operating system. To determine whether you have this feature installed, enter GO LICPGM then specify option 10, Display installed licensed programs. Look for this line:

```
5722AC3    *INSTALLED    Crypto Access Provider 128-bit for AS/400
```

If it is not installed, enter GO LICPGM then specify option 11, Install licensed programs. Install program number 5722AC3.

Specify encryption options for your PDF file in your mapping program. Use the Length of PDF encryption information and the Offset to PDF encryption information fields in the “Extension Area Format” on page 15 and the “PDF Encryption Format” on page 23.

Setting the Public Authority Level

When you transform a spooled file to PDF and store it in the integrated file system, you can specify the public authority to that PDF file. That is, you can specify the authority you want to give to users that meet all of these 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.

Use the “Extension Area Format” on page 15 in your mapping program to specify the public authority. You can choose one of these authority levels for the PDF file:

***EXCLUDE**

Users do not have any of the data authorities to the object.

***RWX** Users have object operational authority and all the data authorities. This lets them change the object and perform basic functions on it. With this authority level, users can perform all operations on the object except those limited to the owner or controlled by object existence, object management, object alter, and object reference authorities.

***RX** Users can perform basic operations on the object, such as display its contents. The user cannot change the object. This provides object operational authority and read and execute authorities.

***RW** Users can view and change the object. This provides object operational authority and data read, add, update, and delete authorities.

***WX** Users can change the contents of an object and run a program or search a library or directory. This authority level provides object operational authority and data add, update, delete, and execute authorities.

***R** Users can view the contents of the object. This provides object operation and data read authorities.

***W** Users can change the contents of the object. This level of authority provides object operation authority and data add, update, and delete authorities.

***X** Users can run a program or search a library or directory. This level of authority provides object operation and data execute authorities.

Naming and Specifying a Location for Your PDF File

If you do not specify a name for the PDF file, PSF automatically generates a file name like this: 103036_000013_QPDCDVV_07172002_000001.PDF. Also, if you do not specify the path, the PDF file is put in a location like this: */folder-name/job-name/job-number/job-user-name/file-number/spooled-file-name/date/sequence-number/* Now, you can use a mapping program to give your PDF output a meaningful name and store it where you specify.

When sending the PDF file as e-mail, use the **Offset to e-mailed PDF file name** and **Length of e-mailed PDF file name** fields in the “Extension Area Format” on page 15 to name your PDF output file.

When storing the PDF file as a stream file in the integrated file system, use **Offset to PDF path and file name** and **Length of PDF path and file name** to specify a fully-qualified file name. For example, if you specify */home/user/myfile.pdf*, the path and file name override the default path and file name.

When naming your PDF file, you must adhere to the standard OS/400 naming guidelines:

- The name cannot be longer than 256 characters.
- The first character must be one of: 'A'-'Z', '\$', '#', '@'
- All other characters must be in the following group: 'A'-'Z', '0'-'9', '\$', '#', '@', '.', '-', '_'
- The name cannot contain spaces.

Infoprint Server will not add a file extension. If you want one, you must add it yourself. IBM recommends you use a lowercase file name to ensure compatibility with other operating systems.

Generating the New Bar Codes for Your Output

Infoprint Server and Infoprint Designer can now generate Planet bar codes, along with these 2D bar codes:

- Data Matrix
- PDF417
- Maxicode

Planet Bar Code

To generate a planet bar code, use the appropriate ID and modifier on the DDS Postal keyword. Your printer's documentation should contain this information. Refer to the DDS Reference: Printer files topic in the iSeries Information Center for more information.

2D Bar Codes

To generate 2D bar codes using DDS, simply specify the appropriate information on the DDS BARCODE keyword. For information about specifying 2D bar codes with DDS, Refer to the DDS Reference: Printer files topic in the iSeries Information Center.

To generate 2D bar codes in your line data, you might have to change the application that generates the line data. The printer buffer length throughout the

application must be the length of the longest amount of data you want to pass. You might have to increase this length. Pad any fields shorter than the buffer length with blanks.

For example, this is how you would change a line in an RPG program to pass 2,313 bytes of data for a 2D bar code:

Before:

```
0019.00      FRPGSPLINO  F      133      OF      PRINTER      KINFDS DSOUT      000000
```

After:

```
0019.00      FRPGSPLINO  F     2313      OF      PRINTER      KINFDS DSOUT      000000
```

Note: The spooled file might not display properly when you insert long fields.

Changes to the PDF Mapping Program

The format of the mapping program has been changed. These changes let you specify intelligent routing, encryption options, name your PDF file, specify where the PDF file is stored, and more. Only the formats that have changed are documented here. The entire mapping program is documented in *Infoprint Server for iSeries: User's Guide*.

When this PTF is installed, multiple calls might be made to the mapping program for each segment or file that is converted to PDF. For instance, if you have specified to e-mail a segment or file, the mapping program will be called before the file is converted to PDF, to let you specify encryption values for the PDF files. In that call to the mapping program, the “path and name of the PDF file” in the input to the mapping program will be blank. In the final call to the mapping program, after the file or segment has been converted to PDF, “path and name of the PDF file” will be set.

To help you determine what changes you need to make to your mapping program, the changes are summarized below.

Table 1. Summary of PDF Mapping Program Changes

Parameter or Format	Changes	For More Information See
Mapping exit program input information parameter	New fields: Form type	“Mapping Exit Input information” on page 11
Mapping exit program output information parameter	New fields: Disposition of PDF Stream File Disposition of PDF Spooled File Disposition of PDF Error Disposition of AFPDS Spooled File	“Mapping Exit Program Output Information” on page 13

Table 1. Summary of PDF Mapping Program Changes (continued)

Parameter or Format	Changes	For More Information See
Extension area format	New fields: Offset to file name for PDF attachment for e-mail Length of file name for PDF attachment for e-mail Offset to PDF path name Length of PDF path name Offset to PDF file public authority Length of PDF file public authority Offset to spooled file PDF distribution Length of spooled file PDF distribution Offset to spooled file AFP distribution Length of spooled file AFP distribution Offset to PDF encryption information Length of PDF encryption information	“Extension Area Format” on page 15
Spooled file PDF distribution format	New format to use when spooling the PDF output	“Spooled File PDF Distribution Format” on page 21
Spooled file AFPDS distribution format	New format to use when respooling the original spooled file or spooled file segment as an AFP file	“Spooled File AFPDS Distribution Format” on page 22
PDF encryption structure	New format to use when specifying encryption options for the PDF file	“PDF Encryption Format” on page 23

Mapping Exit Input information

Table 2 shows the structure for the mapping exit input information. This structure contains the mapping program information that is input to the mapping program from the PSF print writer. This structure was formerly called “e-mail exit input information”.

Table 2. Mapping Exit Input Information Structure

Decimal Offset	Hex Offset	Type	Description
0	0	CHAR(26)	Qualified job name
26	1A	CHAR(10)	Spooled file name
36	24	BINARY(4)	Spooled file number
40	28	CHAR(250)	Routing tag
290	122	CHAR(340)	Path and name of PDF file
630	276	CHAR(1)	Mail server type
631	26C	CHAR(1)	Reserved
632	26E	BINARY(4)	Path and name CCSID
636	272	CHAR(10)	Mail sender
646	27C	CHAR(10)	User data (USRDTA)
656	290	CHAR(8)	Job system name
664	298	CHAR(8)	Creation time stamp
672	2A0	CHAR(10)	Output queue on which the spooled file is located
682	2AA	CHAR(10)	Output queue library
692	2B4	CHAR(20)	Reserved
712	C8	CHAR(10)	Formtype

A more detailed description of each entry in the table follows in alphabetical order according to Description:

Creation time stamp

Identifies the date and time when the spooled file was created. See the QWCCVTDT API and format *DTS for more information.

Formtype

The value from the FORMTYPE parameter on the spooled file.

Job system name

Identifies the name of the system on which the spooled file was created.

Mail sender

Identifies the sender of the e-mail. This value is specified on the spooled file or printer file USRDFNDDTA parameter or on the PSF configuration object PDFSENDER parameter. If the value is specified in all three places, the value that is specified on spooled file attributes is used. If no mail sender is identified on USRDFNDDTA, the value from the PDFSENDER parameter of the PSF configuration object is used.

Mail server type

Identifies the mail server to use. Values are:

- '1' Use the Send Distribution (SNDDST) command.
- '2' Use the SMTP protocol to send e-mail.

Routing tag

Identifies the mail address or routing tag specified on the spooled file or printer file USRDFNDDTA parameter, or the routing tag in the data. This should be blanks (X'40') if no value was provided by either parameter. If both provide tag or address information, the routing tag takes precedence.

The mapping program can return mail addresses based on job, file, and USRDTA information.

Output queue library

Identifies the library where the above output queue is located.

Output queue on which the spooled file is located

Identifies the output queue to which the writer has been started.

Path and name CCSID

The CCSID of the path and name of the PDF file.

Path and name of the PDF file

Identifies the path and name of the PDF file.

Qualified job name

Identifies the qualified job name of the job that created the spooled file that was converted to PDF. The 26 characters are specified as follows:

CHAR(10)

Job name

CHAR(10)

User name

CHAR(6)

Job number

Spooled file name

Identifies the name of the spooled file that was converted to PDF.

Spooled file number

Identifies the unique number of the spooled file that was converted to PDF.

User data

The value in the printer file USRDTA parameter. This contains blanks if USRDTA contains blanks.

Mapping Exit Program Output Information

Use this structure when you want to use intelligent routing or when you want to respool the input file or a segment of the input file as AFP. Table 3 shows the structure for the output information from the mapping exit program. This structure was formerly called "E-mail output information".

Table 3. Mapping Exit Program Output Information Structure

Decimal Offset	Hex Offset	Type	Description
0	0	CHAR(1)	Disposition of PDF e-mail
1	1	CHAR(1)	More processing
2	2	CHAR(2)	Reserved (set each byte to X'00')
4	4	BINARY(4)	Length of message text
8	8	BINARY(4)	Length of mail address
12	C	CHAR(255)	Message text
267	10B	CHAR(1)	Reserved (set to X'00')
268	10C	BINARY(4)	Offset to extension area
272	110	BINARY(4)	CCSID of message text and subject
276	114	CHAR(1)	Disposition of PDF Stream file
277	115	CHAR(1)	Disposition of PDF Spooled file
278	116	CHAR(1)	Disposition of PDF Error
279	117	CHAR(1)	Disposition of AFPDS Spooled file
280	118	CHAR(7)	Reserved (set each byte to X'00')
287	11F	CHAR(*)	E-mail address

A more detailed description of each entry in the table follows in alphabetical order according to Description:

CCSID of message text and subject

The CCSID associated with the message text and subject, if specified. This CCSID is used to convert the message text and subject to Unicode before they are placed in the e-mail. The e-mail receiver's e-mail program might have to be configured for the appropriate character set in order to view the e-mail correctly.

This field is only used when an SMTP mail server is specified in your PSF configuration object. If you are not using an SMTP mail server, set this field to 0. Valid values are:

0 Use the job's default CCSID.

ccsid-value

Specifies the CCSID. Values are in the range 1-65533.

Disposition of AFPDS spooled file

Specifies whether the input to the PDF subsystem should be respooled as AFP data. If a file is to be spooled as AFP, you must specify an output queue. You can specify it on the PSF configuration object or in the “Spooled File AFPDS Distribution Format” on page 22 on the **Output queue name** field. Valid values are:

- ‘0’** Do not respool the file as AFP.
- ‘1’** Respool the file as AFP.

Disposition of PDF error

This field can be used to signal to PSF that an error was detected in the mapping program. When this flag is set and PSF encounters an error, it sends the PDF output to the PDF administrator. Valid values are:

- ‘0’** Do not send the PDF output to the PDF administrator if an error is encountered.
- ‘1’** Send the PDF output to the PDF administrator if an error is encountered when distributing the PDF. The PDF administrator’s e-mail address is specified on the PSF configuration object as a PSF defined option. See “Specifying a PDF Administrator” on page 6 for information. If there is no PDF administrator specified, this value is ignored.

Disposition of PDF e-mail

Specifies whether to e-mail the PDF file. This was previously named **Disposition of PDF file**. Valid values are:

- ‘0’** Do not e-mail the PDF file
- ‘1’** E-mail the PDF file to specified addresses.

Disposition of PDF spooled file

Specifies whether to spool the PDF file. Valid values are:

- ‘0’** Do not spool the PDF file.
- ‘1’** Spool the PDF file to an output queue. You must also specify an output queue. Specify it on the PSF configuration object’s PDF output queue (PDFOUTQ) parameter or with the “Spooled File PDF Distribution Format” on page 21 in the **Output queue name** field.

Disposition of PDF stream file

Specifies whether the PDF should be stored as a stream file in the integrated file system. Valid values are:

- ‘0’** Do not store the PDF as a stream file.
- ‘1’** Store the PDF as a stream file. You must also specify the path in which to store the file. You can specify it on the PSF configuration object PDF directory (PDFDIR) parameter. Alternatively, you can specify the path and file name using the **Offset to PDF path name** and **Length of PDF path name** fields of the “Extension Area Format” on page 15. If you want to specify the path on the PSF configuration object, set **Offset to PDF path name** and **Length of PDF path name** to 0.

E-mail addresses

The e-mail addresses (in the form *name@domain*) to which the PDF file is sent. They must be delimited by single quotation marks, for example, ('name1@domain1' 'name2@domain2')

Length of e-mail address

The length of the e-mail address data to send the PDF file to. The maximum

length allowed is 16MB because this is the largest value that can be used to allocate a user space. If the PDF file should not be e-mailed, set the length of the e-mail address data to zero. The initial amount of space that is allowed for e-mail addresses is 49 bytes. If you need more space than that, use the mapping program to extend the size. *Infoprint Server for iSeries: User's Guide* gives an example of this situation.

Length of message text

The length of the message text to be used in the body of the e-mail. Values can be in the range 0-255. If no message text is to be used when sending the PDF file, set the length of the message text data to zero.

Message text

The message text data to be used in the body of the e-mail when sending the PDF file. This value should be blanks if the text length is zero.

You can specify message text and files for the body of the e-mail. If you do not specify message text or a file to be used for the body of the e-mail, the default text is used. The default text is obtained from message PQT4133 in message file QPQMSGF.

PSF skips a line after the message text. Two end-of-line characters are written after your data. Any files specified for inclusion in the body of the e-mail are positioned at this point.

If you specify an SMTP mail server, the message text and subject's CCSID is used to convert the data to Unicode before adding it to the e-mail. The e-mail receiver's e-mail program might have to be configured for the appropriate character set in order to view the e-mail correctly.

More processing

Specifies whether the mapping program should be called again to do more processing for the same spooled file.

'0' (X'F0')

Do not call the mapping program again. This field occupies the offset of a field that was reserved in Infoprint Server 5.1. Therefore, X'00' is treated the same as 0 (X'F0') for compatibility.

'1' (X'F1')

Call the mapping program again. The input information presented to the mapping program is not modified. If an error occurs while processing an e-mail, the spooled file is held and the mapping program is not called again, regardless of this field.

Offset to extension area

Offset from the beginning of this structure. The value must be a 4-byte multiple. A value of 0 indicates that the extension area is not being used. See "Extension Area Format" for details about the extension area.

Extension Area Format

Use this format when you want to specify encryption for the output PDF file, name the PDF output file, or use intelligent routing. If your application has no need for it, specify a value of 0 for Offset to extension area in the e-mail exit program output information.

This format must begin on a 4-byte multiple. All offsets are computed from the beginning of the PDF Mapping Program Output Information structure.

Table 4. Extension Area Format

Decimal Offset	Hex Offset	Type	Description
0	0	BINARY(4)	Length of Extension area format
4	4	BINARY(4)	Offset to subject
8	8	BINARY(4)	Length of subject
12	C	BINARY(4)	Offset to ReplyTo e-mail address
16	10	BINARY(4)	Length of ReplyTo e-mail address
20	14	BINARY(4)	Offset to CC e-mail address
24	18	BINARY(4)	Length of CC e-mail address
28	1C	BINARY(4)	Offset to BCC e-mail address
32	20	BINARY(4)	Length of BCC e-mail address
36	24	BINARY(4)	Offset to list of path names for body of e-mail
40	28	BINARY(4)	Offset to path name for directory for files
44	2C	BINARY(4)	Length of path name for directory for files
48	30	BINARY(4)	Offset to list of path names of attachments
52	34	BINARY(4)	Offset to PDF stream file path and file name
56	38	BINARY(4)	Length of PDF stream file path and file name
60	3C	BINARY(4)	Offset to file name for e-mailed PDF attachment
64	40	BINARY(4)	Length of file name for e-mailed PDF attachment
68	44	BINARY(4)	Offset to PDF file public authority
72	48	BINARY(4)	Length of PDF file public authority
76	4C	BINARY(4)	Offset to spooled file PDF distribution
80	50	BINARY(4)	Length of spooled file PDF distribution
84	54	BINARY(4)	Offset to spooled file AFP distribution
88	58	BINARY(4)	Length of spooled file AFP distribution
92	5C	BINARY(4)	Offset to PDF encryption information
96	60	BINARY(4)	Length of PDF encryption information

A more detailed description of each entry in the table follows in alphabetical order according to Description:

Length of BCC e-mail address

Specifies the length of the BCC e-mail address to send the e-mail to. This field is only used when an SMTP mail server is specified in your PSF configuration object. If an SMTP mail server is not specified, set this field to 0.

Length of CC e-mail address

Specifies the length of the CC e-mail address to send the e-mail to. This field is only used when an SMTP mail server is specified in your PSF configuration object. If an SMTP mail server is not specified, set this field to 0.

Length of Extension area format

Specifies the length of the Extension area format. This value must be set to 100 in order to use any of the new functions.

Length of file name for e-mailed PDF attachment

Length of the file name used for the PDF attachment for e-mail distribution. This field is only used when Disposition for PDF e-mail is set to '1'; otherwise, set this length to zero.

Length of path name for directory for files

Specifies the length of the path name containing the directory in which files to attach to the e-mail can be stored. This field is only used when an SMTP mail server is specified in your PSF configuration object. If an SMTP mail server is not specified, set this field to 0.

Length of PDF encryption information

The length of the PDF file encryption information. This field is only used when e-mailing with an SMTP mail server. If an SMTP mail server is not specified on your PSF configuration object, set this field to 0.

Length of PDF file public authority

The length of public authority to the PDF file. This field is used only when the PDF file is to be stored as a stream file. That is, when **Disposition of PDF stream file** in "Mapping Exit Program Output Information" on page 13 is set to '1'. If the PDF file is not being stored as a stream file, set this field to 0.

Length of PDF stream file path and file name

The length of the path and file name to use to store the PDF stream file. This field is used only when the PDF file is to be stored as a stream file. That is, when **Disposition of PDF stream file** in "Mapping Exit Program Output Information" on page 13 is set to '1'. If the PDF file is not being stored as a stream file, set this field to 0.

Length of spooled file AFP distribution

The length of the AFP spooled file distribution information. This field is used only when you specify additional spooled file information in "Spooled File AFPDS Distribution Format" on page 22; otherwise, it must be set to zero.

Length of spooled file PDF distribution

The length of the PDF spooled file distribution information. This field is used only when you specify additional spooled file information in "Spooled File PDF Distribution Format" on page 21; otherwise, it must be set to zero.

Length of ReplyTo e-mail address

Specifies the length of the reply to e-mail address. If you specify this address, it is sent any non-delivery messages for incorrect e-mail addresses. This field is only used when an SMTP mail server is specified in your PSF configuration object. If an SMTP mail server is not specified, set this field to 0.

Length of subject

Specifies the length of the character string to be used as the subject text. The maximum length is 256. Data exceeding the maximum length is truncated. If there is no subject, set this field to 0. If you do not specify subject text, default text is used.

Offset to BCC e-mail address

Specifies the offset to the BCC e-mail addresses. This area contains the BCC e-mail addresses to which the PDF file is sent. The addresses must be delimited by single quotation marks. For example, ('name1@domain1' 'name2@domain2') Specify 0 if you do not want the e-mail sent to any BCC addresses.

Offset to CC e-mail address

Specifies the offset to the CC e-mail addresses. This area contains the CC e-mail addresses to which the PDF file is sent. The addresses must be delimited by single quotation marks. For example, ('name1@domain1' 'name2@domain2') Specify 0 if you do not want the e-mail sent to any CC addresses.

Offset to file name for e-mailed PDF attachment

The length of the name of the PDF file to e-mail. If you are not specifying a PDF file name or are not e-mailing the PDF file, set this field to 0.

Offset to list of path names for body of e-mail

Specifies the offset to the list of path names for the files to include in the body of the e-mail. You can specify one or more files to include, but the files must be in the integrated file system. If you include the PDF file you are sending in this list, it is attached again. This field is only used when an SMTP mail server is specified in your PSF configuration object. If an SMTP mail server is not specified, set this field to 0.

The CCSID of the file is used if a code page conversion is required. Refer to *Infoprint Server for iSeries: User's Guide* for information about the format to use when specifying this data.

Notes:

1. The order in which you list these files is the order in which they are included in the e-mail. These files are included after the message text, if specified.
2. You must specify a thread-safe file system. PSF can only access thread-safe file systems. These file systems are not thread-safe:
 - QNetware
 - QFileSvr.400
 - Network File System (NFS)
 - QDLS
3. All files must be encoded in a CCSID that matches the CCSID of the target system. For example, if you are using a file that contains the Euro symbol in CCSID 923, ensure that the receiving system uses CCSID 923.
4. If a file is not text (file type .txt) or HTML (file type .htm or .html), it is included as an attachment to the e-mail. For example, if you specify a sound file to be part of the e-mail body, it is attached to the e-mail instead.
5. If this file is to be used with the **Path name for directory for files**, the file name is appended to the **Path name for directory for files**. Do not use a "/" as the first character when specifying the file name. However, the file can be nested within another directory, for example, mySubDirectory/myFile.txt.
6. If this file is not to be used with the **Path name for directory for files**, the file name must be fully-qualified, beginning with a "/".

Offset to list of path names of attachments

Specifies the offset to the list of path names for the files to attach to the e-mail. You can specify one or more files to attach, but the files must be in the integrated file system. Do not include the original PDF file in this list unless you want the file to be attached twice. Specify 0 if you do not want any files (other than the original PDF file) attached. This field is only used when an SMTP mail server is specified in your PSF configuration object. If an SMTP mail server is not specified, set this field to 0.

If you specified a directory to be used for files (see **Offset to path name for directory for files**), the path name specified for this field is appended to that directory. When you specify a '1' for the file in **Use specified directory** parameter in the Individual Stream File Information format. If you did not specify a directory to be used for files, the path name specified for each attachment must be fully resolved.

Refer to *Infoprint Server for iSeries: User's Guide* for information about the format to use when specifying this data.

Notes:

1. You must specify a thread-safe file system. PSF can only access thread-safe file systems. These file systems are not thread-safe:
 - QNetware
 - QFileSvr.400
 - Network File System (NFS)
 - QDLS
2. If the attachments are to be viewed by the receiver, make sure that they are in a CCSID that matches the CCSID of the target system. For example, if you are using a file that contains the Euro symbol in CCSID 923, ensure that the receiving system uses CCSID 923. Files encoded in EBCDIC are not viewable.
3. If this file is to be used with the **Path name for directory for files**, the file name is appended to that path. Do not use a "/" as the first character when specifying the file name. However, the file are nested within another directory, for example, mySubDirectory/myFile.txt.
4. If this file is not to be used with the **Path name for directory for files**, the file name must be fully-qualified, beginning with a "/".

Offset to path name for directory for files

Specifies the offset to a path name containing the directory in which files to attach to the e-mail can be stored. This path name must be fully resolved, but if the path name does not end with a "/", PSF adds that character. If you use this field, path names specified with **Offset to list of path names for body of e-mail** and **Offset to list of path names of attachments** are appended to the path specified at the offset for this field. The path names of files must not begin with a "/". However, they can be nested within another directory, for example, mySubDirectory/myFile.txt.

This field is only used when an SMTP mail server is specified in your PSF configuration object. If an SMTP mail server is not specified, set this field to 0. A value of 0 indicates that no path name is specified. If you specify 0, you must specify the complete path name for all files used in the body of the e-mail and as attachments.

To use this directory, specify 1 in the field **Use specified directory** in the Individual Stream File Information format. This format is used when specifying files to be used as attachments or as part of the e-mail body. If you specify 0 for **Use specified directory**, that particular file must have a fully-specified path.

Offset to PDF encryption information

The offset to the PDF file encryption information. See "PDF Encryption Format" on page 23 for the format to use when specifying this information.

Offset to file name for e-mailed PDF attachment

The offset to the name of the PDF file to e-mail. Do not use this field to specify the file's location, only the name and, optionally, extension, for example,

myfile.pdf. IBM recommends using a lower-case extension for compatibility with other operating systems. If you want PSF to give the PDF file the default name, specify 0.

Offset to PDF file public authority

The offset to the public authorities specified for the PDF file when stored as a stream file in the integrated file system. These are the valid values for the public authority:

***EXCLUDE**

Users do not have any of the data authorities to the object.

***RWX** Users have object operational authority and all the data authorities. This lets them change the object and perform basic functions on it. With this authority level, users can perform all operations on the object except those limited to the owner or controlled by object existence, object management, object alter, and object reference authorities.

***RX** Users can perform basic operations on the object, such as display its contents. The user cannot change the object. This provides object operational authority and read and execute authorities.

***RW** Users can view and change the object. This provides object operational authority and data read, add, update, and delete authorities.

***WX** Users can change the contents of an object and run a program or search a library or directory. This authority level provides object operational authority and data add, update, delete, and execute authorities.

***R** Users can view the contents of the object. This provides object operation and data read authorities.

***W** Users can change the contents of the object. This level of authority provides object operation authority and data add, update, and delete authorities.

***X** Users can run a program or search a library or directory. This level of authority provides object operation and data execute authorities.

Offset to PDF stream file path and file name

The offset to the path and file name to use to store the PDF stream file in the integrated file system. For example, '/home/user/myfile.pdf'. If you want a file extension, you must specify it. IBM recommends using a lower-case extension for compatibility with other operating systems. To have PSF give the PDF file the default name, specify 0.

Offset to spooled file AFP distribution

The offset to the AFP spooled file information. See "Spooled File AFPDS Distribution Format" on page 22 for the format to use when specifying this information. If you are not specifying AFP spooled file information, specify 0.

Offset to spooled file PDF distribution

The offset to the PDF spooled file information. See "Spooled File PDF Distribution Format" on page 21 for the format to use when specifying this information. If you are not specifying PDF spooled file information, specify 0.

Offset to ReplyTo e-mail address

Specifies the offset to the reply to e-mail address. Use this address to specify where replies to your e-mail are sent. This can be a different e-mail address than is specified for the PDFSENDER address on the PSF configuration object.

If used, this address is sent any non-delivery messages for incorrect e-mail addresses. The address must be in this form: 'name@domain'.

A value of 0 indicates that no reply to address is specified. This field is only used when an SMTP mail server is specified in your PSF configuration object. If an SMTP mail server is not specified, set this field to 0.

Offset to subject

Offset to the character string to be used as the subject text. A value of 0 indicates that a subject is not specified here. If you do not specify a subject in this structure, then the default subject is used. The default subject is obtained from the first 22 characters of message PQT4133 in message file QPQMSGF plus the original spooled file's name.

Spooled File PDF Distribution Format

Use this format when you want to spool the PDF output and also e-mail it or store it in the integrated file system. If you just want to spool the PDF file to an output queue, you do not need to use this format. Specify PDFGEN(*SPLF) on the PSF configuration object.

Table 5. Spooled File PDF Distribution Format

Decimal Offset	Hex Offset	Type	Description
0	0	CHAR(10)	Name of output queue on which to spool PDF
10	A	CHAR(10)	Output queue library
20	14	CHAR(10)	Spooled file name
30	1E	CHAR(10)	User data
40	28	CHAR(255)	User defined data
295	127	CHAR(10)	Form type

A more detailed description of each entry in the table follows, in alphabetical order according to description:

Form type

The form type to be used for the PDF spooled file. Valid values are:

***SPLF** Use the form type of the original spooled file.

Form-type

Specify the form type.

Name of output queue on which to spool PDF

The name of the output queue on which the PDF will be spooled. Valid values are:

***PSFCFG** Use values specified on the PSF configuration object's PDF output queue (PDFOUTQ) parameter for the output queue and library.

Output-queue Specify the output queue on which to spool the PDF file. You must also specify the output queue library.

Output queue library

The library in which the output queue to spool PDF exists. If you specified ***PSFCFG** for **Name of output queue on which to spool PDF**, anything you specify for this field is ignored.

User data

The user data for the PDF spooled file. The possible values are:

***SPLF** Use the user data of the original spooled file.

User-data

Specify the user data.

Spooled file name

The name used for the new PDF spooled file. The possible values are:

***SPLF** Use the original spooled file's name.

spooled-file-name

Specify a name for the PDF spooled file.

User defined data

The user defined data for the PDF spooled file. The possible values are:

***SPLF**

Use the user defined data of the original spooled file.

User-defined-data

Specify the user defined data.

Spooled File AFPDS Distribution Format

Use this format when you want to respool the input to the PDF subsystem as an AFP file. When your input spooled file is to be split, you can use this format to specify that one or more files created is respooled as AFP. In order for the entire input spooled file to be respooled as AFP, respooling must be activated in the PSF configuration object and specified in the spooled file. If you only want to respool a segment of the file, activate respooling in the PSF configuration object but do not activate respooling in the spooled file. For information about activating the respool capability, see "Respooling a Spooled File as AFP" on page 4.

Table 6. Spooled File AFPDS Distribution Format

Decimal Offset	Hex Offset	Type	Description
0	0	CHAR(10)	Name of output queue on which to spool AFP
10	A	CHAR(10)	Output queue library
20	14	CHAR(10)	Spooled file name
30	1E	CHAR(10)	User data
4028	11D	CHAR(255)	User defined data
295	127	CHAR(10)	Form type

A more detailed description of each entry in the table follows, in alphabetical order according to description:

Form type

The form type to be used for the AFP spooled file. Valid values are:

***SPLF** Use the form type of the original spooled file.

Form-type

Specify the form type.

Name of output queue on which to spool AFP

The name of the output queue on which the AFP will be spooled. Valid values are:

***PSFCFG**

Use values specified on the PSF configuration object's AFP output queue (AFPOUTQ) parameter for the output queue and library.

Output-queue

Specify the output queue on which to spool the AFP file. You must also specify the output queue library.

Output queue library

The library in which the output queue to spool the AFP exists. If you specified *PSFCFG for the **Name of output queue on which to spool AFP** field, anything you specify for this field is ignored.

User data

The user data for the AFP spooled file. The possible values are:

***SPLF** Use the user data from the original spooled file.

User-data

Specify the user data.

Spooled file name

The name used for the new AFP spooled file. The possible values are:

***SPLF** Use the original spooled file's name.

spooled-file-name

Specify a name for the AFP spooled file.

User defined data

The user defined data for the AFP spooled file. The possible values are:

***SPLF**

Use the user defined data from the original spooled file.

User-defined-data

Specify the user defined data.

PDF Encryption Format

Use this format to specify security options for the e-mailed PDF output. If you want to specify encryption, you must have the US encryption (feature number 5722AC3) OS/400 feature installed. This is a free feature in the base operating system. For more information about this feature, see "Specifying Encryption for Your PDF File" on page 7.

Table 7. Spooled File PDF Encryption Format

Decimal Offset	Hex Offset	Type	Description
0	0	CHAR(32)	PDF master password
32	20	CHAR(32)	PDF user password
64	40	CHAR(1)	PDF print
65	41	CHAR(1)	PDF document change
66	42	CHAR(1)	PDF copy
67	43	CHAR(1)	PDF encryption level
68	44	CHAR(1)	PDF content access enablement
69	45	CHAR(1)	PDF change comments
70	46	CHAR(1)	PDF document assembly

A more detailed description of each entry in the table follows, in alphabetical order according to description:

PDF change comments

Specifies whether users can add or change comments (annotations) or form fields in the PDF file. Valid values are:

- '0'** Users cannot add or change comments or form fields in the PDF file. Users can fill in form fields.
- '1'** Users can add or change comments and form fields in the PDF file.

PDF content access enablement

Specify the PDF viewer's encryption settings for content access for the visually impaired to the PDF document. This is only configurable with 128-bit encryption. For 40-bit encryption, set this field to '0'. Content access is always disabled if you specify both of these:

PDF encryption level = '1' (40-bit)
PDF copy = '0' (Copy is not allowed)

Valid values are:

- '0'** Content access is not enabled.
- '1'** Content access is enabled.

PDF copy

Specify the PDF viewer's security settings for copying from the PDF document. Content access is disabled if you specify both of these:

PDF copy = '0' (Copy is not allowed)
PDF encryption level = '1' (40-bit)

Valid values are:

- '0'** Copy is not allowed.
- '1'** Copy is allowed.

PDF document assembly

Specify the PDF viewer's security settings for document assembly from the PDF document. This is only configurable with 128-bit encryption. For 40-bit encryption, set this field to '0'.

- '0'** Document assembly is not allowed.
- '1'** The user is allowed document assembly. The user can insert, delete, and rotate pages, and create bookmarks and thumbnails. You can only specify this value if you also specify 128-bit encryption and PDF document change = '1' (yes).

PDF document change

Specify the PDF viewer's security settings for changing the PDF document.

- '0'** Change is not allowed. Users cannot create form fields or make any other changes. You cannot specify PDF document assembly = '1' (yes) if you specify that change is not allowed.
- '1'** The user can change the document.

PDF encryption level

Specify the encryption level the PDF document using the PDF viewer's encryption settings. If you do not want the file encrypted, specify '0' for offset to encryption information. Valid values are:

'1' 40-bit encryption (Adobe Acrobat 3.X and higher) Content access is always disabled if you specify both of these:

PDF encryption level = '1' (40-bit)
PDF copy = '0' (Copy is not allowed)

'2' 128-bit encryption (Adobe Acrobat 5.0)

PDF master password

Specify the PDF master password required to change the security settings for the PDF file. When password-protected, the PDF file can be opened with either the user password or master password. When a file is opened with a user password, the security restrictions in the PDF file are temporarily disabled.

If you set any security restrictions in your file, you should specify a master password and a user password; otherwise anyone who opens the file could remove the restrictions. Valid values are:

X'00' There is no PDF master password on this document.

password

A string of up to 32 alphanumeric characters. Only use these characters: 'A'-'Z', 'a'-'z', '0'-'9'.

PDF print

Specify the PDF viewer's security settings for printing the PDF document.

'1' Printing is allowed.

'2' Users are not allowed to print the document.

'3' Only low resolution printing is allowed. You can only specify this value if you also specify 128-bit encryption.

PDF user password

Specify the password required for the user to open the PDF file. When password-protected, the PDF file can be opened with either the user password or master password. When a file is opened with a user password, the security restrictions in the PDF file are temporarily disabled.

If you set any security restrictions in the file, you should specify both a master password and a user password. Otherwise, anyone who opens the file could remove the restrictions. You can specify these values:

X'00' There is no user password on this document.

password

A string of up to 32 alphanumeric characters. Only use these characters: 'A'-'Z', 'a'-'z', '0'-'9'.

Troubleshooting

This section describes some common error situations and how to solve the problem.

Error Message	Symptom	Possible Cause	Possible Solution
PRINT REQUEST WILL NOT BE RESPOOLED.	When trying to print a respooled AFP print job, the job is held	Your print job requests that AFP Respooling occur, but the writer does not support that function.	If you want to print the job, remove the respool request from the print request. If you want AFP respooling done, activate it on the writer. To activate AFP respooling, specify 'AFPSAVE(*YES)' and 'AFPOUTQ(mylib/afpqueue)' as PSF defined options on the PSF configuration object associated with the writer.
		You are trying to respool a print job as AFP, but the incoming data is not AFPDS. If the original data stream type was not AFPDS, it must be converted to AFPDS before respooling can occur.	Only print jobs that are converted to AFPDS can be respooled as AFP. If the print request specifies IPDS pass through, remove IPDS pass through from the printer file.
PRINTER WRITER &1 ENDED BECAUSE OF AN ERROR.	When trying to send a job to a writer that specifies intelligent routing, the writer does not start.	This error is caused by having an incorrect value for the PSF defined option specified in the PSF configuration object associated with the writer.	The PSF defined option in error is listed in the error message. Correct the error and resubmit the job.

PDF Mapping Program Error Codes

There are new error codes for this PDF mapping program error message.

Message: Incorrect data was returned by email mapping program (*library/name*).

Explanation: The email mapping program specified for device *device* returned incorrect data. The reason code is *reason code*. See the reason codes listed below to determine where the error was detected.

- 1 Disposition of PDF file
- 2 Re-calling mapping program
- 3 Reserved field
- 4 Message length or message data
- 5 Email address or email address length
- 6 CCSID
- 7 Extension area
- 8 Subject or subject length
- 9 Values are not valid with SNDDST
- 10 BCC offset or BCC length
- 11 CC offset or CC length
- 12 REPLYTO offset or REPLYTO length
- 13 Total path length specified is too large

- 14 Use of path directory specified, but no path directory was entered
- 15 Error field
- 16 AFP respool
- 17 Public authorization
- 18 STMF value
- 19 SPLF value
- 20 Mapping program specified error
- 21 Encryption values

User response: Correct the values being passed from the email mapping program and retry the job. The file will be held and processing will continue with the next ready file.

PDF Mapping Program Templates

These are templates for a mapping program. They are illustrations intended to explain how to use a mapping program. Before using these programs, you must customize them for your environment. These templates use the new functions available with this PTF.

PDF Mapping Program Template in C

```

/*-----*/
/*---                                          ---*/
/*--- Program Name: ipstagpgm                ---*/
/*---                                          ---*/
/*--- Program Description: This is the template for a mapping program. ---*/
/*---                                          ---*/
/*---                                          ---*/
/*--- Invocation: See calling convention below. ---*/
/*---                                          ---*/
/*---                                          ---*/
/*---                                          ---*/
/*-----*/
/*-----*/
/*---                                          ---*/
/*--- Calling convention:                    ---*/
/*--- Pointer to E-mail exit input information. (char *, defined by Qpq_email_Exit_I_t ---*/
/*---                                          in epqmapxt.h) ---*/
/*--- Pointer to length of input information. (int *) ---*/
/*--- Pointer to E-mail exit output information. (char *, defined by Qpq_Email_Exit_O_t ---*/
/*---                                          in epqmapxt.h) ---*/
/*---                                          ---*/
/*--- Pointer to length of output information buffer (int *) ---*/
/*--- Pointer to length of output information available (int *) ---*/
/*---                                          ---*/
/*-----*/
/*-----*/
/*--- Includes                               ---*/
/*-----*/
#include stdio.h
#include string.h
#include ctype.h
#include stdlib.h
#include epqmapxt.h
/*-----*/
/*--- Defines                               ---*/
/*-----*/
#define MAIL_ADDR_DATA_LENGTH 8096      /* Can be defined as needed*/

```

```

/*-----*/
/*---      Structures      ---*/
/*-----*/
typedef struct output {
    Qpq_Email_Exit_O_t exitOutputInfo;
    char emailAddrData[MAIL_ADDR_DATA_LENGTH];
} exitOutput ;
int main (argc, argv)
    int argc;
    char *argv[];
{
    exitOutput *output;
    Qpq_Email_Exit_I_t *inputInfo;
    /*-----*/
    /*--- The following effectively makes the char[] fields preceding these two ---*/
    /*--- fields in the structure able to be treated as null terminated strings. ---*/
    /*-----*/
    output = (exitOutput *)argv[3];
    for (int i = 0; i < 2; i++) output->exitOutputInfo.Reserved1[i] = '\0';
    output->exitOutputInfo.Reserved2[0] = '\0';
    for ( i = 0; i < 11; i++) output->exitOutputInfo.Reserved3[i] = '\0';
    inputInfo = (Qpq_Email_Exit_I_t *) argv[1];
    /*-----*/
    /*--- Here is where the Mail Tag is read and resolved to e-mail addresses, ---*/
    /*--- PDF Disposition, and message text data. Here is an example matching a tag ---*/
    /*--- called TAG001 with a user at e-mail address 'ibmuser@us.ibm.com'. It sets ---*/
    /*--- the disposition to 1 and sends a message. The message text data appears ---*/
    /*--- as the body of the e-mail and the PDF file is sent as an attachment. If ---*/
    /*--- no message text data specified, default text is used. ---*/
    /*-----*/
    if(strstr( inputInfo->Mail_Tag,"TAG001") != NULL)
    {
        strcpy(output->Email_addresses," 'ibmuser@us.ibm.com' ");
        strcpy( output->Message_text_data,"This is a test message from IBMUSER");
        output->PDF_File_Disposition[0] = '1';
        len = strlen( output->Email_addresses);
        output->Mail_address_data_length = 100;
        output->Call_Exit_Program_Again[0] = '0';
    }
} /* end main */

```

PDF Mapping Program Template in RPG

```

D INPUTDS          DS
D  JOBNAM           1      26
D  SPLFID           27     36
D  SPLNO            37     40B 0
D  MAILTAG          41     290
D  PDFFILE          291    630
D  SVRTYPE          631    631
D  RES1             632    632
B D  PATHCCSID      633    636B 0
D  SENDER           637    646
D  USRDTA           647    656
D  SYSNAME          657    664
D  TIMESTMP         665    672
D  OUTQ             673    682
D  OUTQLIB          683    692
D  MAPOBJ           693    702
D  MAPOLIB          703    712
D  FORMTYPE         713    722
D*****
D OUTDS            DS
D  MAILDISP         1      1
D  CALLAGIN         2      2
D  RES2             3      4
D  MSGLEN           5      8B 0
D  ADDRLEN          9     12B 0
D  MSGTEXT          13     267

```


D RES3	268	268
D EXTOFF	269	272B 0
D CCSID	273	276B 0
D STMFDISP	277	277
D SPLFDISP	278	278
D ERR	279	279
D RES4	280	287
D ADDRESS	288	543
D* EXTENSION AREA		
D EXTLEN	544	547B 0
D SUBOFF	548	551B 0
D SUBLEN	552	555B 0
D RPLYOFF	556	559B 0
D RPLYLEN	560	563B 0
D CCOFF	564	567B 0
D CCLEN	568	571B 0
D BCCOFF	572	575B 0
D BCCLLEN	576	579B 0
D BDYPTHOFF	580	583B 0
D DIRPTHOFF	584	587B 0
D DIRPTHLEN	588	591B 0
D ATTPTHOFF	592	595B 0
D* NEW FOR V5R3		
D NEWPTHOFF	596	599B 0
D NEWPTHLEN	600	603B 0
D NEWOBJOFF	604	607B 0
D NEWOBJLEN	608	611B 0
D PUBAUTOFF	612	615B 0
D PUBAUTLEN	616	619B 0
D PDFQOFF	620	623B 0
D PDFQLEN	624	627B 0
D AFPQOFF	628	631B 0
D AFPQLEN	632	635B 0
D ENCRYPTOFF	636	639B 0
D ENCRYPTLEN	640	643B 0
D* DATA FOR EXTENSION		
D EXTSUBJ	644	653
D EXTRPLY	654	678
D EXTBCC	679	703
D EXTCC	704	728
D BDYLEN	729	732B 0
D BDYNUMB	733	736B 0
D BDYX1	737	740B 0
D BDYY1	741	744B 0
D BDYOFF1	745	748B 0
D BDYPLEN1	749	752B 0
D BDYUSE1	753	753
D BDYRES1	754	756 0
D BDYPTH1	757	772
D BDYX2	773	776B 0
D BDYY2	777	780B 0
D BDYOFF2	781	784B 0
D BDYPLEN2	785	788B 0
D BDYUSE2	789	789
D BDYRES2	790	792 0
D BDYPTH2	793	808
D BDYX3	809	812B 0
D BDYY3	813	816B 0
D BDYOFF3	817	820B 0
D BDYPLEN3	821	824B 0
D BDYUSE3	825	825
D BDYRES3	826	828 0
D BDYPTH3	829	844
D DIRPTH	845	849
D NEWPTH	850	884
D NEWOBJ	885	909
D PUBAUT	910	934

```

D PDFQ          935  1239
D AFPQ          1240 1241
D ENCRYPT        1242 1312
D*
D INPUTLEN      DS      4
D OUTPUTLEN     DS      4
D OUTINFO       DS      4
D*****
C   *ENTRY      PLIST
C               PARM          INPUTDS
C               PARM          INPUTLEN
C               PARM          OUTDS
C               PARM          OUTPUTLEN
C               PARM          OUTINFO
C
C* Check whether there is enough buffer space for all of the data. Initially,
C* the buffer size is set to X'00000151'. If you are using all of the values,
C* you need the buffer size to be X'00000520'.
C               EVAL          OUTINFO = X'00000520'
C* If the space IBM passed to the exit pgm isn't as large as what is needed,
C* get out of the exit program and return the needed value to IBM program.
C* Otherwise, if there is enough space, set values to be returned.
C   OUTINFO     IFLE          OUTPUTLEN
C               CLEAR          OUTDS
C* If mailtag is TAG001, then use the following data for email
C   MAILTAG     IFEQ          'TAG001'
C               EVAL          ADDRESS = '''joeibmer@us.ibm.com'''
C* Mail the file
C               EVAL          MAILDISP = '1'
C* Dont call this pgm again for this file
C               EVAL          CALLAGIN = '0'
C               EVAL          RES2     = X'0000'
C* Set up message
C               EVAL          MSGLEN   = 255
C               EVAL          ADDRLEN  = 256
C               EVAL          MSGTEXT  = 'did you get this?'
C               EVAL          RES3     = X'00'
C               EVAL          EXTOFF   = 543
C               EVAL          CCSID    = 0
C               EVAL          RES4     = X'000000000000000000000000'
C               EVAL          EXTLEN   = 100
C* Set up subject
C               EVAL          SUBOFF   = 643
C               EVAL          SUBLEN   = 10
C               EVAL          EXTSUBJ  = 'TESTING123'
C* Set up reply to addresses
C               EVAL          RPLYOFF  = 652
C               EVAL          RPLYLEN  = 25
C               EVAL          EXTRPLY  = '''joe20x'''
C* Set up BCC addresss
C               EVAL          BCCOFF   = 677
C               EVAL          BCCLEN   = 25
C               EVAL          EXTBCC   = '''joe30y.c'''
C* Set up CC addresses
C               EVAL          CCOFF    = 702
C               EVAL          CCLLEN   = 25
C               EVAL          EXTCC    = '''joe40y.com'''
C* Set up a body file
C               EVAL          BDYPHTOFF = 728
C               EVAL          BDYLEN   = 116
C               EVAL          BDYNUMB  = 3
C               EVAL          BDYX1    = 36
C               EVAL          BDYY1    = 20
C               EVAL          BDYOFF1  = 20
C               EVAL          BDYPLEN1 = 8
C* Set to use a directory with 1st body file
C* Dont use leading slash

```



```
C          EVAL      ERR = '1'
C          ENDIF
C          ENDIF
C          SETON      LR
```

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