



z/OS 2.1

# IBM Print Products Latest Status and New Features

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# Agenda



- New function in Infoprint Server V2R1
- New release of IBM Infoprint Server Transforms to AFP for z/OS: V2.3
- IBM Print Transforms from AFP V1.1 enhancements
- Other APARs of interest

# What is Infoprint Server?



- 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.
- 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.

# 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 the InfoPrint Solutions Company provide. Transforms convert data from one format to another. For example, from PDF to AFP format, or from AFP to PCL format.

# IBM Infoprint Server V2R1 New Function

# New in Infoprint Server V2R1



- Dynamic Configuration for most Infoprint Server options
- Common Message Log can now use z/OS System Logger
- SMF type 6 enhancements

# IBM Infoprint Server V2R1 Dynamic Configuration



# Infoprint Server 2.1

## Why Dynamic Configuration?



- You can now configure Infoprint Server dynamically while it is running. For most configuration attributes, you no longer need to stop and restart Infoprint Server for the new value to take effect.
- Infoprint Server customizable configuration attributes reside in various configuration files and environment variables in the aopstart EXEC. Most of these attributes are have now been consolidated into one system configuration definition.
- New Infoprint Server ISPF panel (12.8.8) or Printer Inventory Definition Utility (PIDU) can be used to view consolidated configuration attributes and environment variables, and change some of them.

# Infoprint Server 2.1

## New System Configuration definition



- The Printer Inventory contains several kinds of objects that you can display and edit:
  - Printer definitions
  - Printer pool definitions
  - FSS definitions
  - FSA definitions
  - Job selection rules
  - New: System configuration definition
- The System configuration definition contains system information for Infoprint Server.  
Created automatically, but can be modified by the administrator if the dynamic configuration function is enabled in aopd.conf.

# Infoprint Server 2.1

## Enabling dynamic configuration



- Edit `aopd.conf` to add `dynamic-configuration = yes`, and save your changes.
- If Infoprint Server is running, stop all daemons using `AOPSTOP`.
- Start Infoprint Server with `AOPSTART`.  
The system configuration definition in the Printer Inventory will be automatically created.
- Verify that the dynamic configuration is enabled  
Use the ISPF panels (12.8) to verify that the System object (option 8) exists.

# Infoprint Server 2.1

## Enabling dynamic configuration



- aopd.conf:
- ...  
ascii-codepage = ISO8859-1  
base-directory = /var/Printsrv  
dynamic-configuration = yes  
ebcdic-codepage = IBM-1047  
inventory = AOP1  
ipp-port-number = 631  
job-prefix = PS  
log-retention = 1  
...

# Infoprint Server 2.1 System Configuration definition



```
File Edit View Communication Actions Window Help
[Icons]
Infoprint Server: Printer Inventory Manager
Option ==> _____

Printer Definitions
  1 Add          Add a printer definition
  2 List        List printer definitions
  3 Select      Select printer definitions to list

Other Functions
  4 Other Definitions  Manage FSS, FSA, pool, and job selection definitions
  5 PrintWay Queue     View IP PrintWay basic mode transmission queue
  6 PrintWay Message   View IP PrintWay basic mode message log

Infoprint Server Configuration
  7 ISPF             Manage ISPF panel configuration
  8 System           Manage system configuration

F1=HELP    F2=SPLIT    F3=END      F4=RETURN    F5=RFIND    F6=RCHANGE
F7=UP      F8=DOWN     F9=SWAP    F10=LEFT    F11=RIGHT   F12=RETRIEVE

MA  b 02/014
```

# Infoprint Server 2.1

## New System Configuration definition



```

Edit                               Infoprint Server: System Configuration
Command ==> _____

Startup Information:
  / Dynamic configuration
  / Resolve IP PrintWay printers
Base directory . . . . . /var/Printsrv           (extend)
Printer Inventory name . . . . . AOP1
JES subsystem name . . . . .
XCF group name . . . . . AOPAOP1
Started daemons:
      ippd      / lpd      netd      outd
      snmpd     ssid      subd      xfd

General:
  _ Allow all characters in line data
Job ID prefix . . . . . PS

Code Pages:
  ASCII . . . . . ISO8859-1
  EBCDIC . . . . . IBM-1047

F1=HELP      F2=SPLIT      F3=END      F4=RETURN      F5=RFIND      F6=RCHANGE
F7=UP        F8=DOWN      F9=SWAP     F10=LEFT      F11=RIGHT     F12=RETRIEVE

```

# Infoprint Server 2.1

## New System Configuration definition



```
Session B - [24 x 80]
File Edit View Communication Actions Window Help
[Icons]
Edit Infoprint Server: System Configuration End of data
Command ==> _____
More: -
-----
Email:
  / Send email to address of first document
  _ Do not add suffixes to files
  Preserve suffixes . . . . _____ (more)
  Application path . . . . /bin/sendmail (extend)
  Application options . . . . _____ (extend)

Print Interface:
  IPP port number . . 631
  LPD port number . . 515

SNMP Subagent:
  Community name . . public

Other:
  _____ (more)

F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE

Mf b 05/053
[Icons] Connected to remote server/host cb88.pdl.pok.ibm.com using port 23
```

# Infoprint Server 2.1

## Editing the system configuration



- Use either Infoprint server ISPF panels (12.8.8) or Printer Inventory Definition Utility (PIDU) to edit the system configuration attributes.
- ISPF:
  - On the Infoprint Server: Printer Inventory Manager ISPF panel (12.8), select 8 System and press Enter.
  - Infoprint Server startup information can be viewed and changes can be made to editable fields.
  - If the change requires a restart of an Infoprint Server daemon (see Help field for each field), stop the daemon and restart that daemon for the change to take effect.



# Infoprint Server 2.1

## Editing the system configuration



- You can modify attributes in the system configuration definition only if dynamic configuration is enabled.
- Changes to the system configuration definition take effect as soon as you save them, with a few exceptions.
- The configuration definition is created automatically, and is always named aopd.conf.  
You cannot create, delete, or rename it.

# Infoprint Server 2.1

## New System Configuration definition



- Most attributes in aopd.conf are replaced by attributes in the System Configuration.
- A few are not replaced. These few are still read in aopd.conf, and still require aopstop and aopstart in order to take effect:
  - base-directory = path
  - inventory = inventory
  - jes-name = name
  - resolve-printway-printers = yes | no
  - start-daemons = {[ippd] [lpd] [netd] [outd] [snmpd] [ssid] [subd] [xfd]}

# Infoprint Server 2.1

## Attributes in the configuration definition



- A few of the aopd.conf attributes that are replaced by System Configuration attributes:
  - ascii-codepage = codepage
  - ebcdic-codepage = name
  - log-retention = days
  - max-historical-inventory-size = megabytes
- See Infoprint Server Customization for complete list of aopd.conf attributes that are replaced by system configuration attributes.

# Infoprint Server 2.1

## Environment variables



- If dynamic configuration is not enabled, Infoprint Server uses the environment variables that are set in the aopstart EXEC. If dynamic configuration is enabled, Infoprint Server ignores these environment variables and instead uses the equivalent configuration attributes.
- A few of the environment variables replaced:
  - AOP\_MAXTHREADTASKS
  - AOP\_SELECT\_WORK\_FROM\_HOLD\_QUEUE
  - AOP\_BLANK\_TRUNCATION\_CLASSES
  - AOP\_MAIL\_USE\_FIRST\_ADDRESS
- See Infoprint Server Customization for complete list of environment variables replaced by system configuration attributes.

# IBM Infoprint Server V2R1 System logger

# Infoprint Server 2.1

## Common log enhancement



- You can now use the system logger, a component of MVS, for Infoprint Server messages. The system logger provides a more robust, reliable method for storing messages.
- Consolidates messages from:
  - Infoprint Server
  - Supported transform products
  - PSF for z/OS V4R4 and later

# Infoprint Server 2.1

## Infoprint Server Common Message Log



- Consolidates messages so that you can see them in one place.
- Contains messages from all components of Infoprint Server except for IP PrintWay basic mode.
- You can view and process messages in the common message log with:
  - Infoprint Central
  - aoplogu

# Infoprint Server 2.1

## Infoprint Server common message log



- The common message log can reside in
  - Log files in the z/OS UNIX file system
  - Starting in V2R1: an MVS system logger log stream
- Default: the log will reside in the z/OS UNIX file system specified in the base-directory attribute in the aopd.conf configuration file, if:
  - The MVS System Logger is not configured for the common message log  
AND
  - log-retention  $\geq 1$  in aopd.conf



# Infoprint Server 2.1

## Should you use the system logger?



- Advantages:
  - You can retain more messages in a system logger log stream because the system logger can automatically offload log records to auxiliary storage when the log stream is nearing capacity.
  - Better support for sysplex environments  
If Infoprint Server runs on more than one system in a sysplex, all instances of Infoprint Server can write messages to the same log stream.
  - You can use the Infoprint Server `aoplogu` command to view merged messages from all systems.

# Infoprint Server 2.1

## Should you use the system logger?



- Considerations:
  - It might take more time for Infoprint Central and the aoplogu command to retrieve and display messages from a log stream.
  - To use the MVS system logger, you must meet the MVS system logger requirements, and enable the Infoprint Server dynamic configuration function.
  - The addition of the System Logger as an option for storing and accessing messages will be transparent to the end user, but requires several Infoprint Server and System logger customization actions to configure.

# Infoprint Server 2.1

## System logger configuration actions



- Decide what type of log stream to use.
  - DASD-only log streams
    - For single system configurations
    - To keep logs separate for each instance of Infoprint Server in a sysplex
  - Coupling facility log streams
    - When running multiple instances of Infoprint Server in a sysplex, and there is a need to view the merged log using aoplogu from each instance system of Infoprint Server

# Infoprint Server 2.1

## Defining log streams to the MVS system logger



- 1. Configure and set up security for the log stream.
  - Define the system logger LOGR policy.
  - If you are using a coupling-facility log stream, define the system logger CFRM policy.
  - Set up security for the log stream.
- 2. If you are using a coupling-facility log stream, define the structure in the LOGR policy and CFRM policy.
- 3. Define the log stream in the LOGR policy.
- 4. To verify that the log stream has been defined to the MVS system logger.  
`DISPLAY LOGGER,L,LSN=AOP.MSG`

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## Naming convention for log streams



- Infoprint Server does not use a fixed name for the log stream, so any name that meets System Logger guidelines (for example, each log stream name must be unique in a sysplex) is valid.
- We suggest using AOP as the first qualifier for a log stream name to make it unique and easily identifiable as an Infoprint Server log stream.

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## Suggested naming convention



- If you plan to define only one DASD-only or one coupling-facility log stream, you could use this naming convention:
  - AOP.MSG
- If you plan to define a separate DASD-only log stream, or a separate coupling-facility log stream for each instance of Infoprint Server in a sysplex, you could use this naming convention, where the third qualifier of the log-stream name (SYSA, SYSB) identifies the system:
  - AOP.MSG.SYSA
  - AOP.MSG.SYSB

# Infoprint Server 2.1

## How long to retain messages



- Infoprint Server does not delete any messages from the MVS system logger log stream, so this must be configured in the system logger.
- When you define a log stream to the system logger, select the system logger automatic deletion function and specify how long you want the system logger to retain the log-stream data sets that contain messages. Use these parameters when you run the system logger IXCMIAPU utility:
  - AUTODELETE(YES)
  - RETPD(dddd)
- Make sure that RETPD  $\geq$  the value in log-retention, so that you are able to display messages for historical jobs in Infoprint Central.

# Infoprint Server 2.1

## Determining the size of log-stream objects



- When you define a log stream, you can specify the size of the log-stream interim storage, staging data set, and offload data sets.
- To determine the optimum sizes, follow the guidelines in these publications:
  - z/OS MVS Setting Up a Sysplex
  - IBM redbooks System Programmer's Guide to: System Logger, SG24-6898, at <http://www.ibm.com/redbooks>
- Use the Coupling Facility Structure Sizer Tool (<http://www.ibm.com/servers/eserver/zseries/cfsizer>)



# Infoprint Server 2.1

## Determining the size of log-stream objects



- To determine the number of bytes that Infoprint Server writes to the common message log over a specified time period, for example, one day:  
`aoplogu -l 1:00:00 | wc -c`
- `aoplogu -l 1:00:00 | wc -l`
- `wc -l` divided by time might help determine the the rate at which log entries are written to the logstream, which is an input to CFSIZER.
- To calculate AVGBUFSIZE:
  - `wc -c` divided by `wc -l`.

# Infoprint Server 2.1

## Setting up security for log streams



- Before you can define a log stream to the MVS system logger, you must:
  - Define one or more profiles to RACF to protect the log streams.
  - Authorize system logger administrators and Infoprint Server users to these profiles.

# Infoprint Server 2.1

## Setting up security for a DASD-only log stream



- Example where the log stream name specified in the NAME parameter of the DEFINE LOGSTREAM statement in the LOGR policy is “AOP.MSG”
- 1. Define a resource profile for the log stream to RACF in the LOGSTRM class.  
RDEFINE LOGSTRM (AOP.MSG) UACC(NONE)
- 2. Give system logger administrators who run the IXCMIAPU utility to define, update, and delete log streams ALTER access to this profile.  
PERMIT AOP.MSG CLASS(LOGSTRM) ACCESS(ALTER)  
ID(userID)

# Infoprint Server 2.1

## Setting up security for a DASD-only log stream



- 3. Give Infoprint Server operators who start Infoprint Server UPDATE access to the profile, so that Infoprint Server can read and write messages.  
PERMIT AOP.MSG CLASS(LOGSTRM) ACCESS(UPDATE)  
ID(AOPOPER)
- 4. Give Infoprint Server administrators who use the aoplogu command READ access to the profile.  
PERMIT AOP.MSG CLASS(LOGSTRM) ACCESS(READ)  
ID(AOPADMIN)
- 5. Optionally, if you copy profiles in the LOGSTRM class into virtual storage, refresh the class:  
SETROPTS RACLIST(LOGSTRM) REFRESH

# Infoprint Server 2.1

## Setting up security for a coupling-facility log stream



- Example where the log stream name specified in the NAME parameter of the DEFINE LOGSTREAM statement in the LOGR policy is “AOP.MSG”, and the structure name in the LOGR policy is “AOP\_MSG\_STR”.
- 1. Define a resource profile for the log stream to RACF in the LOGSTRM class.  
RDEFINE LOGSTRM (AOP.MSG) UACC(NONE)
- 2. Define a resource profile to RACF in the FACILITY class to protect the structure for the log stream.  
RDEFINE FACILITY (IXLSTR.AOP\_MSG\_STR)  
UACC(NONE)

# Infoprint Server 2.1

## Setting up security for a coupling-facility log stream



- 3. Give the system logger administrator who runs the IXCMIAPU utility to define, update, and delete log streams ALTER access to the log stream profile and UPDATE access to the structure resource profile.

```
PERMIT AOP.MSG CLASS(LOGSTRM) ACCESS(ALTER)
      ID(userID)
```

```
PERMIT IXLSTR.AOP_MSG_STR CLASS(FACILITY)
ACCESS(UPDATE)
      ID(userID)
```

- 4. Give the system logger administrator who runs the IAXCMIAPU utility to define and delete structures ALTER access to the structure resource profile.

```
PERMIT IXLSTR.AOP_MSG_STR CLASS(FACILITY)
ACCESS(ALTER)
      ID(userID)
```

# Infoprint Server 2.1

## Setting up security for a coupling-facility log stream



- 5. Give Infoprint Server operators who can start Infoprint Server UPDATE access to the log-stream resource profile so that Infoprint Server can read and write messages.  
PERMIT AOP.MSG CLASS(LOGSTRM) ACCESS(UPDATE) ID(AOPOPER)
- 6. Give Infoprint Server administrators who use the aoplogu command READ access to the log-stream resource profile.  
PERMIT AOP.MSG CLASS(LOGSTRM) ACCESS(READ)  
ID(AOPADMIN)
- 7. Optionally, if you copy profiles in the LOGSTREAM and FACILITY classes into virtual storage, refresh the classes after you define new profiles or permit new users to profiles in the class.  
SETROPTS RACLIST(LOGSTREAM) REFRESH  
SETROPTS RACLIST(FACILITY) REFRESH

# Infoprint Server 2.1

## Activating a log stream in Infoprint Server



- Make sure that dynamic configuration is enabled in aopd.conf.
- Specify the log stream name in the Infoprint Server system configuration definition.
  - ISPF:
    - Go to the Infoprint Server ISPF panels.
    - Choose option 8 – “Manage System Configuration”
    - Specify the name of the log stream in Log stream name field Log stream name. Save and exit the ISPF panel.
  - PIDU, on OMVS command line:
    - pidu -c 'modify configuration aopd.conf logstream-name = AOP.MSG ; '



# Infoprint Server 2.1

## Activating a log stream in Infoprint Server



```
File Edit View Communication Actions Window Help
[Icons]
Edit Infoprint Server: System Configuration
Command ==> _____
More: - +
Messages:
Log retention period (days) . . . . . 1
Maximum Historical Inventory size (MBs) . 10
Log stream name . . . . . AOP.MSG
Send messages to hardcopy log . . . . . 3 1. All 2. List 3. None
Message list for hardcopy log . . . . . _____ (more)

Infoprint Central:
Extended MCS console name . . AOP1CB88

IP PrintWay (extended mode):
_ Ignore DEST, CLASS, FORMS routing errors
/_ Select work from hold queue
_ Suppress formatting after UNIX filter
/_ Write SMF records
APPL ID . . . . . _____
Blank truncation classes . . . . . _____

F1=HELP      F2=SPLIT    F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
F7=UP        F8=DOWN     F9=SWAP     F10=LEFT    F11=RIGHT   F12=RETRIEVE

MA b _____ 08/055
```

# Infoprint Server 2.1

## Activating a log stream in Infoprint Server



- When you save the system configuration definition, Infoprint Server immediately starts writing new messages to the specified log stream.
- If the log stream is a shared coupling-facility log stream, you must specify the name of the log stream in the system configuration definition on each system in the sysplex that shares the log stream.

# Infoprint Server 2.1

## Migrating to system logger



- Both the aoplogu command and Infoprint Central can automatically determine which log streams were used in the specified time period.
- If more than one log stream was used in the time period, aoplogu and Infoprint Central:
  - read messages from all log streams.
  - read any messages that were written in the z/OS UNIX file system during the time period.

# Infoprint Server 2.1

## Notes on log-retention



- The log-retention attribute is used to set:
  - The number of days worth of messages that Infoprint Central displays for print jobs and printers.
  - The number of days for which Infoprint Central displays print jobs that have been removed from the JES spool.
  - (If you do not use System Logger) The number of days worth of messages Infoprint Server retains in the z/OS UNIX file system.

# Infoprint Server 2.1

## Notes on log-retention



- If you use the system logger for Infoprint Server messages:
  - The retention period specified in the system logger log stream definition (RETPD) is used instead of log-retention for determining how long to store messages.
  - The log-retention value should be less than or equal to the RETPD retention period specified in the log stream definition.
  - If you don't use Infoprint Central, you can specify log-retention=0 to save space in the z/OS Unix file system.

# Infoprint Server 2.1

## When system logger errors occur



- If an MVS system logger error occurs that prevents Infoprint Server from connecting, writing messages to, or reading messages from the log stream, Infoprint Server writes an error message such as this to the console:
  - AOP186E user is not authorized to access log stream log-stream.
- If the same error occurs again, Infoprint Server does not write any more error messages to the console, but it does continue to try to connect to the log stream and write or read messages until the problem is corrected or you deactivate the log stream in Infoprint Server.

# Infoprint Server 2.1

## When system logger errors occur



- 
- To prevent lost messages while you fix an MVS system logger problem, you can deactivate the log stream in Infoprint Server.
- To deactivate a log stream:
  - On the Infoprint Server System Configuration panel, remove the name of the log stream in the Log stream name field, or specify in OMVS:  
`pidu -c "modify configuration aopd.conf logstream-name=null;"`
  - On the Infoprint Server System Configuration panel, specify the number of days worth of messages you want to retain in the z/OS UNIX file system in the Log retention period (days) field. The default value is 1 day if `dynamic-configuration=yes` or `start-daemons` includes `ssid`.
  - Save the panel. When Infoprint Server writes the first message to the common message log, it disconnects from the log stream and starts writing messages to the z/OS UNIX file system.

# Infoprint Server 2.1

## When system logger errors occur



- If you deactivate the log stream, Infoprint Server starts writing messages to the z/OS UNIX file system instead of to the log stream. When the system logger error is fixed, activate the log stream in Infoprint Server again.



# Infoprint Server 2.1

## New option for aoplogu



- If Infoprint Server is running, the aoplogu command can automatically determine the name of the log stream.
- To retrieve messages from a specific log stream when Infoprint Server is not running, use new option `-n log-stream`:

```
aoplogu -n AOP.MSG
```

# IBM Infoprint Server V2R1 SMF6 enhancements

# Infoprint Server 2.1

## SMF6 accounting enhancements



- If you run IP PrintWay extended mode, you can modify your accounting programs to take advantage of additional accounting information from the JOB JCL statement in System Management Facilities (SMF) type 6 records.
- For detailed information about the new SMF6ACCT field in the SMF6 record, see z/OS MVS System Management Facilities (SMF).

# Infoprint Server 2.1

## SMF6 accounting enhancements



- These fields in the SMF type 6 record contain information only if IP PrintWay extended mode (not basic mode) writes the record.
  - SMF6ACTL: The length of the accounting information in the SMF6ACCT field.
  - SMF6ACCT: Accounting information from the JOB JCL statement.
- Field SMF6FTL shows the level of the SMF record:  
Values:
  - 0 IP PrintWay basic mode wrote the record.
  - 1 IP PrintWay extended mode wrote the record. Fields SMF6ACTL and SMF6ACCT are not present.
  - 2 IP PrintWay extended mode wrote the record. Fields SMF6ACTL and SMF6ACCT are present.

# IBM Infoprint Transforms to AFP for z/OS, V2.3

# New Transforms to AFP release



- IBM Infoprint Transforms to AFP for z/OS, 5655-N60
- Runs on Infoprint Server V1R12 and later.

# Transforms to AFP V2.3

## New function



- Higher output resolutions for PCL2AFP and SAP2AFP
- Support for Mixed Object Document Content Architecture (MO:DCA) Interchange Set 3 (IS/3) compliant output for all three transforms.
- Several new options for SAP2AFP, including True Type fonts in Unicode output.
- PDF 1.7 now supported for PDF2AFP

# Transforms to AFP V2.3

## Higher output resolutions for PCL2AFP and SAP2AFP



- 720 and 1200 resolutions now available in addition to 240, 300, 480, and 600
- Examples
  - `pcl2afp -r 720 output.afp input.pcl`
  - `sap2afp -r 1200 output.afp input.sap`
- Note that the size of your output can increase considerably when using higher resolutions.



# Transforms to AFP V2.3 IS/3 Compliant output



- MO:DCA-P IS/3 defines a minimum level of AFP structured field support to allow for interoperability between products using the AFP data stream.
- Support for Mixed Object Document Content Architecture (MO:DCA) Interchange Set 3 (IS/3) compliant output for all transforms.
  - PCL2AFP, PS2AFP, PDF2AFP, SAP2AFP
- Examples:
  - `pcl2afp -l -o output.is3.afp input.pcl`
  - `lp -d printer -o "filter-options=-l" input.sap`

# SAP2AFP support for FS45 color



- New -a option specifies the IOCA function set to be used for OTF color image data.
  - -FS10 generates bi-level output. (Default)
  - -FS45 generates color IOCA FS45 output and is only supported for SAP OTF data streams.
- Example:
  - `sap2afp -a fs45 -o output.color.afp input.sap`

# Transforms to AFP V2.3

## SAP2AFP support for True Type/ OpenType fonts



- Use the `-f` option to request the use of True Type fonts in the output for Unicode SAP
  - `sap2afp -f -o output.truetype.afp input.sap`
- Default: full font names are used to reference True Type fonts in the output, which means that the product processing the AFP output must have access to the RAT (Resource Access Table) for the World Type fonts.
- You may also alter the `sap2afp` resource files so that True Type fonts are embedded in the output.  
Note that embedded fonts significantly increase the size of your output.

# Transforms to AFP V2.3

## SAP2AFP support for True Type/ OpenType fonts



- The World Type font library is shipped with z/OS V2R1.
- A subset of TrueType fonts from the WorldType 8.13 library will now be shipped as part of the z/OS Transforms to AFP V2.3 product when it is installed on z/OS V1.12 or 1.13.
- Default location: /usr/lpp/fonts/worldtype
- When IS/3-compliant output is requested for SAP2AFP (new option -I), the True Type option is automatically set on.

# Transforms to AFP V2.3

## Other enhancements



- SAP2AFP
  - New option to support printing ASCII data containing Unicode characters on a printer that does not support Unicode.
  - New option to support datastreams created with the SAPGOF\_ST\_CHARS: X entry from the SAP Unicode System set.
- PS2AFP/PDF2AFP
  - Improvements for robustness, correctness, and memory use.
  - Improved handling of fonts

# IBM Print Transforms from AFP Updates

# Maintenance level



- Several fixes and enhancements have been added over the last few months.
- We highly recommend that you move to latest maintenance level (OA42632).

# Transforms from AFP service



- OA39978  
New value added for AOP\_COLOR environment variable for AFP2PCL, for bi-level AFP color

## bilevel

Tells the transform to produce bi-level color PCL commands. Use this option if your AFP bi-level color input is printing incorrectly when using AOP\_COLOR->yes.

Tip: For best results when printing to monochrome and color printers, use a class with AOP\_COLOR->no for monochrome printers and a separate class with AOP\_COLOR->yes for color printers.



# Transforms from AFP service



- 0A39978

New environment variable added to deal with some PCL printers

## AOP\_LEGACY\_PRINTER

Indicates whether the transform is printing to an older printer that might not support the complete set of PCL 5c commands.

yes

The transform produces monochrome PCL output and turns off TIFF image scaling. Use this option if you are getting incorrect output when printing to older monochrome printers.

no

The printer supports the full set of PCL 5c commands.

Default: AOP\_LEGACY\_PRINTER → no

Example: environment={AOP\_LEGACY\_PRINTER → yes}

# Transforms from AFP service



- OA40033  
If several outline fonts are specified in the data or font mapping is used, the output generated by the AFPXPDF transform may be much larger than expected.
- The afpxpdf transform has been changed to allow base 14 outline fonts (Standard Adobe Type 1 Fonts) to be referenced by name. This can be done by specifying AOP\_OUTLINES -> base14 in the afpxpdf transform class in the aopxfd.conf file. If other non-base 14 fonts are specified in the input data, those fonts are embedded.
- Changes were made to correctly produce a viewable PDF document when AOP\_OUTLINES -> builtin is specified in the afpxpdf transform class in the aopxfd.conf file.

# Other APARs of interest

# Transforms to AFP V2.2 APAR OA42961/UA70262



- Apply this Transforms to AFP V2.2 PTF if you use the PS2AFP or PDF2AFP V2.2 transform.
- After applying z/OS UNIX Services apar OA42093, the following error can occur when the IBM Infoprint Server Transform PostScript to AFP is run:
  - AOP004E A system error occurred during processing.
  - (program:aopxfd)
  - AOP047E spawnp(ps2afpd) failed in XFormer::XFormer

# Infoprint Server APAR OA42886



- All Infoprint Server customers should get on the interested parties list for APAR OA42886.
- Abstract: UPDATE NEEDED FOR ICONV CONVERSION 1047 AND 850
- Unicode Services changed the translation for Line Feed in the IBM-1047 to IBM-850 (EBCDIC to ASCII) translation. Many Infoprint customers use these code pages, and correct ASCII line feeds are needed when IP PrintWay sends print jobs to ASCII printers or to a remote PSF.

# 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 (SA38-0691)
  - z/OS Infoprint Server Introduction (SA38-0692)
  - z/OS Infoprint Server Messages and Diagnosis (GA-32-0927)
  - z/OS Infoprint Server Operation and Administration (SA38-0693)
  - z/OS Infoprint Server Printer Inventory for PSF (SA38-0694)
  - z/OS Infoprint Server User's Guide (SA38-0695-00)
  - ABCs of z/OS System Programming Volume 7 (SG24-6987)
  - z/OS Migration

# Where to go for more information on System Logger



- System Programmer's Guide to: System Logger  
<http://www.redbooks.ibm.com/abstracts/sg246898.html>
- z/OS MVS Setting Up a Sysplex, in the z/OS V2.1 Information Center

# Thank you!