Infoprint Server Update for z/OS 2.2

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Agenda

❖ New function in Infoprint Server V2R2

- TSO/E Command for stopping a printer
- Start individual daemons
- Variable mail in-line message
- Infoprint Central and Infoprint Server new design

What is Infoprint Server?

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

❖ Printer Inventory
- Provides a single set of printer definitions that all the components of Infoprint Server use.

- Contains printer customization information that Print Services Facility (PSF) uses.

What is Infoprint Server?

❖ NetSpool™
- – Intercepts print output from VTAM applications and allocates output data sets on the JES2 or JES3 spool for printing on local or remote printers.

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

❖ Infoprint Central
- – A Web-based application that lets help desk operators and other authorized users or job submitters work with print jobs (output data sets) on the JES spool, printers controlled by IP PrintWay extended mode or PSF, and NetSpool logical units.
- – Lets operators see system status and printer definitions.

What is Infoprint Server?

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

❖ Transform Interface
  – Communicates with transform products that IBM and the InfoPrint Solutions Company provide. Transforms convert data from one format to another. For example, from PDF to AFP format, or from AFP to PCL format.

IBM Infoprint Server V2R2
New Function

Overview of New Infoprint Server 2.2 Function

* ❖ Infoprint Server has added a TSO/E command that allows authorized users the ability to start and stop Infoprint Server managed output devices from TSO/E.
* ❖ New support for starting and stopping individual Infoprint Server daemons as started tasks.
* ❖ New function is added to IP PrintWay Extended mode to allow inclusion of personalized text, from each step of a batch job when sending output via email.
* ❖ Infoprint Central enhancements:
    * – Allow searching for output from TSO jobs.
    * – Completely redesigned and easier to use interface.
    * – Redesigned to work with IBM HTTP Server – Powered by Apache (31bit version).

TSO/E Command to start, stop printers

❖ Starting/Stopping Printers from a command has been a long-standing request.
  – You can now use a TSO command to start or stop a printer
  – Makes it easier to use automation
  – Infoprint Central has always had this function
    • Requires a browser session
    • No easy way to automate
❖ New TSO/E command, AOPCMND

Configuring AOPCMND

❖ AOPCMND is shipped in SYS1.LINKLIB.

❖ To use the new command
  – Authorize the TSO/E command processor by editing the IKJTSOxx member of SYS1.PARMLIB
  – Add AOPCMND to the AUTHCMD list.
    • Enable Dynamic Configuration.
    • Make sure Infoprint Server daemon aopoutd has started.

❖ Example: To start a printer definition named testprinter, issue the following command: (NOTE: *The printer definition name is case-sensitive*.)
```
aopcmnd printer 'testprinter' start
```

❖ You can run AOPCMND command from the TSO/EREADY prompt, ISPF command shell, a batch job, or a started task.

❖ If you move the command from SYS1.LINKLIB to another library, make sure it is placed in an APF-authorized library.

AOPCMND Usage & Invocation

❖ Format

AOPCMND PRINTER 'printer_definition_name'
  {START | STOP [(COMPLETE | HOLD | DELETE)] }
  [INVENTORY(inventory_name)]
  [XCFQUALIFIER(group_qualifier)]

❖ Description
You can use the TSO/E command, AOPCMND to start and stop IP

❖ PrintWay Extended mode printers instead of using Infoprint Central.

OPTIONS
PRINTER 'printer_definition_name'
Specifies the printer definition name of the printer that you want to start or stop. This option is required.
Rules:
1. Enclose the printer definition name in single quotation marks.
2. The printer definition name is case-sensitive.
START | STOP [(COMPLETE | HOLD | DELETE)]
Starts or stops the specified printer. This option is required. You can specify
one of these values:
START
STOP [(COMPLETE | HOLD | DELETE)]
Stops the specified printer based on the specified option. You can specify
one of these values:
COMPLETE
The printer stops after the current job completes. This is the default.
HOLD
The current job is deleted and the printer stops. INVENTORY(inventory_name)
Specifies the Printer Inventory name that is used to build the cross-system coupling facility (XCF) group name. The name must be a Printer Inventory that is running. The default is AOP1.
XCFQUALIFIERDELETE

Configuring AOPCMND

PRINTER 'printer_definition_name'
Specifies the printer definition name of the printer that you want to start or stop. This option is required.
Rules:

    Enclose the printer definition name in single quotation marks.

    The printer definition name is case-sensitive.

START | STOP [(COMPLETE | HOLD | DELETE)]

    Starts or stops the specified printer. This option is required. You can specify

    one of these values:

    START

    STOP [(COMPLETE | HOLD | DELETE)]

    Stops the specified printer based on the specified option. You can specify

    one of these values:

    COMPLETE

    The printer stops after the current job completes. This is the default.

    HOLD

    The current job is deleted and the printer stops.

    INVENTORY(inventory_name)

    Specifies the Printer Inventory name that is used to build the cross-system coupling facility (XCF) group name. The name must be a Printer Inventory that is running. The default is AOP1.

XCFQUALIFIER(group_qualifier)

    Specifies the one-character, alphanumeric XCF group qualifier name that is used to build the XCF group name. If you omit this option, the value is blank

Start and stop procedures for Infoprint Server daemons

- ❖ Infoprint Server now allows starting or stopping individual Infoprint Server daemons from MVS console or as started tasks.
  - Previously it was necessary to cancel the desired daemon or start it from the Unix command line
- ❖ You can automate startup and recovery actions using existing z/OS automation options and simplify operation and procedures for managing Infoprint Server.
- ❖ You can specify environment variables tailored for each Infoprint Server daemon, typically specified on aopstart EXEC or AOPSTART PROC, AOPTRACEON (and variations), CLASSPATH, _CEE_RUNOPTS, etc.

Start and Stop JCL Procedures

❖ Infoprint Sever is shipping new JCL procedures that can be customized to start and stop some or all of Infoprint Server daemons and obtain Infoprint Server status information.

❖ These new JCL procedures can be found in SYS1.IBM.PROCLIB:
  – AOPDEMON To start an individual Infoprint Server daemon.
    • Example: To start Infoprint Central daemon, enter following on MVS command line
    START AOPDEMON, TYPE=SSI
  – AOPSTAR2 To start one or multiple Infoprint Server daemons.
    • Example: Customize before use and enter this command to start multiple daemons.
    START AOPSTAR2
  – AOPSTOP2 To stop one or multiple Infoprint Server daemons.
    • Example: Customize before use and enter this command to stop multiple daemons.
    START AOPSTOP2
  – AOPSTAT To display information and status of Infoprint Server.
    • Example: Enter this command to display Infoprint Server information.
    START AOPSTAT

JCL Example

```
//* AOPSTAR2 — This procedure starts the Infoprint Server daemons.
//* The USERID executing this proc must be a member of
//* the AOPOPER group.
//* The first step MUST be coded. The rest are optional
//* and depend on which Infoprint Server services you
//* wish to use.
//AOPSTAR2 PROC
//*
//INVENTRY EXEC AOPDEMON,TYPE=AOP Required
//*
//INETPRNT EXEC AOPDEMON,TYPE=IPP
//*
//LPDEMON EXEC AOPDEMON,TYPE=LPD
//*
//NETSPOOL EXEC AOPDEMON,TYPE=NET
//*
//PRINTWAY EXEC AOPDEMON,TYPE=OUT
//*
//GUIDEMON EXEC AOPDEMON,TYPE=SSI
//*
//SUBSYSTM EXEC AOPDEMON,TYPE=SUB
//*
//WORKSELC EXEC AOPDEMON,TYPE=WSM
//*
//TRANSFRM EXEC AOPDEMON,TYPE=XFD
```

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Procedures for Infoprint Server daemons

❖ Before using these new procedures make sure following requirements are met:
  – Dynamic configuration is enabled.
  – Operating Mode field is set to z/OS2.2 on the ISPF System Configuration Panel.

❖ Operating Mode is a new element introduced with V2R2 to provide the ability to decide whether new product functions are activated during or after installation.

❖ When Dynamic configuration is enabled the element can be set using ISPF System Configuration Panel
  – Default value is set to z/OS 2.1.

❖ When Operating mode is set to z/OS 2.2, the aopstart EXEC and the start- daemons attribute in aopd.conf are ignored.

Variable mail in-line message

❖ Users have requested the ability to include variable messages, as in-line text with IP PrintWay Extended mode when sending output data via email.

  – Infoprint Server provides a new function in IP Printway Extended mode to allow personalized text to be included in each step of a batch job used to send print output via email.

❖ You can insert customized greeting (such as "Dear Mr. Jones,") ahead of generated email or a standard email text that accompanies an attachment.

Using Variable Inline Messages

- ❖ IP Printway Extended mode can include a text job attribute inline as a text string on the first line of an email.
  - – You request this function with the Inline text attribute field in the printer definition.
- ❖ The text job attribute can be specified in these ways:
  - – For a job spooled to JES, with the JCL parameter when the document is allocated on the JES spool.
  - – For a batch job, with the JCL parameter or the PRTATTRS parameter in the JCL: (JCL parameter NAME is one such example)

    NAME='Dear Mr. Jones,'

    PRTATTRS='name-text="Dear Mr. Jones,"'
- ❖ For an lp or AOPPRINT job, with a -o parameter:

    -o 'name-text="Dear Mr. Jones,"'
- ❖ For a NetSpool job, in a data stream as a NetSpool Job Attribute:

    <<IBMJOBATTR0020name-text=Dear Mr. Jones,

Using Variable Inline Messages

mail-inline-text-attribute

This single-valued attribute specifies an existing text job attribute that IP PrintWay extended mode includes inline as a text string at the beginning of each email.

This attribute pertains only to printer definitions with protocol-type=email. It is optional for these printer definitions.

ISPF field name: **Inline text attribute**
Allowed values: You can specify one of these single-valued text job

attributes:

building-text department-text name-text room-text title-text

Examples: The name-text value is used, which is defined as: Name-text="Dear Mr. John Smith:"
This is the text on the first line in the email:
Dear Mr. John Smith,

[If you include message text in the body of the email, text starts here.]

You might include a document instead of or in addition to text

Using Variable Inline Messages

Here is a JCL example that instructs IP Printway Extended mode to include the name or department in the first line of the email.

```
//...EX1
//NAMEOUT OUTPUT DEST=xxx,
//         NAME='Dear Mr. Jones',
//         PRTATTRS='mail-inline-text-attribute="name-text"'
//....
//...EX2
//DEPTOUT OUTPUT DEST=YYY,
//         DEPT='Department Z',
//         PRTATTRS='mail-inline-text-attribute="department-text"'
//...
```

The value of the // OUTPUT keywords NAME= and DEPT= is substituted in the email because the PRTATTRS keyword specified which keyword would contain the inline text

Search output from TSO jobs using Infoprint Central

❖ You want to search for outputs from TSO jobs using Infoprint Central.

❖ Infoprint Server has a new function in Infoprint Central to allow searching for output from TSO jobs among JES print jobs.

Finding TSO Jobs

❖ Infoprint Central can now search output from TSO jobs
❖ You can search for these jobs using **Work with Print Jobs** tab on the Infoprint Central
  – Use the find button to search any job, including output from TSO jobs.
  – This change applies only when searching for JES Print Jobs.
    • In JES2, TSO output jobs typically have a job ID prefix of TSU.

Infoprint Central Redesign

❖ IBM is removing support for IBM HTTP Server Powered by Domino in z/OS 2.2.

   – Infoprint Central has been redesigned to work with IBM HTTP Server Powered by Apache(31 bit version).

❖ This is necessary for continued availability and use of Infoprint Central, the primary operator interface to Infoprint Server.

❖ The redesign also improves user experience by adopting current IBM User Interface design guidelines.

hostname
The address of the z/OS system where the IBM HTTP Server -
Powered by Apache is running.
port
● ●
The port where the IBM HTTP Server - Powered by Apache receives requests.
If the HTTP server receives requests at the default port, you can omit the port number. The default port number depends on whether you have customized the HTTP server to use Secure Sockets Layer (SSL):
The SSL default port is 443. Otherwise, the default port is 80.
Example: If the HTTP server receives requests at the default port, you can enter:
http://hostname/Infoprint/En_US/IPS.html
or
https://hostname/Infoprint/En_US/IPS.html

Configuring the New Infoprint Central

- ❖ The IBM HTTP Server–Powered by Apache files are shipped with z/OS V2R2; the default location is:
  /usr/lpp/ihsa_zos/.31bit/
- ❖ Make necessary configuration changes prior to using IBM HTTP server-Powered by Apache with Infoprint Central
- ❖ Edit and update configuration files for the IBM HTTP Server Powered by Apache.
  - These files are located in the target directory where the HTTP Server was installed.
  - You need to make this change before you start the HTTP Server.
  conf/httpd.conf
- ❖ This configuration file contains directives that customize the HTTP Server.
- ❖ Add directives to the configuration file so that the HTTP Server can display Infoprint Central web pages.

Complete your session evaluations online at www.SHARE.org/Orlando-Eval

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Create an Installation directory for the server configuration files mkdir etc/websrv1

Change the directory location to IBM HTTP server Powered by Apache cd /usr/lpp/ihsa_zos/.bit31/

Run the install program to install the IBM HTTP Server Products files in your target directory

./bin/install_ihs $HOME/etc/websrv1 8081

Confirm that you have successfully installed an operating version of the IBM HTTP server, from your install directory.

a) Change to your directory cd etc/websrv1

b) Run these commands apachectl -v

apachctl configtest

You should see output similar to following # bin/apachectl -v

Server version: IBM_HTTP_Server/9.0.0.0 (UNIX)

Server built: Jul 11 2014 18:07:04 # bin/apachectl configtest

Syntax OK

Use this command to start the HTTP Server # bin/apachctl start

Verify that the HTPP server is running successfully, load the default Infoprint Central web page for your host.

http://<hostname.com:port/Infoprint/En_US/main.index

Use this command to stop the HTTP server # bin/apachctl stop

_____

SAF (RACF) authorization

SAF authentication is provided by the mod_authnz_saf

module. The mod_authz_default and mod_auth_basic modules # provide basic authentication and authorization support

❖ When IBM HTTP Server Powered by Apache is installed, the default environment variable file, *bin/envvars* is created.

– To use the IBM HTTP Server Powered by Apache with Infoprint Central you must customize the environment variable file by adding Infoprint Server related environment variables at the end of the file.

bin/envvars

❖ See the Infoprint Server Configuration book (or the notes section below) for environment variables you might need to add.

For example, you might add these variables:
export AOPCENTRAL=/usr/lpp/Printsrv/InfoprintCentral
export AOPCONF=/etc/Printsrv/aopd.conf # Location of aopd.conf export CLASSPATH=/usr/lpp/Printsrv/classes/penguin.jar:
/usr/lpp/Printsrv/classes/ipa.jar: /usr/lpp/Printsrv/classes/snmp.jar: /usr/lpp/Printsrv/classes/modelplugin.jar
export JAVA_HOME=/usr/lpp/java/J7.1
export LANG=C
export LC_ALL=En_US.IBM-1047
export LIBPATH=$LIBPATH:/usr/lpp/Printsrv/lib:
/usr/lpp/ixm/IBM/xml4c-5_7/lib:
/usr/lpp/ixm/IBM/xslt4c-1_11/lib export NLSPATH=/usr/lpp/Printsrv/%L/%N:
/usr/lib/nls/msg/%L/%N: /usr/lpp/internet/%L/%N: /usr/lpp/ldap/lib/nls/msg/%L/%N
export TZ=MST7MDT # Timezone you live in

Infoprint Central: Search Results

Infoprint Central: Printer Information

Infoprint Central: Sample Dialog

Infoprint Central: Properties Notebook

Upgrading from z/OS 1.13?

If You're Upgrading from z/OS 1.13…

❖ New in Infoprint Server for z/OS 2.1
  – Dynamic Configuration for most Infoprint Server options
  – Common Message Log can now use z/OS System Logger
  – SMF type 6 enhancements

❖ For a more detailed description, see Session 14662, Share Anaheim 2014:
  http://www.share.org/p/do/sd/topic=396&sid=10383#collapse_10737

Infoprint Server 2.1: Why Dynamic Configuration?

❖ You can now configure Infoprint Server dynamically while it is running. For most configuration attributes, you no longer need to stop and restart Infoprint Server for the new value to take effect.

❖ Infoprint Server customizable configuration attributes reside in various configuration files and environment variables in the aopstart EXEC. Most of these attributes are have now been consolidated into one system configuration definition.

❖ New Infoprint Server ISPF panel (12.8.8) or Printer Inventory Definition Utility (PIDU) can be used to view consolidated configuration attributes and environment variables, and change some of them.

Infoprint Server 2.1: Common log enhancement

❖ You can now use the system logger, a component of MVS, for Infoprint Server messages. The system logger provides a more robust, reliable method for storing messages.

❖ Consolidates messages from:
  – Infoprint Server
  – Supported transform products
  – PSF for z/OS V4R4 and later

Infoprint Server 2.1: SMF6 accounting enhancements

❖ If you run IP PrintWay extended mode,you can modify your accounting programs to take advantage of additional accounting information from the JOB JCL statement in System Management Facilities (SMF) type 6 records.

❖ For detailed information about the new SMF6ACCT field in the SMF6 record, see z/OS MVS System Management Facilities (SMF).

Where to go for more information on Infoprint Server

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

❖ Server publications

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

Questions?