

IBM Printing Update and Latest Status

SHARE 2010
Session 6916

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Agenda

Upcoming Infoprint Server V1R12 preview

Infoprint Server V1R11 ServerPac and other updates

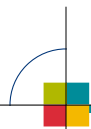
Transforms to AFP V2.2

Transforms from AFP updates

PSF V4.3 New Function

AFP Download Plus New Function and Performance Enhancements

ACIF Updates



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.

> IP PrintWay™

- Transmits output data sets from the JES2 or JES3 spool to remote printers in a TCP/IP network or SNA network.

> 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.

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Infoprint Server consists of several components that support printing on a z/OS system:

Printer Inventory Provides a single set of printer definitions that all the components of Infoprint Server use. The Printer Inventory also contains printer customization information that Print Services Facility (PSF) uses.

Print Interface Provides these functions: v A line printer daemon (LPD) that extends JES2 and JES3 print capabilities to users and application programs in a TCP/IP network environment. v Printing support for users and application programs in the z/OS UNIX System Services environment. v Printing support for users and application programs in the SAP R/3 environment. v Support for these Windows printing protocols: – Server Message Block (SMB) – Internet Printing Protocol (IPP)

z/OS UNIX System Services printing commands Let z/OS UNIX System Services environment applications submit print, query, and cancel requests to Print Interface.

NetSpool Directs VTAM application data to the JES spool without requiring application program changes.

IP PrintWay Directs JES2 or JES3 print data from z/OS to a printer in the TCP/IP or SNA network or to another system's spool. IP PrintWay uses the line printer requester/line printer daemon (LPR/LPD) protocol, direct socket printing, or the Internet Printing Protocol (IPP) to transmit data to printers in a TCP/IP network. IP PrintWay uses VTAM services to transmit data to printers in an SNA network. IP PrintWay uses the z/OS UNIX sendmail function to transmit data to one or more e-mail addresses.

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.

Infoprint Central Lets help desk operators and other authorized users or job submitters work with print jobs, printers, and NetSpool logical units (LUs); display printer definitions; and check system status. Infoprint Central is a Web-based print management system. 4 z/OS V1R8.0 Infoprint Server Introduction ||||

Infoprint Port Monitor for Windows Automatically transmits documents to Print Interface for printing, letting users use familiar print-submission methods from Windows applications. This client runs on Windows 2000, Windows Server 2003, and Windows XP. You can use the SMB or IPP printing protocol instead of the Infoprint Port Monitor for Windows. However, the Infoprint Port Monitor for Windows lets you specify such things as the number of job copies and whether to print on one or both sides of the paper. It can also improve performance.



What is Infoprint Server?

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.

Windows Client

Infoprint Port Monitor for Windows, which transmits documents and job attributes to Infoprint Server from Windows applications.

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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.

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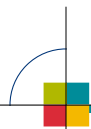
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Infoprint Server V1R12 Planned availability September 2010

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Enhanced support for multiple output data sets in an output group

Infoprint Central enhancements

IP PrintWay Response Notification exit

Workload prioritization



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Also, InfoPrint Server will be designed to prioritize spooling and printing for existing jobs higher than receiving new work. These changes are intended to help relieve constraints and reduce spool occupancy for InfoPrint Server jobs.



IP PrintWay extended mode will be able to process a greater number of documents in the same print job (JES output group).

Jobs that create a large number of output data sets (up to approximately 32,640 data sets, the maximum number of active jobs allowed by the job entry subsystem (JES2 or JES3)) in the same output group.

Infoprint Central will let authorized users see information about all the documents (output data sets) in an Infoprint Server print job, up to a limit specified by the administrator.

Why might you wish to limit the number of documents visible in Infoprint Central? Performance. Large numbers of entries take time to read from inventory and load into the browser.

New capabilities when you use the Infoprint Server job view in Infoprint Central

Display information about all documents in a print job.

For example, you will see the name and size of each document.

You can limit how many print jobs and documents Infoprint Central displays

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The AOPLIMIT environment variable limits how many objects Infoprint Central displays. This is useful if you want to avoid timeouts that can occur when Infoprint Central displays a large number of objects. In V1R12, you can specifically limit the number of print jobs and documents that Infoprint Central displays in the AOPLIMIT_JOBS and AOPLIMIT_DOCS environment variables.

AOPLIMIT_JOBS and AOPLIMIT_DOCS both default to 250. Possible values: 1-9999. These values both override AOPLIMIT, which sets the maximum number of objects that Infoprint Central displays after a search. This limit prevents the HTTP Server from timing out before Infoprint Central can display all objects that meet the users' search criteria.



IP PrintWay extended mode will support the same Response Notification exit that IP PrintWay basic mode supports.

The Response Notification exit will let you take an action based on the status of the transmission of an output data set to a printer. For example, the exit can send a message to the operator's console when a transmission to a printer fails.

Workload prioritization

Description: Infoprint Server will give higher priority to processing existing print jobs than to receiving new print jobs. This change is expected to improve throughput of existing print jobs.

Support for large workloads

Infoprint Server will support a greater number of jobs active in the system at one time, up to the maximum that JES currently allows.



Infoprint Server functions shipped with the V1R11 ServerPac

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LPD support for files larger than 2 GB

Available in z/OS V1R9 and higher with APAR OA28795/PTF UA49583 (Note that this is a PE APAR that is fixed in OA30768 UA51893.)

Infoprint Central performance improvement

Available in z/OS V1R11 with APAR OA28194/PTF UA49217

Infoprint Port Monitor V3.0

Available in z/OS V1R8 and higher with APAR OA28158/PTF UA46392.

AFP Download Plus support

Available on V1R8 and higher if you also use Print Services Facility for z/OS AFP Download Plus 4.2.0 or higher, with these APARs/PTFs: OA27068 UA44914 UA44915 Related PSF 4.2.0 for z/OS APARs: OA24124 and OA24125

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- The Infoprint Server Line Printer Daemon (LPD) can now receive files larger than 2 GB. To support files larger than 2 GB, the Infoprint Server API can now return a document size value greater than 2 GB. No migration actions required for LPD to receive files larger than 2 GB Migration actions required for any programs that use the Infoprint Server API, needed if files can be larger than 2 GB **and** the program that uses the API queries document size:
 - Exploitation of JES2 and JES3 APPC Jobname SSI function on JES V1R11 and higher to improve searches in Infoprint Central Allows Infoprint Central to filter jobs by transaction job names or job numbers, so that these job searches will be performed more efficiently Requires either JES3 at the R11 level or JES2 in z11 mode To activate z11 mode on JES2: \$ACTIVATE command
 - Version 3.0 of Infoprint Port Monitor for Windows runs on later Windows platforms and provides additional support:
Runs on Windows Server 2003, Windows Server 2008, Windows Vista (Business Edition, Enterprise Edition), and Windows XPSupports Windows Terminal Services (which allow users to access applications and data on a remote computer over a network) and Windows fast user switching (which allows users to switch between user accounts on a single PC without quitting applications and logging out). Note: Infoprint Port Monitor 2.0.6 is supported on Windows Server 2003 or Windows XP. It also runs on Windows 98, 2000, NT, and Millennium Edition (Me). However, IBM no longer supports the Infoprint Port Monitor on these systems because Microsoft no longer supports these operating systems, or 64-bit Windows systems.
 - Infoprint Central lets operators work with AFP Download Plus senders that are defined in the Printer Inventory. Operators can do a limited set of PSF printer actions: start, stop, change forms and other job-selection criteria, ping, view printer properties, and see messages from Infoprint Central. New PSF printer attributes in the Printer Inventory for AFP Download Plus PSF FSA definitions:
send-messages-on-failure=**all** | generic-only send-separator-pages=yes | **no**
Can be specified in both the Infoprint Server ISPF panels and the Infoprint Server Printer Inventory Definition Utility (PIDU)
- The Infoprint Server migration program (**aopmig**) supports the new attributes when it migrates PSF start up procedures to the Printer Inventory, and Infoprint Central displays the new attributes when you view information for an AFP Download Plus sender.



**V1R11 ServerPac LPD
Support for files larger than 2 GB**

The Infoprint Server Line Printer Daemon (LPD) can now receive files larger than 2 GB.

To support files larger than 2 GB, the Infoprint Server API can now return a document size value greater than 2 GB.

Available in z/OS V1R9 and higher with APAR OA28795/PTF UA49583 (Note that this is a PE APAR that is fixed in OA30768 UA51893.)

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This means that you can use a TCP/IP LPR command or the Infoprint Server Port Monitor for Windows client to print large files through Infoprint Server

Infoprint Server provides an Application Programming Interface (API) that lets you code C or C++ applications to do these functions:

- v Create an Infoprint Server print job on the z/OS Job Entry System (JES) spool.
- v Cancel an Infoprint Server print job.
- v Query the status of an Infoprint Server print job.
- v Query the status of all Infoprint Server print jobs for a printer.
- v Query information about all printers defined in the Infoprint Server Printer Inventory.
- v Connect to a transform daemon.



V1R11 ServerPac LPD Support for files larger than 2 GB

No migration actions required for LPD to receive files larger than 2 GB

Migration actions required for any programs that use the Infoprint Server API, needed if files can be larger than 2 GB and the program that uses the API queries document size:

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dlsym(): obtains the address of a symbol defined within an object made accessible through a dlopen() call.

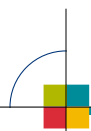
For information about dlsym(), see z/OS XL C/C++ Run-Time Library ReferenceXL C/C++ Run-Time Library Reference (SA22-7821).

Infoprint Server provides an Application Programming Interface (API) that lets you code C or C++ applications to do these functions:

- v Create an Infoprint Server print job on the z/OS Job Entry System (JES) spool.
- v Cancel an Infoprint Server print job.
- v Query the status of an Infoprint Server print job.
- v Query the status of all Infoprint Server print jobs for a printer.
- v Query information about all printers defined in the Infoprint Server Printer Inventory.
- v Connect to a transform daemon.

1. Use the dlsym() function to determine if the GetAPIVersionNumber function is in aopapi.dll.

2. If the GetAPIVersionNumber function is not found, the DocumentInfo structure is at API Version 0. Get the size of the document from this field in DocumentInfo:size.



Infoprint Central enhancement for job name searches

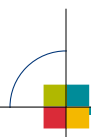
Exploitation of JES2 and JES3 APPC Jobname SSI function on JES V1R11 and higher to improve searches in Infoprint Central

Allows Infoprint Central to filter jobs by transaction job names or job numbers, so that these job searches will be performed more efficiently

**Requires either JES3 at the R11 level or JES2 in z11 mode
To activate z11 mode on JES2: \$ACTIVATE command**

Available in z/OS V1R11 with APAR OA28194/PTF UA49217

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V1R11 ServerPac Infoprint Port Monitor V3.0

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Version 3.0 of Infoprint Port Monitor for Windows runs on later Windows platforms and provides additional support:

Runs on Windows Server 2003, Windows Server 2008, Windows Vista (Business Edition, Enterprise Edition), and Windows XP

Supports Windows Terminal Services (which allow users to access applications and data on a remote computer over a network) and Windows fast user switching (which allows users to switch between user accounts on a single PC without quitting applications and logging out).

Note: Infoprint Port Monitor 2.0.6 is supported on Windows Server 2003 or Windows XP. It also runs on Windows 98, 2000, NT, and Millennium Edition (Me). However, IBM no longer supports the Infoprint Port Monitor on these systems because Microsoft no longer supports these operating systems, or 64-bit Windows systems.

Available in z/OS V1R8 and higher with APAR OA28158/PTF UA46392.

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Remote Desktop Services, formerly known as Terminal Services, is one of the components of Microsoft Windows (both server and client versions) that allows a user to access applications and data on a remote computer over a network. Terminal Services is Microsoft's implementation of thin-client terminal server computing, where Windows applications, or even the entire desktop of the computer running terminal services, are made accessible to a remote client machine.

Infoprint Port Monitor for Windows

Automatically transmits documents to Print Interface for printing, letting users use familiar print-submission methods from Windows applications. You can use the SMB or IPP printing protocol instead of the Infoprint Port Monitor for Windows. However, the Infoprint Port Monitor for Windows lets you specify such things as the number of job copies and whether to print on one or both sides of the paper. It can also improve performance.

The Infoprint Server Windows client, which consists of the IBM Infoprint Port Monitor. The Infoprint Port Monitor is software that runs on a Windows workstation. It lets you print files on z/OS printers just like you print files on local Windows printers. You can submit the files from any Windows application that has a printing function.

Download Infoprint Port Monitor V3.0 to one of the supported Windows systems from one of these locations:

Download from Web at: www.ibm.com

Use a file transfer program (such as ftp), to download (in binary) file `/usr/lpp/Printsrv/win/En_US/aopwin.msi`.

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V1R11 ServerPac AFP Download Plus support

Infoprint Server administrators can now create Print Services Facility (PSF) functional subsystem (FSS) and functional subsystem application (FSA) definitions in the Printer Inventory for AFP Download Plus, using the new ISPF panel for AFP Download Plus FSA definitions

The Infoprint Server migration program (aopmig) can migrate AFP Download Plus configuration information from PSF startup procedures to the Printer Inventory.

Infoprint Central lets operators work with AFP Download Plus senders that are defined in the Printer Inventory. Operators can do a limited set of PSF printer actions: start, stop, change forms and other job-selection criteria, ping, view printer properties, and see messages from Infoprint Central.

Available in z/OS V1R8 and higher with these APARs/PTFs:

APAR OA22697/PTF UA37619

APAR OA22673/PTF UA38345

APAR OA23077/PTF UA39898



V1R11 ServerPac AFP Download Plus support

New PSF printer attributes in the Printer Inventory for AFP Download Plus PSF FSA definitions:

send-messages-on-failure=all | generic-only

send-separator-pages=yes | no

Can be specified in both the Infoprint Server ISPF panels and the Infoprint Server Printer Inventory Definition Utility (PIDU)

The Infoprint Server migration program (aopmig) supports the new attributes when it migrates PSF start up procedures to the Printer Inventory, and Infoprint Central displays the new attributes when you view information for an AFP Download Plus sender.

Available on V1R8 and higher if you also use Print Services Facility for z/OS AFP Download Plus 4.2.0 or higher, with these APARs/PTFs:

OA27068 UA44914 UA44915

Related PSF 4.2.0 for z/OS APARs: OA24124 and OA24125

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New PSF printer attributes in the Printer Inventory when you create or modify a PSF functional subsystem application (FSA) definition for AFP Download Plus:

send-messages-on-failure

This **single-valued** attribute indicates whether PSF sends all messages to the AFP Download Plus receiver when it cannot send an output data set because of an error or because the operator canceled processing of the data set. The receiver can print the messages to help diagnose errors detected on the sending system, such as data stream errors.

Allowed values: You can enter one of these fixed values:

all PSF sends all messages to the receiver in a message data set in MO:DCA-P format (default).

generic-only

PSF sends a generic message in line data format to the receiver to indicate that the output data was not sent.

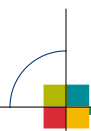
send-separator-pages

This **single-valued** attribute indicates whether PSF sends the job and data set separator pages for each output data set to the AFP Download Plus receiver.

Allowed values: You can enter one of these fixed values:

yes PSF sends separator pages to the receiver.

no PSF does not send separator pages to the receiver (default).



V1R11 ServerPac Printer Inventory for PSF

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The "Printer Inventory for PSF" function lets PSF customers who have not purchased an Infoprint Server license use the Infoprint Server Printer Inventory.

PSF administrators can now create PSF functional subsystem (FSS) and functional subsystem application (FSA) definitions in the Printer Inventory using the Infoprint Server ISPF panels or the Printer Inventory Definition Utility (PIDU) program, and can use the Infoprint Server migration program to migrate printer configuration information from PSF startup procedures to the Printer Inventory.

Available for z/OS V1R8 and higher with these APARs/PTFs:

APAR OA22697/PTF UA37619

APAR OA22673/PTF UA38345

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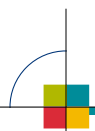
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Other notable Infoprint Server APARs

OA30768 UA51893

Excessive CPU consumption by Infoprint Server daemon AOPD.

After applying PTF UA49583, sometimes AOPD starts using an abnormal amount of CPU time. This high CPU consumption occurs when most of the jobs on the spool are in a "failed" state. This can occur when print jobs are routed to a printer that is offline.

Fix for PE APAR OA28795

OA30162 UA51488

Support for IP PrintWay LPR protocol sending jobs > 2GB

OA29385 UA48890

Migration to XML Toolkit 1.9 (HXML190) for Infoprint Central, since XML Toolkit 1.8 is not supported on z/OS 1.11.

XML Toolkit 1.9 is supported on z/OS 1.8 - z/OS 1.11.

Note: starting in z/OS 1.10, the XML Toolkit will no longer contain the previous two levels.

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USERS AFFECTED: Users of z/OS Infoprint Server V1R8 and higher using IP PrintWay extended mode to send jobs to Hewlett Packard (HP) Printer Job Language (PJJ) printers.

PROBLEM DESCRIPTION: The PJJ job name IP PrintWay extended mode sends to PJJ printers does not identify the original z/OS sysout data set or the user who submitted the z/OS job.

The PJJ job name should include the fully qualified sysout data set name of the print job being sent to a PJJ printer. This would make output identification easier for customers when many users print on the same printer. A readable time stamp would also help. The current timestamp is in hex.

COMMENTS:Enhanced IP PrintWay extended mode to send a more helpful PJJ job name when either "Record pages printed for accounting" or "Restart printing after last successful page" is selected in the Protocol section of the printer definition. These selections tell IP PrintWay to send the print file as a PJJ job to the printer. The PJJ job name that IP PrintWay extended mode sends to the PJJ printer has this format:

AOP

where:

AOP Indicates IP PrintWay sent the file The z/OS JES sysout data set name of the file. Usually this name includes system name, user id, job name, job id, data set id, and the short data set name (or ?).

The number of the copy. For example,

1 = first copy.

Date and time in the country locale.

The timestamp is truncated if the full job name would exceed the 80 characters allowed in a PJJ job name.

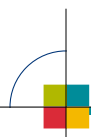
Sample job names are:

1. AOP BLDPDEVE.YYUND.YYUND.STC18767.D0000103.TESTING 1

08/27/09 12:39:37 PM

2. AOP BLDPDEVE.YYUND.SIMPUS.JOB18869.D0000101.? 1

08/27/09 12:44:33 PM



Other notable Infoprint Server APARs

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OA29744 UA50069

Add JES JOBNAME to Infoprint Server PJJ JOBNAME when either "Record pages printed for accounting" or "Restart printing after last successful page" is selected in the Protocol section of the printer definition, so that the original sysout data set and user who submitted the job are now identified, along with a more readable time stamp.

Makes output identification easier when many users print on the same printer.

Example:

**AOP BLDPDEVE.YYUND.YYUND.STC18767.D0000103.TESTING 1
08/27/09 12:39:37 PM**

V1R8 and higher

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AOP Indicates IP PrintWay sent the file The z/OS JES sysout data set name of the file. Usually this name includes system name, user id, job name, job id, data set id, and the short data set name (or ?).

The number of the copy. For example,

1 = first copy.

Date and time in the country locale.

The timestamp is truncated if the full job name would exceed the 80 characters allowed in a PJJ job name.

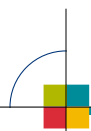
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08/27/09 12:44:33 PM



Other notable Infoprint Server APARs

OA28720 UA47546

Migrate Infoprint Server to use to Java V6 for Infoprint Central or the IPPD (aopipdpx) daemon, because Java 1.4 was withdrawn from marketing. Infoprint Server now requires:

IBM 31-bit SDK for z/OS, Java 2 Technology Edition, V5 (5655-N98) (SDK5)

IBM 31-bit SDK for z/OS, Java Technology Edition, V6 (5655-R31) (SDK6)

Migration required:

No action required if you have SDK5 or SDK6 installed in the default location, and do not specify JAVA_HOME in the aopstart EXEC or the HTTP Server environment file (httpd.envvars).

If JAVA_HOME is specified and points to the SDK1.4 directory:

Edit the aopstart EXEC to specify the directory where you installed the SDK5 or SDK6 files. Then stop and restart the IPP Server daemon (aopipdpx).

Edit the httpd.envvars file to specify the directory where you installed SDK5 or SDK6 files. Then stop and restart the Infoprint Central daemon (aopssid).

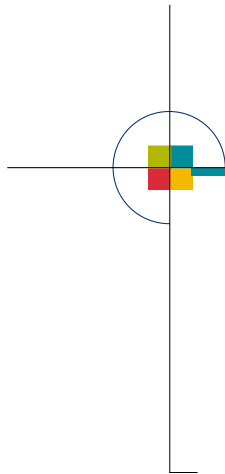
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Up until z/OS 1.9 the XML Toolkit contained the previous 2 levels also. Apparently this is no longer true starting in z/OS 1.10.

From the Program Directory: "As of Toolkit V1.10.0, previous Toolkit releases are no longer included in the current Toolkit package. This change is to keep the package at a reasonable size and to simplify the installation process. To acquire a copy of a previous Toolkit release, you have to order the V1.9.0 Toolkit package, which includes Toolkit V1.8.0 and V1.7.0. Toolkit is based on open source software from the Apache Software Foundation that does not provide upward compatibility."

Java 1.4 was withdrawn from marketing.

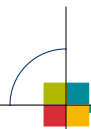


IBM Infoprint Transforms for z/OS

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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



**Exciting new function:
Infoprint XT Extender**

**OA30744 UA50958
New pdxtcluster command**

Provides an automated method of controlling the associations between printer tray numbers and Xerox cluster names, STOCKSETs and FEED commands.

Xerox LPS printers each have one cluster data base, but pdxtcluster lets you create and modify as many reformatted cluster data bases as you need for your entire cut sheet environment.



Exciting new function: Infoprint XT Extender

OA30744 UA50958

Input exit aixlxie can now convert a variety of input data formats to the NFS format (2-byte length fields) that Xerox LPS printers and Infoprint XT expect for online mode jobs.

Barr Systems formats (SPOOL, S370 / METABAR2 / COMPUSET and METABAR3)

RDW / BDW

CRLF-delimited records.

New xconsecutivedjde parameter

Xerox LPS documentation says that when consecutive, END;-terminated DJDE packets are encountered in a data stream, the LPS will only process the first packet. However, some more recent Xerox printers do not ignore subsequent DJDEs. The xconsecutivedjde parameter allows the XT Extender to emulate this behavior.



Exciting new function: Infoprint XT Extender

OA29460: JSL Metrics Compiler

Enables print environment control resource updates

Provides functionality when users no longer have access to Xerox PDL or xjdc compilers

Converts JSL source files into reformatted JDLs, PDEs, CMEs, STKs, etc.

Infoprint XT uses these reformatted resources in data stream conversions

New pdxtpdl command

New parameters, modeled after existing pdxtloadres command

New diagnostic messages

Provides options that you can use to control how and where Infoprint XT creates the reformatted resource files

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JSL Metrics Compiler: the Infoprint XT **pdxtpdl** command compiles Xerox JSL files and creates reformatted environment control resources. The command provides options that you can use to control how and where Infoprint XT creates the reformatted resource files. After **pdxtpdl** compiles the JSL resources, you do not have to load any of the associated resource files with the **pdxloadres** command. Infoprint XT automatically uses the compiled resources that **pdxtpdl** creates when it processed jobs that require the resources.

This is an enhancement of extraordinary importance. During the migration period from Xerox to AFP (which can last several years), many Infoprint XT customers continue to develop Xerox-oriented applications, and therefore have a need to continually update their JSLs and the binary resources that are created from them by the Xerox PDL or xjdc compilers (JDLs, PDEs, CMEs, etc.). However, these compilers are resident on Xerox printers. If the customer no longer has a Xerox printer and therefore has no access to a PDL or xjdc compiler, they would have no way to update their JSLs.

Likewise, some Infoprint XT installations occur in environments where other transform solutions have already displaced the Xerox printers and compilers [e.g., Océ or Solimar]. In these environments, there may not be any binary JDLs, CMEs, PDEs, etc.; only JSLs.

The **pdxtpdl** command comes to the rescue in both of these situations, producing reformatted print environment control resources from JSLs and enabling Infoprint XT data stream conversions that use these resources.

OA29460: JSL Metrics Compiler

The `pdxtpd` command produces reformatted print environment control resources from JSLs and enables Infoprint XT data stream conversions that use these resources. This means that during the migration period from Xerox to AFP, you can continue to develop Xerox-oriented applications, and use the `pdxtpd` command to continue updating your JSLs and the binary resources that are created from them by the Xerox PDL or `xjdc` compilers (JDLs, PDEs, CMEs, etc.), without requiring compilers that are resident on Xerox printers.

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JSL Metrics Compiler: the Infoprint XT **`pdxtpd`** command compiles Xerox JSL files and creates reformatted environment control resources. The command provides options that you can use to control how and where Infoprint XT creates the reformatted resource files. After **`pdxtpd`** compiles the JSL resources, you do not have to load any of the associated resource files with the **`pdxtloadres`** command. Infoprint XT automatically uses the compiled resources that **`pdxtpd`** creates when it processed jobs that require the resources.

This is an enhancement of extraordinary importance. During the migration period from Xerox to AFP (which can last several years), many Infoprint XT customers continue to develop Xerox-oriented applications, and therefore have a need to continually update their JSLs and the binary resources that are created from them by the Xerox PDL or `xjdc` compilers (JDLs, PDEs, CMEs, etc.). However, these compilers are resident on Xerox printers. If the customer no longer has a Xerox printer and therefore has no access to a PDL or `xjdc` compiler, they would have no way to update their JSLs.

Likewise, some Infoprint XT installations occur in environments where other transform solutions have already displaced the Xerox printers and compilers [e.g., Océ or Solimar]. In these environments, there may not be any binary JDLs, CMEs, PDEs, etc.; only JSLs.

The **`pdxtpd`** command comes to the rescue in both of these situations, producing reformatted print environment control resources from JSLs and enabling Infoprint XT data stream conversions that use these resources.

Exciting new function: Infoprint XT Extender, cont'd

OA29460: Support MO:DCA media types

New **xmediatypes** parameter on the **pdctx2afp** command

Correlates Xerox input tray numbers 1 - 8 with MO:DCA media types

Media names

Component IDs

Output AFP can specify media types rather than tray numbers

Enhances device independence in cut sheet printing, and greatly eases the migration from a Xerox cut sheet to and AFP cut sheet environment.

New **xbinerror** parameter on the **pdctx2afp** command

Provides control via inline FORMDEF media error instruction

xbinerror=ignore: no media error instruction (default)

xbinerror=stop: media error instruction: if specified media not found,

Printing stops

Job held for resubmission

xbinerror=continue: media error instruction: if specified media not found,

Printing continues

Use printer default input media

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Support for MO:DCA media types, improving Infoprint XT's flexibility in cut sheet environments. You can now instruct Infoprint XT to associate Xerox input bin

numbers with MO:DCA media names or component IDs using the **xmediatypes** and **xbinerror** parameters.

In conjunction with the **pdxtcluster** command, media types support makes Infoprint XT a very powerful tool for migrating from Xerox cut sheet to AFP cut sheet environments.



**Exciting new function:
Infoprint XT Extender, cont'd**

OA29460: Support BATCH mode images

Adds support for individual BATCH mode inline images

OA28722: Improved return codes with Infoprint Server

Error handling logic corrected to prevent erroneous nonzero return codes for otherwise successful jobs

Infoprint XT now passes the actual data stream converter return code back to Infoprint Server for all jobs, rather than a meaningless value



Exciting new function: Infoprint XT Extender

OA28430: Enhanced Xerox font decryption

Detects Xerox font encryption with greater accuracy

New parameters

pdxloadres

convert Xerox FNTs

-d auto | all | none

auto: automatically detect font encryption (default)

all: force decryption of all fonts specified by the -n parameter

none: suppress attempted decryption of specified fonts

pdx2afp

convert inline Xerox FNTs in FILE DJDE jobs

xdecrypt=auto | all | none

auto: automatically detect font encryption (default)

all: force decryption of all inline fonts in job

none: suppress attempted decryption of any inline fonts in job

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Improved Xerox font decryption facility: users can control font decryption during resource conversion with the **-d** parameter of the **pdxloadres** command, and during data stream conversion with the **xdecrypt** parameter of the **pdx2afp** data stream converter command.

This enhancement represents an **extremely substantial** improvement to XT's ability to detect encryption in Xerox fonts. This had been a problem for a very long time.



**Exciting new function:
InfoPrint XT Extender, cont'd**

**PTF UA48362 contains changes for OA29460, OA28722,
OA28430**

More information

**AIX documentation for new functions, parameters and
messages has been updated and is also applicable to z/OS:**

<ftp://ftp.software.ibm.com/printers/products/pdxt/fixes>

InfoPrint XT for AIX: Installation Guide and User's Guide:

XT_AIX_Inst_UG_2007_12.pdf

InfoPrint XT for AIX Product Update 14 Release Notes:

PU14_release_notes_en_aix.pdf

z/OS documentation to be updated

OA30483

Improved processing of images with invalid IOCA data

Two new environment variables:

**AOP_FAIL_ON_IMAGE_ERROR = yes no retrycont
retryfail**

AOP_ASSUME_RIDIC_UNPAD = yes no
**Tells the transform whether or not to ignore the
RECID setting for a G4 MMR image, and
indiscriminately decode as unpadded.**

AOP_FAIL_ON_IMAGE_ERROR = yes no retrycont retryfail

YES - if the transform cannot decode an image it will give an error message and stop processing the document.

NO - if the transform cannot decode an image it will give an error message, stop processing the image and continue with the next MO:DCA statement.

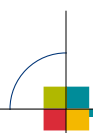
RETRYCONT - if the transform cannot decode a G4 MMR (Modified Modified READ (ITU-TSS T.6 Group 4 two-dimensional coding standard for facsimile) image it gives an error message, tries to flip the UNPAD bits and try again. If it still fails it will give an error message, stop processing the image and continue with the next MO:DCA statement.

RETRYFAIL - if the transform cannot decode a G4 MMR (Modified Modified READ (ITU-TSS T.6 Group 4 two-dimensional coding standard for facsimile) image it gives an error message, tries to flip the UNPAD bits and try again. If it still fails it will give an error message and stop processing the document.

AOP_ASSUME_RIDIC_UNPAD = yes no

YES - causes the transform to ignore the RECID setting for a G4 MMR (Modified Modified READ (ITU-TSS T.6 Group 4 two-dimensional coding standard for facsimile) image and indiscriminately decode as unpadded.

NO - decode the G4 MMR (Modified Modified READ (ITU-TSS T.6 Group 4 two-dimensional coding standard for facsimile) image as specified in the RECID.



IBM Infoprint Transforms to AFP V2.2 for z/OS

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Available on z/OS Version 1 Release 9 or later

SAP2AFP

Now supports most of SAPGOF 6.10.
Infoprint Server managed transform
Unicode support

Postscript (PS) and PDF to AFP

Several functional enhancements

PCL2AFP

Enhancements are mainly quality related, providing a more
reliable and robust transform.
New command line options

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PS2AFP: Support for some PDF 1.7 features

Error processing improvements

Quality improvements in areas of patterns, shading, and image filtering

Improvements to overprint and spot color support in documents with transparency

Proper handling of PDF-specific text rendering modes

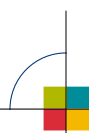
Improved handling of CJK text

-m setting default now 246M instead of 32M

New directory paths /usr/lpp/Printsrv/ps2afpv2.2

PCL2AFP: Addition of -l, -w, -x, -y command line options to match PS/PDF2AFP Default transform directory and resource path

New directory paths: /usr/lpp/Printsrv/pcl2afpv2.2



**Addition of -l, -w, -x, -y command line options to match PS/
PDF2AFP**

**V2.1: AOP_PAGE_HEIGHT, AOP_PAGE_WIDTH,
AOP_HORIZONTAL_MARGINS, AOP_VERTICAL_MARGINS in
aopxfd.conf**

Default transform directory and resource path

**Resources now in /usr/lpp/Printsrv/pcl2afpv2.2
(V2.1: /usr/lpp/Printsrv/pcl2afpv2)**

**AOP_RESOURCE_PATH = /usr/lpp/Printsrv/pcl2afpv2.2/fonts
(V2.1: /usr/lpp/Printsrv/pcl2afpv2/fonts)**

Service rollups and more reliable and robust transform

The PCL2AFP Transform will provide transform users the ability to specify length, width, resolution, and margin info in the -l, -w, -r, -x, and -y command line options for each transform job as they do for the PS/PDF2AFP transform. This change eliminates the need to specify them in the transform configuration file for the entire transform instance.

Note that command line options override environment variables specified in the configuration file.



Support for some PDF 1.7 features

Error processing improvements

**Quality improvements in areas of patterns,
shading, and image filtering**

**Improvements to overprint and spot color
support in documents with transparency**

**Proper handling of PDF-specific text rendering
modes**

Improved handling of CJK text

-m setting default now 246M instead of 32M



Default transform directory and resource path

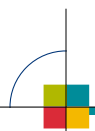
**Resources now in /usr/lpp/Printsrv/ps2afpv2.2
(V2.1: /usr/lpp/Printsrv/ps2afpv2)**

AOP_RESOURCE_PATH =

**/usr/lpp/Printsrv/ps2afpv2.2/lib/:
/usr/lpp/Printsrv/ps2afpv2.2/Resource/Init:
/usr/lpp/Printsrv/ps2afpv2.2/Resource**

(V2.1:

**/usr/lpp/Printsrv/ps2afpv2/lib/:
/usr/lpp/Printsrv/ps2afpv2/Resource/:
/usr/lpp/Printsrv/ps2afpv2/fonts/)**



New SAPGOF level supported (most of SAPGOF 6.10)

Boxes and shading commands

SAP Smart Forms (the successor to SAPscript)

New color-related commands, such as CB (Color Box) and CT (Color Text)

Partial long barcode support

Support for Korean, Traditional Chinese, Simplified Chinese, and Cyrillic

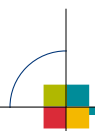
Unicode support for OTF data streams

Infoprint Server has been changed (APAR OA30236/PTF UA50439 and APAR OA31076/PTF UA51122)

Support for sniffing of SAPGOF OTF Unicode datastreams

New aopxfd.conf transform configuration file sample

OA30236 should only be applied with V2.2 transforms. If it is applied with V2.1 transforms and OTF Unicode data streams are submitted, IPS will accept them as SAP and the transform will end with errors if called for SAP datastreams.



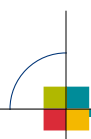
SAP2AFP Now an Infoprint Server-managed

Transforms class (-c) and tracing (-T) options apply, along with managed transform environment variables

Error handling will mirror PCL/PS/PDF2AFP transforms, with temp file and stderr file in /var/Printsrv/xfd
e.g., /var/Printsrv/xfd/sap2afp.0.stderr, /var/Printsrv/xfd/sap2afp.0.d

New aopxfd.conf sample will be shipped in apar OA31076

```
#-----  
# SAP -> AFP:  
#-----  
transform sap2afp  
  start-command = sap2afpd  
  min-active = 0  
  max-active = 2  
  maximum-idle-time = 300 # 5 minutes  
  environment = {  
    _BPX_JOBNAME -> SAP2AFPD  
  }  
;
```



New environment variables for SAP2AFP

AOP_FAIL_ON_ERROR

AOP_RECLEN

AOP_SAP2AFP_ICU

Directory that contains all of the SAP to AFP transform double-byte conversion tables.

Default: /usr/lpp/Printsrv/sap2afpv2.2/icu

Other Infoprint Server environment variables that apply to the transforms, such as **_CEE_RUNOPTS**

Unchanged environment variable for SAP2AFP

AOP_SAP2AFP_RESOURCES

Directory that contains all of the SAP to AFP transform resources, such as configuration files.

Default: /usr/lpp/Printsrv/sap2afpv2.2/res

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AOP_FAIL_ON_ERROR

Specifies whether the transform stops processing when an error occurs during the transform.

Valid values are: yes The transform stops processing when any error occurs during the transform and does not create an output document. The return code from the transform is >0. The transform stderr file contains message AOP2501E and the transform error messages. no The transform continues processing when certain types of errors occur during the transform, such as data stream errors. If possible, the transform creates an output document that contains the transform error messages. The return code from the transform is 0. Default: AOP_FAIL_ON_ERROR

-> no Example: environment = {AOP_FAIL_ON_ERROR -> yes}

AOP_RECLEN

The length of the output records that the transform creates. Valid values are from 8 to 32, in units of 1,000 bytes. For example, 8 = 8,000. Tip: The default value is suitable for most installations. However, a larger record length might improve performance. Default: AOP_RECLEN -> 8 Example: environment = {AOP_RECLEN -> 16}

AOPTRACEDIR

The full path name of the directory where the transform writes trace 68 IBM Infoprint Transforms to AFP V2.2 for z/OS information. You can specify the same directory for different transform classes. The name of the trace file identifies the transform and transform class, and contains a timestamp.

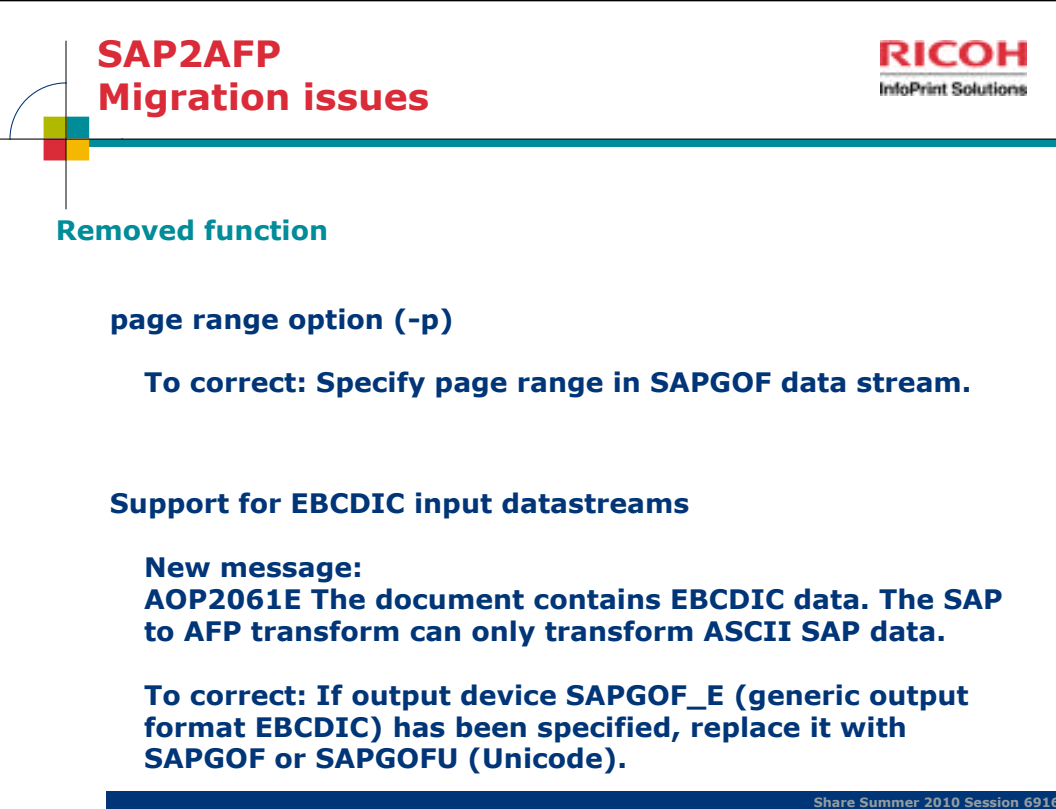
This directory must already exist. If the directory does not exist, the transform writes trace information to the transform's stderr file. For information about how to find the stderr file, see "Finding the transform stderr file" on page 101. Default: AOPTRACEDIR -> /var/Printsrv/trace

Examples: environment = {AOPTRACEDIR -> /var/Printsrv/xfd} environment = {AOPTRACEDIR -> .}

AOPTRACEON

Turns tracing on. The transform traces all transform requests that use this transform class. Any value turns tracing on. To turn tracing off, do not specify this environment variable. Specify this environment variable only if IBM directs you to do so. Tracing can adversely affect performance.

Default: Tracing is turned off.



The slide features a header with the title "SAP2AFP Migration issues" in red and black text, and the RICOH InfoPrint Solutions logo in the top right corner. A decorative graphic of overlapping colored squares is on the left. The main content is centered and includes a section on "Removed function" with a sub-section for the "page range option (-p)" and its correction. Another section discusses "Support for EBCDIC input datastreams" with a "New message" and its correction. A footer at the bottom right reads "Share Summer 2010 Session 6916".

SAP2AFP Migration issues

RICOH
InfoPrint Solutions

Removed function

page range option (-p)

To correct: Specify page range in SAPGOF data stream.

Support for EBCDIC input datastreams

New message:
AOP2061E The document contains EBCDIC data. The SAP to AFP transform can only transform ASCII SAP data.

To correct: If output device SAPGOF_E (generic output format EBCDIC) has been specified, replace it with SAPGOF or SAPGOFU (Unicode).

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-p is a deprecated parameter that is necessary only for very old versions of the SAPGOF data stream, because newer versions of SAPGOF support selection of a page range at the device level. Because this parameter generally unnecessary, and because it appears to be used infrequently, if at all, in the field, it will no longer be supported for the z/OS transform.

Although it is unlikely that the -p parameter is currently being specified as a filter option in Printer Inventory printer definitions, it must be removed if so.

If the -p parameter is specified as an option, the current messages issued for invalid options specified as input to the transform will be issued. The messages received will depend on the method by which the transform was invoked.

If it was invoked from the command line, the following Unix System Services and Infoprint Server messages will be received:

FSUMA930 /proj/opie/xf1/bin/sap2afp: Unknown option -p
2998 Usage: sap2afp [-o outputfile]
[-r resolution] [-s] [inputfile...]



SAP2AFP Resource file (.tab) updates

**AOP_SAP2AFP_RESOURCES= /usr/lpp/Printsrv/
sap2afpv2.2/res
(V2.1: /usr/lpp/Printsrv/sap2afp)**

**ASCII encoding
All .tab files**

**Decimal instead of hex
00000000.tab 11000000.tab 40010000.tab 40040000.tab
defcp.tab defcp.tab.japan**

**New ICU conversion files are called for double-byte mappings
80000000.tab, 83000000.tab, 84000000.tab, 85000000.tab,
86000000.tab**

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-Very few, if any, SAP2AFP customers have modified the xxxx0000.tab files. Since keeping the z/OS versions of these files in hex would require z/OS-specific code in the common code base, the new z/OS .tab files will be mapped in decimal. Also, there will be a slight difference in output in some cases because of the few differences in fonts.

-The font differences are slight and the same character set is generally used, but they do involve different fonts with different names.

-F1SAP appears to have been added to the AIX/NT transform in order to allow for a larger number of medium maps. Combinations of up to 5 input bins are supported in F1SAP in simplex, duplex and tumble duplex mode using either portrait or landscape. F1SAP is documented in the *Infoprint Manager: SAP R/3 Planning and Configuration Guide*, and more information can also be found here: <http://stuff.mit.edu/afs/athena/astaff/project/ipm/doc/sap.pdf>

-**uconv** uses a different set of tables than **iconv**; it supports the same code pages, but the format is different. Because we will be replacing iconv with uconv, new output code page conversion tables and compiled conversion tables used for double-byte fonts will be shipped. The specific binary conversion tables used by the SAP2AFP transform, as well as any conversion tables that have been altered (for example, to support user-defined code pages, or to map codepoints in an installation-specific manner), will need to be replaced with conversion tables in the uconv format. Although it is unlikely that customers are altering conversion tables, we will be providing a **makeconv** utility that will allow them to do so, as they're currently able to do with iconv.

-01200000.tab has been removed – EBCDIC encoding

Multibyte conversion tables are now in a separate directory
/usr/lpp/Printsrv/sap2afpv2.2/icu

New font families found in fonts.tab configuration file
(predefined to SAP R/3)

CNSONG Chinese

KPSAMMUL Korean

TWSONG Traditional Chinese (Taiwan)

CNHEI Simplified Chinese

CNKAI Simplified Chinese

COURCYR Cyrillic

HELVCYR Cyrillic

TIMECYR Cyrillic



New system code pages

8300 Traditional Chinese (83000000.tab)

8400 Simplified Chinese (84000000.tab)

8500 Korean (85000000.tab)

1500 Cyrillic (15000000.tab)

xxxx0000.tab maps SAP code pages to AFP code pages.

**Unicode SAP2AFP OTF datastreams now sniffed by Infoprint Server
OA30236 ifreq'd in new release**

How to transform a Unicode datastream

**Set Unicode encoding in syscp file (/usr/lpp/Printsrv/
sap2afpv2.2/res/syscp)**

Values:

4010 non-Unicode encoding

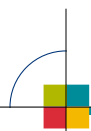
4102 UTF-16BE

4103 UTF-16LE

Copy Unicode resource files

defcp.tab.unicode -> defcp.tab

fonts.tab.unicode -> fonts.tab



SAP2AFP Multibyte conversion tables

Source files in `/usr/lpp/Printsrv/sap2afpv2.2/icu` directory define the mappings for multibyte code sets

ibm-1399-sap2afp.ucm, icudt34b_ibm-1399-sap2afp.cnv
(Japanese)

ibm-937-sap2afp.ucm, icudt34b_ibm-937-sap2afp.cnv
(Traditional Chinese)

ibm-1388-sap2afp.ucm, icudt34b_ibm-1388-sap2afp.cnv
(Chinese)

ibm-933-sap2afp.ucm, icudt34b_ibm-933-sap2afp.cnv (Korean)

ibm-939-sap2afp.ucm, icudt34b_ibm-939-sap2afp.cnv (Japanese)

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- To transform and print SAP R/3 data streams that contain multibyte special characters, you might need to customize the conversion tables for the code pages that the SAP to AFP transform uses.

- Japanese: `ibm-939-sap2afp.ucm`

Japanese: `ibm-1399-sap2afp.ucm`

Korean: `ibm-933-sap2afp.ucm`

Simplified Chinese: `ibm-1388-sap2afp.ucm`

Traditional Chinese: `ibm-937-sap2afp.ucm`

- All `.cnv` conversion tables must be in the same directory. However, if you do not want to customize some files, you can use symbolic links to the `/usr/lpp/Printsrv/sap2afpv2.2/icu` directory for those files.



SAP2AFP Customizing multibyte conversion

To customize conversion tables:

Create a new directory for the conversion tables so that you don't overwrite the originals.

Copy all files from directory /usr/lpp/Printsrv/sap2afpv2.2/icu to the new directory or use symbolic links.

Change to the new directory.
`cd /etc/Printsrv/sap2afpv2.2/icu`

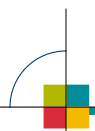
Edit the .ucm file and save it.

Use the z/OS UNIX makeconv command to compile the .ucm file and create a .cnv file.
`makeconv -p ICUDATA ibm-1388-sap2afp.ucm`

Change the access permissions of the .cnv file to give everyone permission to read the file.
`chmod 644 ibm-1388-sap2afp.cnv`

Specify the new directory that contains the conversion tables in the AOP_SAP2AFP_ICU environment variable in the SAP to AFP transform entry in aopxfd.conf

Restart the Infoprint Server Transform Manager (aopstop, aopstart).



SAP2AFP Important Migration notes

Removed support for EBCDIC input data streams

**Change tool that generates SAP datastream to use output device
SAPGOF**

**Worst case: convert EBCDIC SAP to ASCII using a tool such as iconv
iconv -f ibm-1047 -t iso8859-1 input.ebcdic.sap > output.ascii.sap**

Removed support for -p parameter

Specify page range in SAP datastream

Customized .tab files (ASCII, decimal) and double byte conversion tables (iconv -> uconv)

Merge changes back in and make sure to convert back to ASCII

AOP_SAP2AFP_RESOURCES

Make sure this isn't pointing to old resource directory

Nothing too big...

Addition of Korean and Cyrillic page defs and code pages

Korean code page T1H01150.CDP

Cyrillic code page T1001172.CDP

**Cyrillic page definitions P1CYR182.PDEF38PP
and P1CYR683.PDEF39PP**

Korean page definitions

Fix for SAP2AFP tracing

**Tracing no longer turned on when other
command line options specified.**



Where to go for more information

Our publications can be found at the IBM Publications Center: <http://www.elink.ibm.link.ibm.com/publications/servlet/pbi.wss>

Transforms publications:

IBM Infoprint Transforms to AFP V2.2 for z/OS (G550-0443-03)

IBM Infoprint Transforms to AFP V2R2 for z/OS Licensed Program Specifications (G550-0445-02)

IBM Infoprint Transforms from AFP V2.1 for z/OS (G550-0444-02)

Infoprint Server for z/OS Infoprint Transforms Redbook (SG24-7498-00)

Infoprint Server publications (z/OS V1R8.0-V1R11.0)

z/OS Infoprint Server Customization (S544-5744-10)

z/OS Infoprint Server Introduction (S544-5742-09)

z/OS Infoprint Server Messages and Diagnosis (G544-5747-09)

z/OS Infoprint Server Operation and Administration (S544-5745-10)

z/OS Infoprint Server Printer Inventory for PSF (S510-7703-01)

z/OS Infoprint Server User's Guide (S544-5746-09)



PSF V4R3 Update and New Function

General PSF information

PSF V4.3 New Function

AFP Download Plus New Function and Performance Enhancements

ACIF Updates



Why PSF?

PSF manages and controls data transmitted to Advanced Function Presentation (AFP) printers that are channel-attached, SNA-attached, or TCP/IP-attached

PSF for z/OS is based on industry print standards. PSF V4.3 for z/OS incorporates the most recent AFP Architecture changes approved by the AFP Consortium, providing consistent and device-independent color rendering across multiple color technologies and printer vendors.

PSF enables:

- automated print processes**
- system management of print files, attributes, and resources**
- page-level error recovery**
- accounting**
- extensive diagnostics**
- print process statistics.**

PSF sophistication, resilience, and diagnostics are unmatched by other print management systems.

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The AFP Color Consortium™ became an industry standards body in 2006, and was incorporated in 2009 as the AFP Consortium. The AFP Consortium, comprised of 40 vendor members and growing, strives to enhance the entire AFP architecture.

Whether it is printing monthly statements, providing financial data, or displaying personal healthcare information, print and output is a mission-critical workload for many enterprises. Enterprise print and output can also account for a significant percentage of a company's overall cost of doing business. With PSF V4.3 for z/OS enterprise print and output can be a potential source of real dollar savings. For example, PSF for z/OS can help provide:

Reduced overall labor costs through the use of automation

Improved print asset utilization by connecting more applications to existing devices

Minimized scheduling delays, reduced errors and wasted paper, and reduced reprints of "disappearing" jobs with end-to-end workflow management Improved timeliness with industry-leading print service levels, error recovery, diagnostics, defect support

Increased competitive advantage with flexible delivery (such as workgroup, cutsheet, continuous form, black-and-white, color) and flexible operations (such as multiple data formats, scheduling options, and so on) With PSF V4.3 for z/OS, IBM is building on its enterprise production print capabilities by enhancing its end-to-end, managed workflow used to deliver high-quality color and black-and-white printing on z/OS, with consistent results across a variety of devices that support this architecture.



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



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

A color mapping table maps 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

AFP Conversion and Indexing Facility (ACIF)

Converts line data to MO:DCA, indexes print files, collects print resources

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.

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These are all priced features.

AFP Download Plus

AFP Download Plus sends AFP data and all resources to a receiving system for processing. This feature obtains data from the JES spool, obtains resources from system and user resource libraries, transforms the data to MO:DCA-P (if required), and builds a MO:DCA resource group.

AFP Download Plus can temporarily store the MO:DCA-P data in a file in the working directory before sending it to the receiving system or, optionally, send the MO:DCA-P data directly to the receiving system without storing it in a temporary file in the working directory. The MO:DCA-P data and resource group can optionally be encoded, compressed, or both before sending them to the receiving system.

- Data is obtained from the JES spool, not a data file as with ACIF.
- The data is downloaded automatically and consists entirely of MO:DCA-P data.
- All required resources for printing can be included in the downloaded file, including PSF and JES default resources.
- Installation exit processing, similar to PSF, is reflected in the downloaded file.
- SMF type 6 records are produced, similar to PSF.
- Resource Access Control Facility (RACF®) checking is performed for user resource libraries.
- Distributed data can optionally be protected by secure transmission.

Download for z/OS

Download for z/OS sends data, without transforming it, to a receiving system in the IBM Internet Protocol network for printing or archiving. This feature obtains the data from the JES spool (but doesn't obtain any resources) and requires a routing-control data set to specify where the data is sent.



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.

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.

Download is also a priced feature.



**PSF V4.3 Enhancements
Available since September 2009**

RICOH
InfoPrint Solutions

New bar code capabilities

Improved color management

Error handling enhancement

New finishing options for cutsheet printers

Enhancements for AFP Download Plus

Enhancements to ACIF

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PSF V4.3: Productivity enhancements and new application support.

AFP Download Plus: *Direct transmission of converted print file improves performance*

AFP Download Plus has improved processing efficiency and control, reduced z/OS system resource utilization and additional information on jobs, along with improved messages and error handling to improve quality and assist in diagnosing print processing errors.

AFP Download Plus and ACIF are separately priced features of PSF.

Provide more flexibility in applications that use bar codes

Support increasing use of bar codes in applications, which provides mail optimization for postal savings and helps control automated workflows.

Concatenated bar code function
Lets you create Bar Code Object Content Architecture™ (BCOCA™) bar code data from multiple FIELD commands.

Continued enhancements to AFP architected color management capabilities:

You can now specify process colors as the default color in the data descriptor for a GOCA object, providing full color image reproduction in very high quality. An Include Object (IOB) structured field can also have a color override for a Graphics Object Content Architecture (GOCA) object that specifies process colors as the default.

Color Conversion (CC) color management resources (CMRs) can now pass through CMYK colors for an object.

Indexed CMRs that map indexed colors in the data to output device colors or colorant combinations now provide easier migration of existing color applications to newer color printer technologies.

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The CMYK color model (process color, four color) is a subtractive color model, used in color printing, and is also used to describe the printing process itself.

Color management resources (CMRs) are the foundation of color management in AFP print systems. They are AFP resources that provide all the color management information, such as ICC profiles and halftones, that an AFP system needs to process a print job and maintain consistent color from one device to another. CMRs share some characteristics with other AFP resources, but are different in some important ways. CMRs are similar to other AFP resources in these ways:

CMRs can be associated with elements of a print job at various levels of the hierarchy. Normal hierarchy rules apply, so CMRs specified at lower levels override those at the higher level. For example, a CMR set on a data object overrides a default CMR set on a print file.

CMRs can be included in a print job in an inline resource group and referenced in a form definition, page environment, object environment, or an include Object (IOB) structured field.



PSF V4.3 Enhancements New finishing options and Error

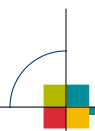
New finishing options for cutsheet printers.

Allow you to take full advantage of cutsheet printer finishing capabilities and produce better professional-grade documents

Now allow applications to specify documents to be bound into booklets, or trimmed to a specified size required by the finished document.

Improved Error Handling

Composition Error Handling holds jobs on the spool when the print data requests a medium map that is not found in the Form definition. This allows you to correct the library or form definition specified on the JCL and resubmit the job.



PSF V4.3 Enhancements Download Plus

Help improve processing efficiency and control, reduce z/OS system resource utilization, and provide additional information on jobs processed by AFP Download Plus

Optionally send Mixed Object Document Content Architecture data directly to the receiving system without storing it in a temporary file in the working directory

Change the transmission recovery interval with a new AFPPARMS control statement parameter

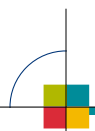
Send an error message data set to the receiver when errors stop transformation

Send the active PSF for z/OS separator pages to the receiver

Performance enhancements

AFP Download Plus: *Direct transmission of converted print file improves performance*

AFP Download Plus has improved processing efficiency and control, reduced z/OS system resource utilization and additional information on jobs, along with improved messages and error handling to improve quality and assist in diagnosing print processing errors.

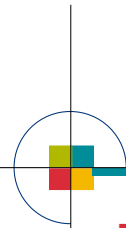


The COLORMAP parameter has been added to allow users to specify color mapping tables.

Same function in ACIF as in PSF

The IDXCPGID, MVSICNV, and NOICNV values have been added to the EXTENSIONS parameter

Note: ACIF can run with or without PSF.



PSF V4.3 Barcode Enhancements

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Allows creation of barcodes from multiple FIELDS of line data

2D barcodes can contain lots of data. It is not always convenient to have this data in 1 line data record.

Valid characters in a Postnet or IMB barcode are numbers 0 - 9 only. However, barcode in line data often in form of: 80501-3456.

See APAR PK86135 for detailed information

Example:

The hyphen in a nine-digit ZIP Code, 80302-9439, is not a valid character in a POSTNET bar code. With the concatenated bar code function, you can specify a FIELD for 80302 and a FIELD for 9439, and then concatenate them together in one bar code.

Page definition:

```
LAYOUT 'postnet1' BODY POSITION SAME NEXT;  
FIELD START 1 LENGTH 5 BARCODE pn1  
    TYPE postnet mod 1 hri on  
    supplanks BCDSYMB pn1concat BCDSEQ 1;  
FIELD START 7 LENGTH 4 BARCODE pn1  
    BCDSYMB pn1concat BCDSEQ 2;
```

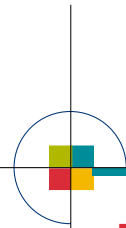
Line data:

```
postnet1 80501-7654
```

(Sequence numbers, 1 input record)

This example shows how a postnet barcode can be created from the data 80501-7654. Each FIELD has the SUBCOMMAND BARCODE with the parm BCDSYMB specified.

For example BCDSYMB pn1concat BCDSEQ 1. BCDSYMB says that you are creating / adding to a concatenated barcode. The pn1concat is just a local name for the symbol you are creating. The BCDSEQ says where this part of the barcode goes - in this case the data selected by this field goes first. The data in this case is 80501. The second FIELD in the example says BCDSYMB pn1concat BCDSEQ 2. This says to put the data from this field together with any other data already collected for symbol pn1concat & make it second (append it to data collected for sequence 1). The data for field 2 is 7654. When you concatenate the data from FIELD 1 & FIELD 2, you get 805017654 & this is just what you need for the POSTNET barcode.



PSF V4.3 Color Enhancements

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Support for the AFP Consortium Color Management Object Content Architecture (CMOCA)

Color management support provides device-independent optimization so that color output looks consistent on printers from different companies

The same AFP document can be printed on a black and white or color printer without having to maintain separate applications and resources.

With color management, you can print your document with high-quality grayscale color emulation

Color management resources (CMRs) associated with document components are processed as AFP resources by PSF so they are downloaded once, captured, and used repeatedly without requiring additional downloads.

Support for InfoPrint 5000 color printing system

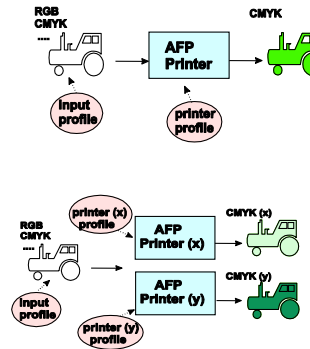


Objectives of AFP Color Management:

Accurate output color if input color properly defined

Standards (ICC) based architecture

Consistent output color and grayscale simulation on different devices driven by different applications



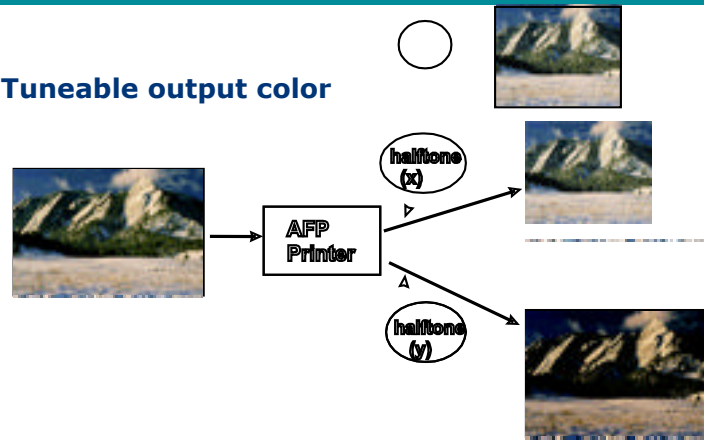
ICC: International Color Consortium

The ICC specification, currently on version 4.2, allows for matching of [color](#) when moved between applications and [operating systems](#), from the point of creation to the final print.

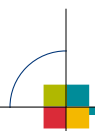
The main emphasis of the ICC is to define a format for [ICC profiles](#), which describe the color attributes of a particular device or viewing requirement by defining a mapping between the source or target [color space](#) and a *profile connection space* (PCS).

The ICC defines the format precisely but does not define algorithms or processing details. This means there is room for variation between different applications and systems that work with ICC profiles.

Tuneable output color



High-speed output color: integrate ICC profiles as AFP resources to leverage performance gains from AFP resource management



Print Services Facility for z/OS Color Solution

RICOH
InfoPrint Solutions

An end-to-end solution that provides standards-based color management from document creation to page rendering

Flexibility to manage color at the print file, document, page/page group or data object level

Based on the familiar and proven technology of IBM z/OS and Print Services Facility, with z/OS scalability, availability, security and workload management.

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You can now specify process colors as the default color in the data descriptor for a GOCA object, which provides full color image reproduction in very high quality.

An Include Object (IOB) structured field can also have a color override for a Graphics Object Content Architecture (GOCA) object that specifies process colors as the default.

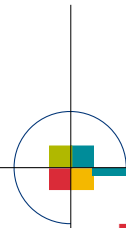
IOB with x'4E' triplet was previously supported for other OCAS, and is now also allowed for GOCA

Color Conversion (CC) color management resources (CMRs) can now pass through CMYK colors for an object.

These are CMRs that direct the printer to interpret CMYK color values without any color management

If you want to specify a CMYK CC CMR at a higher level of the hierarchy for IOCA but don't want these CMRs for other objects, you can use this new pass through CC CMR for objects where you don't want the CMYK colors changed.

These CMRs addressed a hole in the architecture. Customers were having problems with specifying a CMYK CC CMR at a higher level of the hierarchy for IOCA but didn't want that CMR for other objects; so the architects came up with this Passthru CC CMR that you can specify for objects where you don't want the CMYK values changed.



PSF V4.3 AFP Download Plus enhancements

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AFP Download Plus can now either:

Function as it previously did, in non-direct download method

Temporarily store the MO:DCA-P data in a file in the working directory before sending it to the receiving system

**Synchronize data between the zFS file and the Receiver.
-or-**

Use the new direct download method

Send the MO:DCA-P data directly to the receiving system without storing it in a temporary file in the working directory.

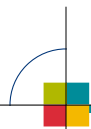
Synchronize data between the spool and the Receiver

Reduces the size of the UNIX file system up to 90%

Requires fewer I/O calls to the working directory, which reduces CPU utilization.

The receiver takes over some of the processing rather than AFP Download Plus doing it all.

The MO:DCA-P data and resource group can optionally be encoded, compressed, or both before sending them to the receiving system.



Current non-direct download method

Uses temporary files in a working directory to store both the MO:DCA-P data and resources.

Obtains data from the JES spool and obtains resources from system and user resource libraries, and those found inline with the job.

Transforms the print data set to MO:DCA-P and places the data in a temporary file.

Identifies every resource required by the spool data set and collects them in a second temporary file.

Transmits the two temporary files to the receiving system. Because the resources must be at the front of the document, the resource file is sent first and the MO:DCA-P file is sent second.

After the receiving system confirms that it has received all the data, AFP Download Plus deletes the temporary files from the working directory and the print data set from the spool.



AFP Download Plus direct-download=modca

Transforms the print data set to MO:DCA-P and then sends the data directly to the receiving system.

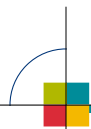
Obtains data from the JES spool and obtains resources from system and user resource libraries, and those found inline with the job.

Transforms the print data set to MO:DCA-P and then sends the data directly to the receiving system.

At the same time, it identifies every resource required by the spool data set and collects them in a temporary file.

Transmits the resources in the temporary file to the receiving system after the MO:DCA-P has been transmitted.

After the receiving system confirms that it has received all the data, AFP Download Plus deletes the temporary file from the working directory and the print data set from the spool.



Set the AFPPARMS direct-download control statement parameter to modca

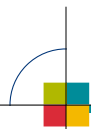
`direct-download={none | modca}`

none

AFP Download Plus stores the MO:DCA-P and resource data created from the JES spool print data in temporary UNIX files until transmission to the receiver. This is the default.

modca

AFP Download Plus sends the MO:DCA-P data created from the JES spool print data directly to the receiver. The resource data is stored in a temporary UNIX file until transmission to the receiver.



AFP Download Plus direct- download=modca

Make sure that the receiver also supports the direct download function, specifically the Multi File Transfer command set. This function requires the download receiver from one of these products:

InfoPrint Manager for AIX Version 4 Release 3.0 (PN 5648-F35) with PTF U000917

InfoPrint Manager for Windows Version 2 Release 3.0 (PN 5648-F36) with PTF U000918

AFP Download Plus feature of PSF 4.3.0 for z/OS

If direct-download=modca but the receiver does not support multi file transfer mode, then multi file transfer is deactivated, APS8256I is issued, and AFP Download Plus continues.



Size of the file system on the receiver must be larger than the file system on the sender

Data file and resource file copied on the receiver

When AFP Download Plus is using compression, the size of the file system on the receiver must be larger than the file system on the sender to contain both compressed and uncompressed data.

Working directory size

When AFP Download Plus is using the direct download function, the working directory contains only resources and not MO:DCA-P data. Based on the job that requires the largest number of resource bytes, estimate the size of the working directory. The working directory size must be larger than the resource bytes required.

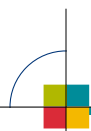
File system on receiver > file system on sender: This is because when the receiver has received the data file and the resource file, it creates one file by copying the data file to the end of the resource file. Therefore, the receiving file system must be large enough to contain the resource file, the data file, and a copy of the data file.



Reduces the size of the UNIX file system up to 90%

As the size of the MO:DCA-P data increases compared to the size of the resources, you see more of a reduction in the size of the UNIX file system.

Requires fewer I/O calls to the working directory, which reduces CPU utilization.



AFP Download Plus Guaranteed transmission of data

AFP Download Plus guarantees the transmission of data by monitoring the data and retransmitting a document from the last successful recovery point if it detects that bytes have not been received.

Sends recovery points to verify the transmission byte count. If the byte count does not match the current recovery point, AFP Download Plus will retransmit the document from the last successful recovery point, synchronizing transmitted data with the receiver based on the transmit-recovery-pages parameter on the AFPPARMS control statement or at the end of a file.

Verifies that all data has been successfully accepted by the receiver before deleting a data set from the z/OS system.



Change the transmission recovery interval with the transmit-recovery-pages parameter on the AFPPARMS control statement.

transmit-recovery-pages=nnnnn

Specifies a number that indicates how often AFP Download Plus synchronizes with the receiving system to determine if the transmitted data has been received and if not, retransmits the data from the last successful recovery point.

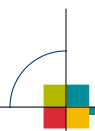
Values: 0 to 65535; the default is 1000. When 0 is specified, AFP Download Plus does not synchronize the transmitted data with the receiver until the end of a file.



Changing the synchronization frequency affects AFP Download Plus performance.

For best performance:
transmit-recovery-pages=0
AFP Download Plus only synchronizes the transmitted data with the receiver at the end of a file.

For worst performance:
transmit-recovery-pages=1



AFP Download Plus Send messages when errors stop

When errors cause transformation to stop, AFP Download Plus, by default, transforms the message data set into a MO:DCA-P file and sends it to the receiver system.

New send-messages-on-failure on the AFPPARMS control statement provides more control when errors occur

send-messages-on-failure={all | generic-only}

Specifies which messages are sent to the receiver system when the print job has errors that stop transformation. The values are:

all AFP Download Plus transforms the messages for the data set that has errors and sends them to the receiver system as a MO:DCA-P file. This is the default.

generic-only AFP Download Plus generates message APS8239I and sends it to the receiver system as line data.

Also provided for PSF V4.2

APAR OA24124

PTFs UA43676/UA43677



AFP Download Plus Send messages when errors stop

To configure the receiver to receive messages and to avoid receiving "resource not found" error messages when you print the message file, you must:

Manually make the resources available to the receiving system, if they are not already available.

Place the resources in the appropriate libraries.

The send-messages-on-failure=generic-only value must not be specified when using dataset-grouping=yes to send multiple data set jobs to the z/OS receiver system, because the receiving system cannot receive jobs with both line data and MO:DCA-P data sets.

When the AFPPARMS parameter **send-messages-on-failure=generic-only** is specified, AFP Download Plus sends an APS8239I message file to the receiver for errors that caused processing to stop. Any resources specified on the message data set OUTPUT statement in the AFP Download Plus startup procedure are sent to the receiver in -o attributes. However, the resources themselves are not sent inline.



AFP Download Plus Send separator pages

AFP Download Plus can now be configured to send the active PSF for z/OS separator pages to the receiver.

New send-separator-pages parameter on the AFPPARMS control statement

send-separator-pages={yes | no}

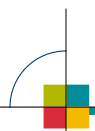
Specifies whether AFP Download Plus sends the separator pages for a job. The default is no.

For the appropriate separator page, ensure that an installation exit is in STEPLIB in the AFP Download Plus startup procedure or in a LINKLIB in the standard MVS search order:

Job header separator page
APSUX01 or APSUC01

Job trailer separator page
APSUX02 or APSUC02

Data set header separator page
APSUX03 or APSUC03



AFP Download Plus How to send z/OS separator pages

Specify **YES** for the **Send separator pages** parameter in the **Printer Inventory** or the **send-separator-pages** parameter in the **AFPPARMS** control statement.

Specify **YES** for the **Data set grouping** parameter in the **Printer Inventory** or the **dataset-grouping** parameter in the **AFPPARMS** control statement; because when a separator page is sent to the receiver with a job, the job becomes a multiple data set job.

For the appropriate separator page, ensure that an installation exit is in a data set pointed to in a **STEPLIB DD** statement in the **AFP Download Plus** startup procedure or in a **LINKLIB** in the standard **MVS** search order:

Job header separator page
APSUX01 or APSUC01

Job trailer separator page
APSUX02 or APSUC02

Data set header separator page
APSUX03 or APSUC03

Specify the appropriate JOBHDR, JOBTRLR, and DSHDR PRINTDEV parameters that identify the OUTPUT statement to be used for the separator pages.

Specify YES for the appropriate JES initialization statements:

JES2 SEP and SEPDS

JES3 HEADER

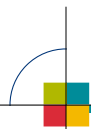


AFP Download Plus Send separator pages limitations

Only one data set header is sent to the receiver when multiple copies of a print job are requested. The receiver then prints only one copy of the data set header even though multiple copies of the job are printed. This differs from PSF, which prints a data set header with each copy of the print data set.

The receiver spools the separator pages with the rest of the job (as if they are part of the user's job); this means they are no longer recognized as separator pages. Therefore, any separator page functions (such as offset stacking, edge marks, and mark forms) are not performed by the print server on the receiving system.

When AFP Download Plus generates and sends separator pages to the receiver, these are the limitations:



AFP Download Plus Send separator pages

This function requires the download receiver from one of these products:

InfoPrint Manager for AIX Version 4 Release 3.0 (PN 5648-F35)

InfoPrint Manager for Windows Version 2 Release 3.0 (PN 5648-F36)

InfoPrint ProcessDirector for AIX Version 1 Release 3.1 or later (PN 5765-G74) with PTF US00108

InfoPrint ProcessDirector for Linux Version 1 Release 3.1 or later (PN 5765-G79) with PTF U827003

AFP Download Plus feature of PSF 4.3.0 for z/OS

Also provided for PSF V4.2

APAR OA24125

PTFs UA44951/UA44952

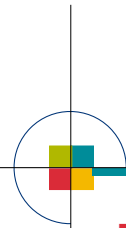
Many of the installation exits supported by PSF are also supported by AFP Download Plus.

Exits 1, 2, and 3 now supported

**Job header separator page
APSUX01 or APSUC01**

**Job trailer separator page
APSUX02 or APSUC02**

**Data set header separator page
APSUX03 or APSUC03**



PSF V4.3 AFP Download Plus Sender Performance

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AFP Download Plus Performance

Download Plus runs as a JES Functional Subsystem

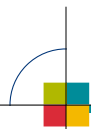
Reads print file from JES spool and reads resources from libraries and Unix file system

May consume significant amounts of system resources if not managed

Recommend creating a resource group, service class, and classification rules in WLM to limit the AFP Download Plus started task (APSHPOSE) processor usage by service unit or time

IBM recommends that you place AFP Download Plus in a separate WLM service class from PSF for z/OS because they have dissimilar performance characteristics

Limiting PSF can cause the printers driven by PSF to pause because they have to wait for data



AFP Download Plus Performance

There must be enough space for the resources and, depending on the setting of direct-download, print file temporary storage in the Unix file system

/var/psf is the default file path

Must be in its own file system for best management and performance

Estimate size from the largest print dataset

Pages, lines or bytes

Page sizes in bytes can vary greatly for different applications

If possible, test using ACIF to get accurate estimates

Allow for largest files times number of concurrent senders

Use a zFS file system for performance

The receiving file system must be sized similarly

See Chapter 2 of AFP Download Plus V4R3, S550-0433-03 for details of size calculations

AFP Download Plus is faster, so the total time for the job is dependent on the speed of the receiving system.



AFP Download Plus Performance

secure-transmission

Encoding all data before transmission can reduce performance.

compression

Compressing data before transmission decreases the amount of data sent to the receiver, thus reducing the transmission time. However, because of the time required to compress and decompress the data, the overall performance might not be improved.

Transmit recovery pages

Best performance: transmit-recovery-pages=0

Worst performance: transmit-recovery-pages=1

direct-download=modca

Possible reduction of up to 90% in the size of the UNIX file system.

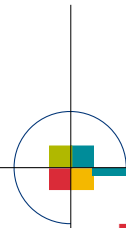
With a reduction in I/O calls to the working directory, possibly less processor usage

Reduced TCP/IP commands

IBM recommends that you use a buffer size of 256 KB for TCPRCVBUFRSIZE and TCSENDDBFRSIZE. You can specify these parameters in the TCPCONFIG statement in the hlq.PROFILE.TCPIP data set.

See z/OS Communications Server: IP Configuration Reference for information about the TCPCONFIG statement and the PROFILE.TCPIP search order.

In the past, whenever a buffer of data was sent, two calls were made to TCP/IP: one to send the length and the other to send the data.
Now a single call is made to TCP/IP to send both the length and the data.



PSF V4.3 ACIF Enhancements

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AFP Conversion and Indexing Facility (ACIF)

ACIF helps you prepare print files for transfer to another print location or to an archive/retrieval system

Enhanced ACIF converts line data, unformatted ASCII files, or XML data using instructions in a Page Definition into AFP

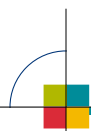
Enhanced ACIF can package AFP resources needed to print jobs, and index a document to facilitate use with archival/retrieval systems

In PSF V4, ACIF was enhanced with additional indexing capabilities to provide more flexibility in defining individual documents and page groups within a file

Unlike PSF V3, the Enhanced ACIF feature in PSF V4 can be ordered without having to pre-req the base PSF feature

ACIF now supports Color Management Resources

Can include in object container with other print resources



A **COLORMAP** Parameter has been added to specify the name of an object container for a color mapping table resource (CMT)

COLORMAP=name

name: Any valid color mapping table name.

A color mapping table can be an inline resource in all data formats except XML.

Supported in PK76027/UK45232

The **EXTENSIONS** parameter specifies the extended options that ACIF uses.

EXTENSIONS={NONE | ALL | [PRCOLOR][,BOX][,FRACLINE] [,CELLED][,SPCMPRS] [,RESORDER][,PASSOID][,IDXCPGID] [,MVSICNV][,NOICNV]}

IDXCPGID - Specifies that ACIF processes code page identifiers for these Unicode code pages:

1200 UTF-16 BE

1208 UTF-8

13488 UTF-16 BE

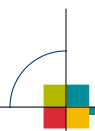
17584 UTF-16 BE

This value is used only with line data, not MO:DCA-P or mixed-mode data.

MVSICNV | **NOICNV**- Specifies that ACIF should/should not initialize the CEEPIPI environment to enable the ICONV translation services.

A color mapping table is an AFP resource that is used to map color values specified in a source color space to color values specified in a target color space.

PSF/zOS and Infoprint Manager both supply a utility to create color mapping tables.



ACIF

New support in the EXTENSIONS

The **EXTENSIONS** parameter specifies the extended options that ACIF uses.

EXTENSIONS={NONE | ALL | [PRCOLOR][,BOX][,FRACTION] [,CELLED] [,SPCMPRS][,RESORDER][,PASSOID][,IDXCPGID] [,MVSICNV] [,NOICNV]}

IDXCPGID - Specifies that ACIF processes code page identifiers for these Unicode code pages:

1200 UTF-16 BE

1208 UTF-8

13488 UTF-16 BE

17584 UTF-16 BE

This value is used only with line data, not MO:DCA-P or mixed-mode data.

MVSICNV| NOICNV - Specifies that ACIF should/should not initialize the CEEPIPI environment to enable the ICONV translation services.



MVSICNV

Specifies that ACIF should initialize the CEEPIPI environment to enable the ICONV translation services.

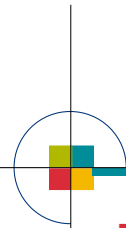
Required if the page definition specifies QR Code bar codes and the line data contains DBCS characters.

When you specify the USERPATH, FONTPATH, or OBJCPATH parameter to request color management or TrueType and OpenType font support, MVSICNV is the default.

NOICNV

Specifies that ACIF should not initialize the CEEPIPI environment to enable the ICONV translation services.

NOICNV is the default unless you specify the USERPATH, FONTPATH, or OBJCPATH parameter to request color management or TrueType and OpenType font support.



PSF V4.3 General Requirements

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z/OS 1.9 or later, with supported levels of JES2 or JES3

To use the Printer Inventory component of Infoprint Server to define PSF printers without licensing the Infoprint Server feature, z/OS 1.9 requires Infoprint Server PTF UA37619.

To use the Infoprint Server Printer Inventory support for AFPPARMS control statement parameters, z/OS 1.9 requires Infoprint Server PTF UA37619. To use the Resources Included Inline: Color management resources parameter in the Printer Inventory, z/OS 1.9 also needs the Infoprint Server PTF UA39898.

To use the Send messages on failure and Send separator pages parameters in the Printer Inventory, z/OS 1.9 requires the Infoprint Server PTF UA44914

To use the aopmig Printer Inventory migration program to copy AFPPARMS control statement parameters to new FSA and FSS definitions in the Printer Inventory, z/OS 1.9 requires Infoprint Server PTFs UA37619 and UA38345.

Previously, a license for the Infoprint Server feature of z/OS was required to use the Printer Inventory with PSF. Now you can use the Printer Inventory component of Infoprint Server to define PSF printers without licensing the Infoprint Server feature of z/OS (z/OS 1.9 requires Infoprint Server PTF UA37619). The Printer Inventory without the Infoprint Server feature is referred to as the “Printer Inventory for PSF”.



Where to go for more information

Our publications can be found at the IBM Publications Center: <http://www.elink.ibm.link.ibm.com/publications/servlet/pbi.wss>

PSF-related publications:

AFP Conversion and Indexing Facility User's Guide (S550-0436-02)

AFP Fonts: Font Summary (G544-3810-03)

PSF for z/OS: AFP Download Plus (S550-0433-03)

PSF for z/OS: Customization (S550-0427-02)

PSF for z/OS: Diagnosis (G550-0428-02)

PSF for z/OS: Download for z/OS Guide (S550-0429-02)

PSF for z/OS: Introduction (G550-0430-02)

PSF for z/OS: Licensed Program Specifications (G550-0431-02)

PSF for z/OS: Messages and Codes (G550-0432-02)

PSF for z/OS: Security Guide (S550-0434-02)

PSF for z/OS: User's Guide (S550-0435-02)