

z/OS 1.13 IBM Print Products Latest Status & New Features

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Agenda

- **New function in Infoprint Server V1R13**
- **Infoprint Server APARs of interest**
- **New Transforms from AFP V1.1**
- **Transforms enhancements and service**
- **New function in PSF V4R4**
- **ACIF enhancements**
- **PPFA enhancements**
- **Where to find more information**

IBM Infoprint Server

What is Infoprint Server?

- **Printer Inventory**

- Provides a single set of printer definitions that all the components of Infoprint Server use.
- Contains printer customization information that Print Services Facility (PSF) uses.

- **Print Interface**

- Accepts print requests from z/OS UNIX System Services and from remote systems in your network, and allocates output data sets on the JES spool for printing on local or remote printers.

What is Infoprint Server?

- **NetSpool™**
 - Intercepts print output from VTAM applications and allocates output data sets on the JES2 or JES3 spool for printing on local or remote printers.
- **IP PrintWay™**
 - Transmits output data sets from the JES2 or JES3 spool to remote printers in a TCP/IP network or SNA network.
- **Infoprint Central**
 - A Web-based application that lets help desk operators and other authorized users or job submitters work with print jobs (output data sets) on the JES spool, printers controlled by IP PrintWay extended mode or PSF, and NetSpool logical units.
 - Lets operators see system status and printer definitions.

What is Infoprint Server?

- **Windows Client**
 - Infoprint Port Monitor for Windows, which transmits documents and job attributes to Infoprint Server from Windows applications.
- **Transform Interface**
 - Communicates with transform products that IBM and Ricoh provide. Transforms convert data from one format to another. For example, from PDF to AFP format, or from AFP to PCL format.

New function in Infoprint Server 1.13

- **Secondary JES2 support**
- **IP PrintWay job-selection by records or AFP pages**
- **Printer Inventory enhancements for PSF**
- **Infoprint Central enhancements**
- **Email enhancements**
- **Infoprint Port Monitor support for 64-bit Windows systems**

Infoprint Server 1.13 Secondary JES2 support



- When you specify a secondary JES2 subsystem, Infoprint Server uses this spool to allocate output data sets, and to select output data sets for printing.
- Lets you isolate your print data on a secondary JES2 spool, so that unexpectedly large amounts of print output cannot impact the primary JES2 subsystem.

Infoprint Server 1.13 Secondary JES2 support



- Specify the name of the secondary JES2 subsystem in the Infoprint Server **aopd.conf** configuration file, using the 1-4 character **jes-name** attribute.

- **Example:**

```
jes-name = JESX
```

Infoprint Server 1.13

PrintWay job-selection by records or pages



- Support for IP Printway extended mode to select jobs to be printed based on the amount of output, either in records or AFP pages, and direct the jobs to appropriate printers.
- For example, you might direct large print jobs to high-speed, high-volume printers, and small ones to lower-speed distributed printers.
- Removes one of the last significant inhibitors for migrating from PrintWay basic mode to extended mode.

Infoprint Server 1.13

PrintWay job-selection by records or pages



- Specify the minimum or maximum number of records or AFP pages in the IP PrintWay job-selection rules, either in ISPF panels or PIDU:

```
Session B - [24 x 80]
File Edit View Communication Actions Window Help
Add Job Selection Rule
Command ==> _____
Rule name . . _____
Description _____ (extend)
Operator security profile
. . . _____
DEST. . . _____
CLASS . . . _____
FORMS . . . _____
Creator . _____
WRITER. . . _____
DEST IP address . 3 1. Include 2. Exclude 3. Ignore
Record limit . . . . Lower _____ Upper _____
Page limit (AFP-only). Lower 50 _____ Upper 200 _____
MA b 15/033
Connected to remote server/host bldpdev9 using lu/pool TCPLU001 and port 23
```



Infoprint Server 1.13

Printer Inventory enhancements for PSF



- Now, when PSF uses the Infoprint Server Inventory:
 - PSF messages about specific jobs or printers can be written in the Infoprint Server common message log, and displayed by Infoprint Central.
 - You can see information about print jobs that PSF has finished processing, such as the final status and on what printer it printed.
 - Infoprint Server ISPF panels can be used to define new properties that PSF has added for AFP Download Plus, and these can be viewed in Infoprint Central
- PSF V4R4 required




Infoprint Server 1.13 Printer Inventory enhancements for PSF



- **To write PSF messages in the common message log:**
 1. Select the **Log messages** field in the **PSF FSS** definition using ISPF panels, or the **log-messages** attribute using PIDU.
 2. Restart the PSF FSS.
- **View printer log:**

Last refresh: Sun Aug 7 19:04:34 2011



Name PRT609 [View log](#)

+

+ Status

+ Properties

+ Current Print Job

+ Printer's Web Page

Infoprint Server 1.13 Printer Inventory enhancements for PSF

- New AFP Download Plus fields supported in Infoprint Server:
 - **Direct download** (direct-download)
 - **Response timeout** (response-timeout)
 - **No response action** (no-response-action)
 - **Notify** (no-response-notify)
 - **Paper length** (paper-length)
 - **Paper width** (paper-width)

Infoprint Server 1.13 Printer Inventory enhancements for PSF

- New AFP Download Plus fields supported in Infoprint Server :
 - **Display status** (display-afpdp-status)
 - **Presentation text objects (PTOCA)** (inline-ptoca-objects)
 - **Recovery pages** (transmit-recovery-pages)
 - **Report Line-Mode Conversion paper length errors** (report-line-mode-conversion-paper-length-errors)
 - **Use Line-Mode Migration LINECT** (use-line-mode-migration-linect)

Infoprint Server 1.13 Infoprint Central enhancements

- Infoprint Central has been enhanced to:
 - Let you see the age of print jobs on the JES spool in all print job displays
 - Search for print jobs by age
 - See new IP PrintWay Extended Mode fields used for job selection

Infoprint Server 1.13

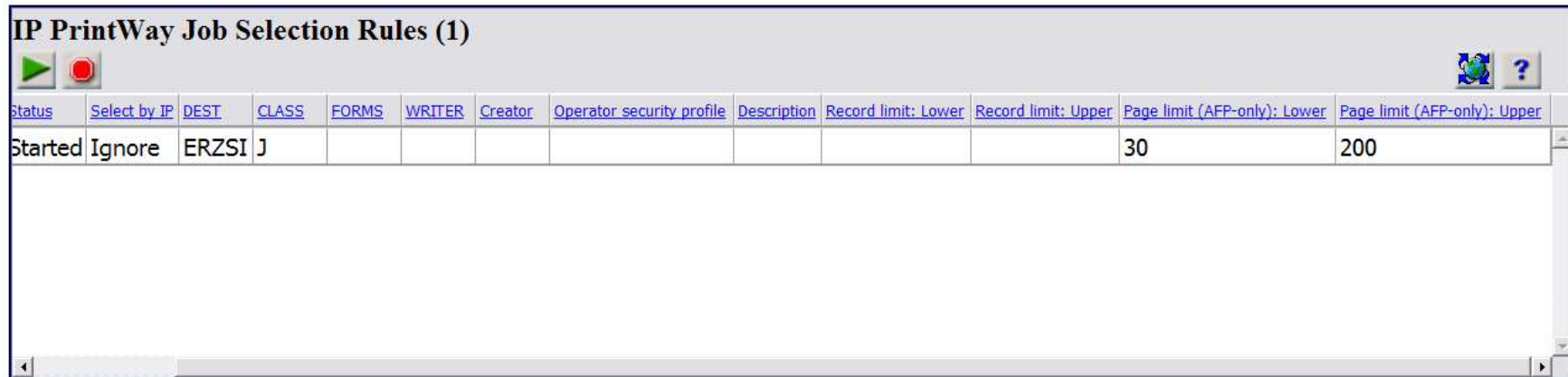
Infoprint Central enhancements



- To search for print jobs by age in Infoprint Central:
 1. In the left pane, select “**Work with print jobs.**”
 2. In the **Submitted** field, select **Less than** or **More than** and type a value in the **Hours ago** field.
 3. Specify another search value and click **Find.**

Infoprint Server 1.13 Infoprint Central enhancements

- To see the IP PrintWay job-selection rules in Infoprint Central:
 1. In the left pane, select “Check system status”.
 2. Expand the **IP PrintWay Job Selection Rules** section.



Status	Select by IP	DEST	CLASS	FORMS	WRITER	Creator	Operator security profile	Description	Record limit: Lower	Record limit: Upper	Page limit (AFP-only): Lower	Page limit (AFP-only): Upper
Started	Ignore	ERZSI J									30	200

Infoprint Server 1.13

Infoprint Port Monitor V3.1



- Infoprint Port Monitor V3.1 adds support for 64-bit Windows systems.
- Lets you print from Windows 7, Windows Vista, Windows Server 2003, Windows Server 2008, and Windows XP systems to any printer defined in the Infoprint Server Printer Inventory
- Support added in APAR OA37037, PTF **UA61367**



Infoprint Server 1.13

Infoprint Port Monitor V3.1



- Download Infoprint Port Monitor V3.1 to one of the supported Windows systems from one of these locations:
 - Web: Download from: www.ibm.com. Search for “Infoprint Port Monitor”.
 - z/OS system: Use a file transfer program (such as ftp) to download one of these files in binary:
 - For 64-bit Windows systems:
`/usr/lpp/Printsrv/win/En_US/aopwin64.exe`



Infoprint Server 1.13

Enhanced e-mail support



- You can now use Printway extended mode to:
 - Include text and line-data documents inline in the body of an e-mail, so that they can be read without opening an e-mail attachment.
 - Specify the e-mail recipients in an e-mail header in line-data documents without modifying JCL or printer definitions, using a subset of RFC 2822-compliant email headers.
 - Include a standard message in the beginning of each e-mail to specific recipients, such as a standard greeting and introductory paragraph.
 - Send different documents from a single print job to different e-mail recipients using e-mail headers, job attributes, or JCL.



Infoprint Server 1.13

Enhanced e-mail support



- To include text and line-data documents inline in the body of an e-mail, do one of these:
 - **ISPF panel:**
In the e-mail printer definition, select the **Inline text and line data** field.
 - **PIDU:**
Specify the **mail-inline-text=yes** printer attribute.
 - **Submitting a job:**
Specify the **mail-inline-text=yes** job attribute.



Infoprint Server 1.13 Enhanced e-mail support

- To specify the e-mail recipients in an e-mail header:
 - Create an e-mail header in the document.
 - Do one of these:
 - **ISPF panel:**
In the e-mail printer definition, select the **Embedded headers** field.
 - **PIDU:**
Specify the **mail-embedded-headers=yes** printer attribute.
 - **Submitting a job:**
Specify the **mail-embedded-headers=yes** job attribute.

Infoprint Server 1.13 Enhanced e-mail support



- To include a standard message in the beginning of each e-mail, do one of these:
 - **ISPF panel:**
Specify the message in the **Inline message** field in the e-mail printer definition.
 - **PIDU:**
Specify the **mail-inline-message** printer attribute.

Infoprint Server 1.13 Enhanced e-mail support



- To send different documents in the same print job to different e-mail recipients specified in e-mail headers, job attributes, or JCL:
 - **aopstart EXEC:**
Specify the `AOP_MAIL_USE_FIRST_ADDRESS=NO` environment variable.

Infoprint Server, pre-1.13 service and updates

Other notable Infoprint Server APARs



- **OA33104/UA52677**

If OMVS is shutdown while Infoprint Server is running, an ABEND0D6 occurs.

- **OA32759/UA49583 (HIPER)**

The Infoprint Server Line Printer Daemon (LPD) (AOPLPD) incorrectly sends a NACK (negative response) and ends the connection when the LPR client sends leading zeros in the file size.

- **OA35095/UA58977 (HIPER)**

The final job status shown in Infoprint Central for jobs that are no longer on the JES spool is sometimes incorrect for multi-document jobs.



Other notable Infoprint Server APARs



- **OA33293/UA56237 (HIPER)**

In a busy system, sometimes Infoprint Server begins to process documents, then erroneously detects that the documents are no longer in the system and does not print them. The documents remain on the JES spool.

- **OA33627/UA55602 (HIPER)**

If Infoprint Server is not enabled when DFS starts, an unhandled condition occurs (ABEND0C4) in the stubbed Infoprint Server Application Interface code (aopapi.dll).





IBM Infoprint Server Transforms



Infoprint Server Transforms

- Transforms to AFP allow you to transform the following data streams to AFP:
 - HP Printer Control Language (PCL)
 - Adobe Portable Document Format (PDF)
 - Adobe PostScript
 - SAP R/3 System Generic Output Format (SAPGOF)
 - Xerox line-conditioned data stream (LCDS) and metacode (InfoPrint XT Extender)
- Transforms from AFP allow you to transform AFP to the following data streams:
 - HP Printer Control Language (PCL)
 - Adobe Portable Document Format (PDF)
 - Adobe PostScript

Transforms from AFP V1.1



New Release!

Transforms from AFP V1.1



- The new IBM Print Transform from AFP V1.1 products for Infoprint Server for z/OS replace the previous z/OS Transforms from AFP, and give you improved functionality.
 - Full support for both 240-pel and 300-pel raster fonts.
 - Better support for AFP PGD descriptor, helpful for jobs with mixed paper sizes
 - Improved and more automatic font mapping
- Print Transform from **AFP to PDF** for Infoprint Server for z/OS, V1.1 (Print Transform **AFPxPDF**, 5655-TF1)
- Print Transform from **AFP to PCL** for Infoprint Server for z/OS, V1.1 (Print Transform **AFPxPCL**, 5655-TF2)
- Print Transform from **AFP to PostScript** for Infoprint Server for z/OS, V1.1 (Print Transform **AFPxPS**, 5655-TF3)



New Release!

Transforms from AFP V1.1



- **Enhancements planned for fourth quarter 2011:**
 - Customize output, such as customizing monochrome or color output
 - Customize error message behavior
 - Transform AFP XML and record-format line data
 - Optimize PDF documents for fast viewing from the Internet
 - Create links in PDF documents for improved document and information navigation
- **AFPxPDF:** PTF for APAR **OA35704**
- **AFPxPCL:** PTF for APAR **OA35705**
- **AFPxPS:** PTF for APAR **OA35706**



Transforms to AFP V2.2

Transforms to AFP V2.2

Error Handling Enhancements



- Better, clearer error messages
- Transform messages also now recorded in the Infoprint Server Common Message Log and sent to the transform invoker's stderr.
- New fidelity settings; decide what will cause a job to fail.
- Datastream errors (non-zero return codes) are now signaled to the end user.
- More granularity added to the return codes; RC=0/4/8 instead of RC=0/1.
- Ability to suppress the trailer message page in case of either errors or warning messages.



Transforms to AFP V2.2 Error Handling Enhancements



- Required for Transforms to AFP V2.2 error handling enhancements:
 - OA32105/**UA54506** for the Transforms to AFP product
 - OA32228/**UA54346** for Infoprint Server



Other notable Transform APARs

- Transforms from AFP, V2.1
 - OA33290 (**UA58340, UA58341, UA58342**)
Provides jogging/offset stacking support.
 - OA30483(**UA53492, UA53493, UA53494**)
Transform stops processing when IOCA image data is incorrect.

IBM PSF V4.4

What is PSF?

- PSF manages and controls data transmitted to Advanced Function Presentation (AFP) printers that are channel-attached, SNA-attached, or TCP/IP-attached
- PSF enables:
 - automated print processes
 - system management of print files, attributes, and resources
 - page-level error recovery
 - accounting
 - extensive diagnostics
 - print process statistics

Included with PSF

- **Installation Exits**

Installation Exits let you modify PSF functions, such as separator pages, output records, system management facilities (SMF) type 6 records, PSF messages, and resources

- **Point Counting Tool (APSGPPCT)**

APSGPPCT is a batch program that determines the correct software license for PSF, based on the printer points assigned to each printer in your installation.

- **Resident Font Table (APSRFTBL)**

APSRFTBL identifies the symbol sets that are resident in printers, such as 4224, 4230, 4234, 4247, 6408, and 6412. APSRFTBL contains tables that associate the font character set and code page for a particular host font with the identifier of the resident symbol set

Included with PSF

- **AFP Reblocking Program (AFRREBLK)**

AFRREBLK restructures AFP file data that is transferred from a workstation to a z/OS host so that the data records can be printed with PSF

- **Color Mapping Tool**

The Color Mapping Tool generates color mapping tables, which map selected MO:DCA™ structured fields from current to new color values

- **Font Conversion Program (APSRCF30)**

APSRCF30 is a font conversion program that uses your currently installed 240-pel fonts as input, converts them to 300-pel fonts, and places the converted output into a partitioned data set

PSF optional features

- **Download for z/OS**
Download for z/OS automatically transmits line data, mixed mode, XML data, MO:DCA-P data, and many other data streams from the JES spool to receiving systems using TCP/IP.
- **AFP Download Plus**
Automatically transforms line data or XML data to MO:DCA data and transmits MO:DCA-P data and resources from the JES spool to receiving systems using TCP/IP.
- **AFP Upload**
AFP Upload lets you submit a job to InfoPrint Manager for AIX for printing on any printer supported by PSF for z/OS.

PSF optional features

- **AFP Conversion and Indexing Facility (ACIF)**
Converts line data to MO:DCA, indexes print files, collects print resources
- **Compatibility Fonts**
IBM compatibility fonts are supplied with PSF to provide compatibility between PSF applications and those printers and applications that were designed for IBM typewriters, 6670 laser printers, and the IBM 3800 printing subsystem.

PSF V4.4

- **Planned availability date: September 30, 2011**
- Uses Infoprint Server common message log, for consolidation of print messages.
- Support for IPv6
- Enhancements to Advanced Presentation bar code processing
- Support to allow Portable Network Graphics (PNG) images
- Enhanced Unicode support
- Support for greater than 255 copies of a data set
- Support for PTOCA Text Objects
- AFP Download Plus enhancement

PSF V4.4

Consolidation of messages



- PSF and AFP Download Plus now write FSS, FSA, and Print Job messages to the Infoprint Server common message log, as well as existing destinations (message files, consoles, and receivers).
- Infoprint Central can be used to view these messages
- Required:
 - z/OS 1.13
 - JES2 or JES3 at the supported z/OS 1.13 level
 - A license for the Infoprint Server feature



PSF V4.4

Consolidation of messages



- To enable PSF to write messages to the common log:
 - Update these BPXPRMxx parameters in the SYS1.PARMLIB member:
 - **MAXSOCKETS, MAXPROCSYS and MAXPROCUSER**
Increase the value by 3 for each FSS and by 1 for each FSA.
 - Define a valid OMVS segment in RACF for the user ID, group ID, or both so that PSF can write messages to the common message log.
 - Select the **Log messages** parameter in the Infoprint Server Printer Inventory.

PSF V4.4 IPv6 support



- PSF, Download for z/OS and AFP Download Plus are updated to support native IPv6 addresses and mixed-mode addresses in addition to native IPv4 addresses.
- This allows you to use printers that are attached to an IPv6 network, in addition to those attached to an IPv4 network

PSF V4.4

Enhanced AFP bar code support

- **More flexibility for applications that use bar codes**
 - Royal Mail Group Ltd.'s RED TAG bar code, which is used with their new RED TAG intelligent mail offering.
 - The United States Postal Service's Intelligent Mail Container Bar code
 - GS1 DataBar (previously known as Reduced Space Symbology) bar codes. This provides small bar code symbols for those who require a symbol smaller than produced by their BCOCA implementation.
 - Data Matrix bar codes, which have a new parameter that allows control over the encoding scheme used to produce the symbol

PSF V4.4 PNG support



- PNG is a graphics format that is designed to work well with Internet applications, including support for lossless compression, indexed colors, process colors, grayscale, and an optional alpha channel.
- **Portable Network Graphics (PNG) images now allowed**, in addition to GIF, JPEG and TIFF.
- These data objects can either be included inline with a print job or installed in a resource library by using software such as AFP Resource Installer.



PSF V4.4

Enhanced Unicode support



- Support for **extended code pages**, which are code pages that can contain Unicode values.
 - Pages containing user-defined characters with TrueType and OpenType fonts
 - Text Fidelity Control, which specifies the actions to be taken by PSF/printer when a text exception is detected in a Unicode datastream
 - PTOCA Glyph Run control sequences, which provide a mechanism to render Unicode complex text on high-speed printers



PSF V4.4

Support for greater than 255 copies



- Define more than 255 copies of a data set to be printed within the Group Information field.
- Use the **COPYCNT** parameter in a DD statement or an OUTPUT statement
- Example: **COPYCNT=(500)**
- **Note:** z/OS 1.13 is required for the support.

PSF V4.4 PTOCA support

- Allows Presentation Text Object Content Architecture (PTOCA) text objects to be stored as resource objects, and mapped to the PTOCA presentation space
- Support for PTOCA Unicode complex text and glyph runs with these new PTOCA glyph layout controls:
 - Glyph Layout Control (GLC)
 - Glyph ID Run (GIR)
 - Glyph Advance Run (GAR)
 - Glyph Offset Run (GOR)
 - Unicode Complex Text (UCT)

PSF V4.4

Multi-page and multi-image PDF and TIFF



- Support for multi-page PDF containers and multi-image TIFF containers, for transfer of multiple page PDF files or multiple image TIFF files from the application to the server and to the printer controller as one single AFP container.
- These resources are supported in the object container library for referencing a single page from a multiple page PDF or TIFF object included with an Include Object (IOB) structured field:
 - PDF multiple-page objects
 - PDF multiple-page with transparency objects
 - TIFF multiple-image objects
 - TIFF multiple-image without transparency objects

PSF V4.4

Other enhancements



- Support for ICC device link color management resources (DL CMRs) to customize the conversion between input and output color spaces.
- **AFP Download Plus**
 - Support for **NORESP** and **RESPTIME** parameters, specifying how long AFP Download Plus should wait for a response from another system, and what action to take if one is not received.



PPFA

What is PPFA?

- Page Printer Formatting Aid (PPFA) is a tool that allows you to create and compile page definitions and form definitions, which are used to format AFP documents.

PPFA updates

- **Updates provided via PTF (APAR PM36617)**, support PSF new function, planned GA September 30, 2011
- Support for new object types on the OBJECT page definition command and on the OBJECT subcommand on the LAYOUT, PRINTLINE and XLAYOUT commands:
 - PTOCA - **PTOCA text objects** with an OEG
 - MPDF, MPDFT - **Multiple page PDF objects**
 - MTIFF, MTIFFNT - **Multiple image TIFF objects**
 - AFPCTIFF - AFPC Tag Image File Format (TIFF) subset type objects
 - PNG – Portable Network Graphics (**PNG**) type objects
 - New parameters, OBPAGE and RIPPAGE, are added to the OBJECT commands to indicate a specific page in placing or preprocessing a multiple page PDF or multiple image TIFF object.

PPFA updates

- Support for a color management resource (CMR) type of device link (DL).
- A new parameter, **INLINE**, added to the DOFONT page definition command to specify a Data Object Font is to be found in an inline resource group only. This is intended to be used when complex text is present within a PTOCA text object with OEG and the user has put the data object font in an inline resource group.

PPFA updates

- The following new bar code functions are added to the PPFA FIELD BARCODE page definition command:
 - Support for new bar code types REDTAG and DATABAR.
 - Support for new modification 5 (MOD 5) for bar code type CODE128 for the Intelligent Mail Container bar code.
 - Support for new modifications 3 and 4 (MOD 3, MOD 4) for bar code type
 - ITL2OF5 for bearer bars on the Interleaved 2 of 5 bar code.
 - New keyword for Data Matrix 2D Parameters, ENCODE, to specify a Data Matrix 2D bar code encodation scheme.
 - Extending support of MODWIDTH SMALL to include the following fixed size bar codes:
 - POSTNET
 - PLANET (POSTNET MOD 4)
 - RM4SCC
 - Dutch KIX (RM4SCC MOD 1)
 - Maxicode (2DMAXI)
 - Australia Postal (APOSTAL)



ACIF



New functions in ACIF

- **Updates provided via PTF (APAR PM37815),)**, support PSF new function, planned GA September 30, 2011
- **Same new functions as PSF and PPFA**
- **Also added new TRACE capabilities**

PPFA and PSF Functions in ACIF

- Include several **new bar code types** from a pagedef application and save by specifying RESTYPE=BCOCA
- Include **PTOCA data objects** from applications and have ACIF save them by specifying RESTYPE=PTOCA
- **Multi-image TIFF and multi-page PDF objects** can be included and saved with RESTYPE=OBJCON
- Fonts with INLINE requested on DOFONT pagedef will be saved if RESTYPE=FONT is specified. These fonts **MUST** be inline resources in the input file given to ACIF.

Improved TRACE support

- Existing TRACE=YES parameter will still require and write to GTF
- New TRACE=PDS parm will write to the TRACEDD data set
- Added many new trace entries to ACIF and its CCM component to aid Level 2 in debugging problems.

Where to go for more information on Infoprint Server



- Our publications can be found at the IBM Publications Center:
<http://www.elink.ibm.link.ibm.com/publications/servlet/pbi.wss>
- Infoprint Server publications
 - z/OS Infoprint Server Customization (S544-5744)
 - z/OS Infoprint Server Introduction (S544-5742)
 - z/OS Infoprint Server Messages and Diagnosis (G544-5747)
 - z/OS Infoprint Server Operation and Administration (S544-5745)
 - z/OS Infoprint Server Printer Inventory for PSF (S510-7703)
 - z/OS Infoprint Server User's Guide (S544-5746)
 - ABCs of z/OS System Programming Volume 7 (SG24-6987)
 - z/OS Migration (GA22-7499)



Where to go for more information on PSF and related products



- PSF 4.4 publications
 - AFP Conversion and Indexing Facility User's Guide (S550-0436)
 - PPF A User's Guide (S544-5284)
 - PSF for z/OS: AFP Download Plus (S550-0433)
 - PSF for z/OS: Customization (S550-0427)
 - PSF for z/OS: Diagnosis (G550-0428)
 - PSF for z/OS: Download for z/OS (S550-0429)
 - PSF for z/OS: Introduction (G550-0430)
 - PSF for z/OS: Licensed Program Specifications (G550-0431)
 - PSF for z/OS: Messages and Codes (G550-0432)
 - PSF for z/OS: Security Guide (S550-0434)
 - PSF for z/OS: User's Guide (S550-0435)
 - PSF V4R4.0 for z/OS Bookshelf (S550-0437)



Where to go for more information on Transforms



- Transforms from AFP V1.1
 - IBM Print Transform from AFP for Infoprint Server for z/OS (G325-2634)
- Transforms to AFP V2.2
 - IBM Infoprint Transforms to AFP for z/OS (G550-0443)