IBM

Print Transforms from AFP for Infoprint Server for z/OS

Version 1 Release 1

> **Note:**
> Before using this information and the product it supports, read the information in "Notices" on page 263.

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About this document

This document describes Version 1 Release 1 (V1.1) of these IBM® products:
- IBM Print Transform from AFP to PCL for Infoprint Server for z/OS® (program number 5655-TF2)
- IBM Print Transform from AFP to PDF for Infoprint Server for z/OS (program number 5655-TF1)
- IBM Print Transform from AFP to PostScript for Infoprint Server for z/OS (program number 5655-TF3)

With these products, you can transform documents from Advanced Function Presentation (AFP) format to:

- Printer Control Language (PCL)
- Portable Document Format (PDF)
- PostScript

The transforms require Infoprint Server, which is a separately priced feature of z/OS. The transforms run on all supported releases of z/OS.

Who should read this document

This document is for anyone who needs to transform AFP documents, system programmers who customize the transform products, administrators responsible for maintaining the Infoprint Server Printer Inventory, and diagnosticians who must diagnose transform errors.

Readers should be familiar with Infoprint Server, AFP, z/OS UNIX System Services, and z/OS job control language (JCL).

Where to find more information

This section describes where to find related information.

Preventive Service Planning information

Before installing Infoprint transforms, you should review the current Preventive Service Planning (PSP) information, also called the *PSP bucket*. You should also periodically review the current PSP information.

The PSP upgrade IDs and subsets are:

Table 1. PSP upgrade IDs and subsets

Transform	Upgrade ID	Subset
IBM Print Transform from AFP to PCL for Infoprint Server for z/OS	5655TF2	HTFX110, HTFX112
IBM Print Transform from AFP to PDF for Infoprint Server for z/OS	5655TF1	HTFX110, HTFX111
IBM Print Transform from AFP to PostScript for Infoprint Server for z/OS	5655TF3	HTFX110, HTFX113

To obtain the current PSP bucket, contact the IBM Support Center or use z/OS SoftwareXcel (IBMLink). If you obtained z/OS as part of a CBPDO, HOLDDATA and PSP information is included on the CBPDO tape. However, this information might not be current if the CBPDO tape was shipped several weeks prior to installation.

Documentation

This section lists related documentation that can help you use IBM Print Transforms V1.1, and other IBM transform products.

Table 2. Documentation for Infoprint Server and other IBM transform products

Document	Form number
z/OS Infoprint Server Introduction Introduces Infoprint Server. This document contains printing scenarios that show how you can use Infoprint Server in your installation.	S544-5742
z/OS Infoprint Server Customization Describes customization tasks for Infoprint Server. This document describes Infoprint Server environment variables, configuration files, startup procedures, how to write exit routines and filter programs, and how to use the Infoprint Server API.	S544-5744
z/OS Infoprint Server Operation and Administration Describes operators procedures and administrative tasks for Infoprint Server. This document describes how to start and stop Infoprint Server and how operators can use Infoprint Central. It describes how administrators can create entries in the Printer Inventory by using either ISPF panels or the Printer Inventory Definition Utility (PIDU) program and define NetSpool printer LUs to VTAM®.	S544-5745
z/OS Infoprint Server User's Guide Describes user tasks for Infoprint Server. This document describes how to submit print jobs from remote systems (including Windows systems), the local z/OS system, and Virtual Telecommunications Access Method (VTAM) applications. It describes z/OS UNIX commands; the AOPPRINT JCL procedure; the AOPBATCH program; DD and OUTPUT JCL parameters that Infoprint Server supports; and how to download and install the Infoprint Port Monitor for Windows.	S544-5746
z/OS Infoprint Server Messages and Diagnosis Describes messages from Infoprint Server. This document also describes how to use Infoprint Server tracing facilities to diagnose and report errors.	G544-5747
IBM Infoprint Transforms to AFP for z/OS Describes IBM Infoprint Transforms to AFP for z/OS. This document describes using transforms, customizing transforms, administering transforms, diagnosing errors, messages, and migrating from Infoprint Server Transforms V2.	G550-0443

Table 3. Licensed program directories

Licensed program directories	Form number
IBM Print Transform from AFP to PCL for Infoprint Server for z/OS LPS	G325-2635
IBM Print Transform from AFP to PDF for Infoprint Server for z/OS LPS	G325-2636
IBM Print Transform from AFP to PostScript for Infoprint Server for z/OS LPS	G325-2637

Table 4. Program directories

Program directory	Form number
IBM Print Transform from AFP to PCL for Infoprint Server for z/OS	GI11-9843
IBM Print Transform from AFP to PDF for Infoprint Server for z/OS	GI11-9844
IBM Print Transform from AFP to PostScript for Infoprint Server for z/OS	GI11-9845

The z/OS Basic Skills Information Center

The z/OS Basic Skills Information Center is a web-based information resource intended to help users learn the basic concepts of z/OS, the operating system that runs most of the IBM mainframe computers in use today. The Information Center is designed to introduce a new generation of Information Technology professionals to basic concepts and help them prepare for a career as a z/OS professional, such as a z/OS system programmer.

Specifically, the z/OS Basic Skills Information Center is intended to achieve the following objectives:

- Provide basic education and information about z/OS without charge
- Shorten the time it takes for people to become productive on the mainframe
- Make it easier for new people to learn z/OS.

To access the z/OS Basic Skills Information Center, which is available to all users (no login required), go to: http://publib.boulder.ibm.com/infocenter/zos/basics/index.jsp

How to send your comments to IBM

We appreciate your input on this publication. Feel free to comment on the clarity, accuracy, and completeness of the information or give us any other feedback that you might have.

Use one of the following methods to send us your comments:

1. Send an email to printpub@infoprint.com.
2. Visit the Contact z/OS web page at http://www.ibm.com/servers/eserver/zseries/zos/webqs.html.
3. Mail the comments to the following address:
   IBM Corporation
   6300 Diagonal Hwy 002J
   Boulder, CO 80301-9270
   U.S.A.

Include the following information:
- Your name and address
- Your email address
- Your telephone or fax number
- The publication title and order number:
     IBM Print Transforms from AFP for Infoprint Server for z/OS
     G325-2634-02
- The topic and page number related to your comment
- The text of your comment.

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IBM or any other organizations will only use the personal information that you supply to contact you about the issues that you submit.

If you have a technical problem

Do not use the feedback methods listed above. Instead, do one of the following:
- Contact your IBM service representative.
- Call IBM technical support.
- Visit the IBM zSeries® support Web page at http://www.ibm.com/servers/eserver/support/zseries/.

Summary of changes

This document contains terminology, maintenance, and editorial changes to improve consistency and retrievability. Technical additions and changes to the information are indicated with a revision bar (|) to the left of the change.

Print Transforms from AFP for Infoprint Server for z/OS, G325-2634-02

This document contains additions and changes to information that was previously presented in *Print Transforms from AFP for Infoprint Server for z/OS*, G325-2634-01, which supports Version 1 Release 1 of the product. It includes information for functions introduced in APAR OA38585.

General Information:
- All transforms now support enhanced N_UP processing.
- All transforms now support PDF object containers.
- For TrueType, OpenType, and WorldType fonts, all transforms now search all directories specified in the search path. See "AFP system resource directories" on page 64.

New Information:
- Information about the new AOP_EMBED_OUTLINES (AFP to PostScript transform) environment variable has been added. See "Environment variables for the AFP to PostScript transform" on page 108.
- Two new sections, "Setting up security for AFP user path directories" on page 120 and "Using TrueType, OpenType, and WoldType fonts" on page 125, have been added.

Changed and Deleted Information:
- "Software requirements" on page 6 has been updated with PTFs for APAR OA38585 and APAR OA38779.
- "AFP to PostScript transform" on page 17 has been updated.
- Examples showing multiple font directories have been added. See pages 26, 32, and 38.
- The USERPATH JCL parameter has been updated. See page 56.
- "AFP system resource directories" on page 64, "AFP system resource directories" on page 83, and "AFP system resource directories" on page 106 have been updated to reflect multiple font directories.
- Information about the AOP_CUTSHEET (AFP to PDF transform) environment variable was unintentionally removed from the previous edition, but has been returned to the document. For information, see "Environment variables for the AFP to PDF transform" on page 85. The AOP_CUTSHEET environment variable has also been updated in "Environment variables for the AFP to PCL transform" on page 66 and "Environment variables for the AFP to PostScript transform" on page 108.
- The AOP_FONTMAP_TABLE and AOP_FONTPATH have been updated. See "Environment variables for the AFP to PCL transform" on page 66, "Environment variables for the AFP to PDF transform" on page 85, and "Environment variables for the AFP to PostScript transform" on page 108.

- By using a wildcard (*) in the name of the raster font, you can use a single statement to map a typeface family of raster fonts to a corresponding typeface family of outline fonts. This eliminates the need to map every raster font by pitch size to the corresponding outline font. See "Font-mapping table format" on page 122.
- "Sample font-mapping table" on page 123 has been updated with a new example.
- "Trace options" on page 153 has been updated, including the deletion of the **dll** trace option for **-T**.
- The requirement to run `amblist` from UID 0 has been removed in "Finding the current level of support" on page 155.
- Many of the messages are new or updated. See Chapter 6, "Messages," on page 157.
- The procedure in "Editing JCL and scripts" on page 256 has been updated.

Print Transforms from AFP for Infoprint Server for z/OS, G325-2634-01

This document contains additions and changes to information that was previously presented in *Print Transforms from AFP for Infoprint Server for z/OS*, G325-2634-00, which supports Version 1 Release 1 of the product. It includes information for functions introduced in APAR OA35935 and APAR OA35704.

New Information:
- Support for transform error handling has been added, including support for:
  - **fail-on-transform-error** and **trailer-transform-error-page** job attributes
  - **Fail on error** and **Trailer error page** fields in printer definitions
  - AOP_FAIL_ON_ERROR and AOP_TRAILER_ERROR_PAGE environment variables

  See "Transform error handling" on page 5.
- Support for MVS™ style return codes has been added. See "AOP_MVS_RETURN_CODES environment variable" on page 57.
- All transforms can now create color output.
- Support for these fonts has been added:
  - DBCS raster and DBCS outline fonts
  - TrueType, OpenType, and WordType fonts
  - Cyrillic fonts
- All transforms now support Extensible Markup Language (XML) input data.
- All transforms now support record format line data.
- All transforms now support TIFF and GIF object containers.
- A font-mapping function has been added. See "Mapping raster fonts to outline fonts" on page 121.
- IM double dot image controls are now supported.
- Support has been added for these JCL parameters and job attributes:
  - OFFSETXB, OFFSETXF, OFFSETYB, OFFSETYF, OVERLAYB, OVERLAYF, and PRMODE parameters on the OUTPUT JCL statement
  - **overlay-back**, **overlay-front**, **shift-out-shift-in**, **x-image-shift-back**, **x-image-shift-front**, **y-image-shift-back**, and **y-image-shift-front** job attributes
- All transforms support additional bar codes.
- Information about these new transform environment variables has been added:

- AOP_ANNOTATIONS
- AOP_ASSUME_RIDIC_UNPAD
- AOP_COLOR
- AOP_CUTSHEET
- AOP_FAIL_ON_ERROR
- AOP_FAIL_ON_IMAGE_ERROR
- AOP_FONTMAP_TABLE
- AOP_FONTPATH
- AOP_LINEARIZE
- AOP_LINKS
- AOP_OFFSET_JOGGING
- AOP_OUTLINES
- AOP_PJL
- AOP_TRAILER_ERROR_PAGE

For information about environment variables, see:
- "Environment variables for the AFP to PCL transform" on page 66
- "Environment variables for the AFP to PDF transform" on page 85
- "Environment variables for the AFP to PostScript transform" on page 108
- Most of the messages are new or changed. See Chapter 6, "Messages," on page 157.

Chapter 1. Introduction

This chapter introduces Version 1 Release 1 (V1.1) of these products:

- IBM Print Transform from AFP to PCL for Infoprint Server for z/OS (program number 5655-TF2)
- IBM Print Transform from AFP to PDF for Infoprint Server for z/OS (program number 5655-TF1)
- IBM Print Transform from AFP to PostScript for Infoprint Server for z/OS (program number 5655-TF3)

These products provide data-stream transforms that let you transform documents from Advanced Function Presentation (AFP) format to other formats that you can print on non-AFP printers or view with Adobe Reader. You can transform documents from AFP format to:

- Printer Control Language (PCL)
- Portable Document Format (PDF)
- PostScript

Documents in AFP format can contain:

- Mixed Object Document Content Architecture for Presentation (MO:DCA-P) data.
- Line data, which can be traditional line data or record-format line data. An AFP page definition is required to provide data placement and presentation information.
- Extensible Markup Language (XML) data. An AFP page definition is required to provide data placement and presentation information.

Transform names and levels

The names of the transforms from AFP and the levels of data streams that they create are:

This transform:	Transforms AFP to these levels:
AFP to PCL	PCL 5, 5e, or 5c
AFP to PDF	PDF 1.4
AFP to PostScript	PostScript Language Level 3

Using transforms with Infoprint Server

This section describes how you can use the transforms together with Infoprint Server to meet your printing needs. It describes these scenarios:

- Printing AFP documents on PCL printers
- Sending AFP documents as encrypted PDF documents in an email.

Printing AFP documents on PCL printers

A bank creates its loan applications in AFP format for printing on high-speed AFP printers. The company also wants to print these documents at their branch offices. However, the printers at their branch offices can print only PCL data.

Here is how the company can use the AFP to PCL transform together with Infoprint Server to meet its requirement:

1. A batch application running on z/OS creates an AFP document in an output data set on the JES spool. The application's JCL directs the output data set to Infoprint Server to be printed on a PCL printer in the branch office.

2. Infoprint Server determines that the AFP document must be transformed into PCL format before printing and calls the AFP to PCL transform.

3. The AFP to PCL transform uses AFP resources, such as a form definition, fonts, and images from AFP resource libraries, to convert the AFP data to PCL format.

4. Infoprint Server transmits the PCL document over the TCP/IP network to the PCL printer.

Figure 1 shows how to print an AFP document on a PCL printer.
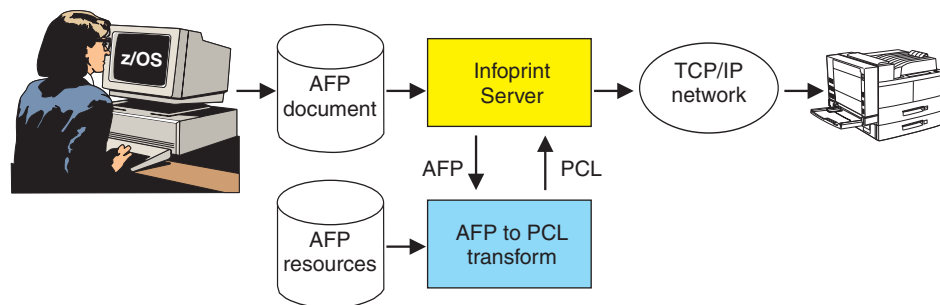
Figure 1. Printing AFP documents on PCL printers

Sending AFP documents as encrypted PDF documents

A hospital creates test results in AFP format. A nurse needs to electronically send a patient's test results to the doctor as a PDF document that only the doctor can read and print. To ensure privacy, the PDF document must be encrypted when sent over the TCP/IP network.

Here is how the company can use the AFP to PDF transform together with Infoprint Server to meet its requirement:

1. A batch application running on z/OS creates an AFP document in an output data set on the JES spool. The application's JCL directs the output data set to Infoprint Server to be sent to the doctor's email address.

2. Infoprint Server determines that the AFP document must be transformed into PDF format and calls the AFP to PDF transform.

3. The AFP to PDF transform uses AFP resources, such as a form definition, fonts, and images from AFP resource libraries, to convert the AFP data to PDF format.

4. The transform determines that the PDF document must be encrypted. It calls its internal encryption services to encrypt the PDF data, and it associates the doctor's password with the PDF document so that only the doctor can use Adobe Reader to open the document.

5. Infoprint Server sends the encrypted PDF document as an email attachment over the TCP/IP network to the doctor's email address.

6. The doctor uses Adobe Reader to open the PDF document with his password. From Adobe Reader, the doctor can print the PDF document. The doctor can also detach the PDF document from the email and save it for future reference.

Figure 2 shows how to send an AFP document as an encrypted PDF document in an email.
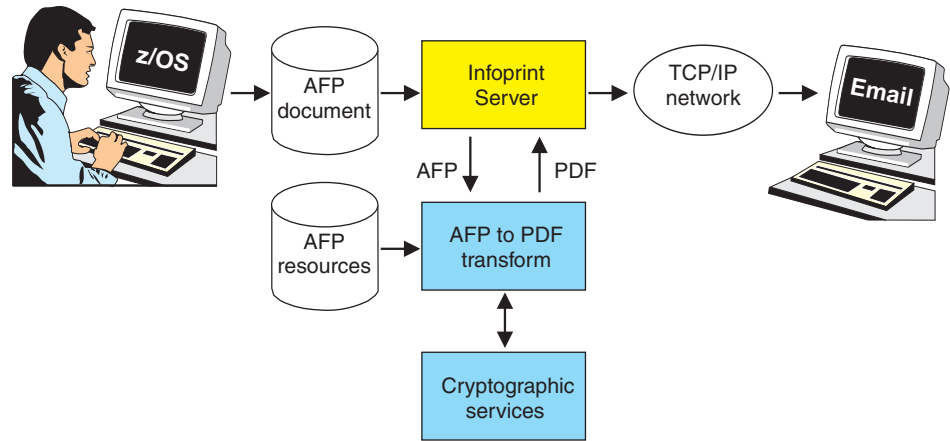
Figure 2. Sending AFP documents as encrypted PDF documents in emails

Methods for transforming documents

You can use either of these methods to transform AFP documents:

z/OS UNIX transform commands

z/OS UNIX System Services users can use transform commands to convert documents from AFP format to another format without printing the documents. You can run the transform commands from the z/OS UNIX command line, or you can use the Infoprint Server AOPBATCH program to run them.

You might want to transform documents without printing them in these situations:

- You intend to print a document many times. In this case, it is more efficient to transform the document once and print the output than to transform the document every time you print it.
- You want to present a document on the web as a PDF document.

You can use these transform commands:

afpxpcl   For AFP to PCL

afpxpdf   For AFP to PDF

afpxps   For AFP to PostScript

The input AFP document and the output document can be in an MVS data set or in a z/OS UNIX file.

For example, to transform the AFP document `myfile.afp` to a PostScript document named `myfile.ps`, enter:

```
afpxps -o myfile.ps myfile.afp
```

Printer definitions

The administrator can specify transform filters in printer definitions in the Infoprint Server Printer Inventory. When you do this, Infoprint Server automatically calls the appropriate transform filter before it prints the document or sends it to an email destination. You use this method when you want to transform and print (or send) documents but not save the transformed output.

For example, suppose that the administrator has configured a printer definition named "myprinter" to use the AFP to PCL transform filter. You can use the z/OS UNIX **lp** command to transform and print an AFP document by using this printer definition. Or, you can transform and print the output of a batch job by using this printer definition. For example:

- To transform and print the AFP document in file `myfile.afp`, enter this z/OS UNIX command:

  ```
  lp -d myprinter myfile.afp
  ```

- To transform and print the AFP document created by a batch program, submit this JCL:

  ```
  //MYJOB    JOB ...
  //STEP1    EXEC PGM=USERA
  //OUTDS1   OUTPUT CLASS=P,FSSDATA='printer=myprinter'
  //DD1      DD SYSOUT=(,),OUTPUT=*.OUTDS1
  ```

This example assumes that Infoprint Server processes output data sets in output class P for the printer definition myprinter.

Specifying transform options

You can use transform options to tell the transforms how you want the data to be transformed from AFP. You can use these methods to specify transform options:

Transform configuration file
> The administrator can specify some transform options in the transform configuration file **aopxfd.conf**. For example, the administrator can specify a default page definition in the AOP_PAGEDEF environment variable.
>
> The administrator can create separate classes of a transform with different transform options in each class. For example, the administrator could create a separate transform class for printers that print on different paper sizes. The administrator names and defines the transform classes in the transform configuration file. To use a transform class that the administrator has defined:
>
> - The administrator can specify the name of the transform class in the **-c** transform option in the printer definition.
> - The job submitter can specify the name of the transform class in the **-c** transform command option.

Transform command options
> You can specify some transform options on the transform commands. For example, when you enter the **afpxpdf** command, you can specify option **-c** *transformclass* to tell the transform the name of a transform class to use.
>
> When you transform and print documents, you can specify transform command options in the **filter-options** job attribute. For example, when you enter the **lp** command, you can specify the **-c** option in the **filter-options** job attribute.

Job attributes and OUTPUT JCL parameters
> You can specify some transform options with Infoprint Server job attributes. For example, you can use the **page-definition** job attribute to tell the transform which page definition to use to format line-data and XML documents. You can specify job attributes on the transform commands, on the **lp** command, and when you submit print jobs from some remote systems. For example, you can specify job attributes when you use the Infoprint Port Monitor for Windows.

Many job attributes have corresponding parameters on the OUTPUT JCL statement. For example, the **page-definition** job attribute is equivalent to the PAGEDEF parameter of the OUTPUT statement. If you need to specify a job attribute that does not have a corresponding parameter on the OUTPUT statement, you can specify the job attribute in the PRTATTRS parameter on the OUTPUT JCL statement.

For information about how to specify Infoprint Server job attributes and how to use the Print Interface subsystem, see *z/OS Infoprint Server User's Guide*.

Transform error handling

You can control how the AFP to PCL, AFP to PDF, and AFP to PostScript transforms handle errors that occur during the transform. You can control whether the transform:

- Stops transforming a document when a data stream error or warning occur. The transform does not create any output. By default, the transforms stop processing when a data stream error occurs but not when a warning occurs.
- Adds a page at the end of the output document with informational, warning, and error messages (called the **trailer page**). By default, the transforms add a trailer page when a data stream warning or error occurs.

Note: If the transform fails because of data stream errors or warnings, it does not create an output document. Therefore, to see a trailer page with error and warning messages, request that the transform does not stop processing when errors or warnings occur (**fail-on-transform-error=no**).

You can control transform error handling in these ways:

- Job submitters can specify the **fail-on-transform-error** and **trailer-transform-error-page** job attributes. For information, see "Job attributes for error handling" on page 41.

  These are some of the ways you can specify job attributes, depending on how you submit the transform or print request:

  – In the **-j** option of the **afpxpcl**, **afpxpdf**, and **afpxps** commands
  – In the PRTATTRS parameter of the OUTPUT JCL statement

  For information, see Chapter 2, "Using transforms," on page 21.
- Administrators can specify the **Fail on error** and **Trailer error page** fields in Infoprint Server printer definitions. For information, see Chapter 4, "Administering transforms," on page 129.
- Administrators can specify the AOP_FAIL_ON_ERROR and AOP_TRAILER_ERROR_PAGE environment variables in the Infoprint Server transform configuration file. For information, see Chapter 3, "Customizing transforms," on page 61.

Table 5 on page 6 shows the job attributes, printer definition fields, and environment variables that you can specify.

Table 5. Transform error handling – job attributes, printer definition fields, and environment variables

Job attribute	Field in printer definition	Transform environment variable
fail-on-transform-error	Fail on error	AOP_FAIL_ON_ERROR
trailer-transform-error-page	Trailer error page	AOP_TRAILER_ERROR_PAGE

The transforms use the values in this order:

1. Job attribute
2. Field in printer definition (print request only)
3. Transform environment variable

Software requirements

The transforms run on all supported releases of z/OS.

This additional IBM software beyond the z/OS base elements is required:
- PTF for APAR OA38585 for Print Transforms from AFP for Infoprint Server for z/OS
- PTF for APAR OA37237 for PRMODE parameters on the OUTPUT JCL statement
- If you run z/OS Infoprint Server V1R13 or earlier, PTF for APAR OA36444 and PTF for APAR OA38779
- If you run z/OS Infoprint Server V1R11 or earlier, PTF for APAR OA32228 for enhanced message support
- IBM XML Toolkit for z/OS, C++ edition, V1.10 (5655-J51) for transforming data from XML
- An AFP page definition, form definition, and font for formatting transform error messages
- AFP resources that are not included inline in AFP documents

AFP font collections

These AFP font collections are recommended:
- AFP Font Collection Version 1 (5648-113) or Version 2 (5648-B33), which contains 240-pel raster fonts, 300-pel raster fonts, and outline fonts
- Sonoran Equivalent Fonts PRPQ 8A5061 (5799-FLK) if documents contain Sonoran Serif or Sonoran Sans Serif fonts
- IBM Infoprint Fonts for z/OS, Version 1 Release 1 Modification 0 (5648–E76). This collection contains updated versions of outline fonts and WorldType fonts (TrueType fonts) for use with printers that support OpenType fonts.

Performance considerations

Transforming documents from the document format in which they were created to another document format uses more system resources than printing the documents on printers that support the original document format.

The impact on system and network resources varies depending on items such as:
- Print volume
- Content of documents being transformed

- Current utilization of the system and network resources

The throughput of the transform varies depending on items such as:
- Document format created
- Size, density, and complexity of the AFP documents

When the AFP to PDF transform encrypts PDF documents, the additional processing might require more system resources and degrade throughput.

In addition, transformed documents are sometimes larger than the original documents.

AFP to PCL transform

The AFP to PCL transform creates PCL 5, 5e, or 5c output. The transform can create monochrome or color output. You can print the PCL output on printers that support PCL 5, 5e, or 5c. A printer that supports PCL 5c is required to print color output.

The AFP to PCL transform converts AFP resources (resources can be inline in the AFP documents or in AFP resource libraries) into PCL format and includes them in the PCL data stream. In addition, the transform converts AFP formatting options, such as paper size and duplexing, to PCL commands. The interpretation of these PCL commands depends on your printer, and unpredictable results can occur if the AFP document requests formatting options that are not installed in the PCL printer.

The AFP to PCL transform uses 240-pel and 300-pel (single-byte and double-byte) raster fonts. The transform includes all raster fonts in the PCL data stream to make sure they are available. The transform converts outline, OpenType, and TrueType fonts to equivalent raster fonts and includes them in the PCL data stream.

When printing images, the transform scales 240-pel images to 300-pel. The printer then scales the images to the resolution of the printer.

The administrator can specify transform options in the transform configuration file, such as the output page size, how to map AFP input tray numbers to paper sizes and PCL tray numbers, and whether to produce monochrome or color output.

Supported objects and controls

The AFP to PCL transform supports these objects and controls:

AFP resources

- Page definitions, including conditional processing, record-format page definitions, and XML page definitions
- Form definitions, including basic N_UP processing, enhanced N_UP processing, and offset stacking
- Overlays
- Page segments
- User resource libraries

  The job submitter must have RACF® authorization to read all AFP resource libraries that the transform uses. For more information, see "Setting up security for AFP resource libraries" on page 119.

Line data

- Carriage control (ANSI, machine)
- CHARS
- Mixed line data and AFP records (including IDM, IMM)
- Record-format line data
- Traditional line data
- Table reference characters
- Shift-out/shift-in for DBCS data: SOSI1, SOSI2, SOSI3, and SOSI4 options

MO:DCA-P objects

- Bar Code Object Content Architecture (BCOCA) (see Table 6 on page 9 for the bar codes that the AFP to PCL transform supports)
- Font Object Content Architecture (FOCA):
  - Single-byte character set (SBCS) fonts:
    - 300-pel raster fonts (fixed and relative metrics)
    - 240-pel raster fonts (fixed and relative metrics)
    - AFP outline fonts
  - Double-byte character set (DBCS) fonts:
    - 300-pel raster fonts (fixed and relative metrics)
    - 240-pel raster fonts (fixed and relative metrics)
    - AFP outline fonts
    - TrueType, OpenType, and WorldType fonts
- Graphic Object Content Architecture (GOCA): All functions

  Note: The transform positions GOCA characters like normal text by using the font size in the GOCA data stream. Characters are not scaled, and the cell size in the GOCA data stream is ignored. The printed output will be similar to the output on most newer IBM AFP printers. This positioning method is likely to produce the most readable output.

- Image (IM): All functions, in single and double dot, in all rotations
- Image Object Content Architecture (IOCA):
  - FS45 tiled, compressed, and uncompressed image objects except: Include Tile parameter, Referencing Tile structure, IOCA Tile Resource structure
  - Uncompressed, compressed MMR, G3, G4, RL4, JPEG baseline and extended
  - IDE 1-8, 24 (lookup table)
- Map Media Type (MMT)
- Object containers for PDF documents and GIF, JFIF, JPEG, and TIFF image objects
- Offset stacking
- Presentation Text Object Content Architecture (PTOCA1, PTOCA2)

XML data

XML data encoded in EBCDIC (code page IBM-1047). The XML data encoding must match the encoding scheme defined in the page definition.

Table 6 on page 9 lists the bar codes that the AFP to PCL transform supports.

Table 6. Bar codes that AFP to PCL transform supports

Code	Bar code type
X'01'	Code 39 (3-of-9 Code), AIM USS-39
X'02'	MSI (modified Plessey code)
X'03'	UPC/CGPC—Version A
X'05'	UPC/CGPC—Version E
X'06'	UPC—Two-digit Supplemental (Periodicals)
X'07'	UPC—Five-digit Supplemental (Paperbacks)
X'08'	EAN-8 (includes JAN-short)
X'09'	EAN-13 (includes JAN-standard)
X'0A'	Industrial 2-of-5
X'0B'	Matrix 2-of-5
X'0C'	Interleaved 2-of-5, AIM USS-I 2/5
X'0D'	Codabar, 2-of-7, AIM USS-Codabar
X'11'	Code 128, AIM USS-128
X'16'	EAN Two-digit Supplemental
X'17'	EAN Five-digit Supplemental
X'18'	POSTNET
X'1A'	RM4SCC
X'1B'	Japan Postal Bar Code
X'1C'	Data Matrix (2D bar code)
X'1D'	MaxiCode (2D bar code)
X'1E'	PDF417 (2D bar code)
X'1F'	Australia Post Bar Code
X'20'	QR code (2D bar code)
X'21'	Code 93
X'22'	USPS Four-State - Intelligent Mail Barcode (IMB)

Limitations for the AFP to PCL transform

This section lists the items in the AFP architecture that the AFP to PCL transform does not currently support. Unsupported items are either ignored or error messages are issued. Because the AFP architecture and PSF continue to be enhanced with new functional capabilities, this list might be incomplete after the publication date. IBM suggests that you test how your AFP applications print on your non-AFP printers to make sure the output is acceptable.

* DATACK JCL parameter and print-error-reporting job attribute (for information about an alternative to the DATACK JCL parameter, see "Migration considerations" on page 256)
* DBCS fonts in XML and record-format line data
* Include Page (IPG)
* Global Resource Identifier (GRID)
* Internal copy groups
* Invoke master environment group (IMG)
* IOCA: ABIC (non-concatenated) image compression

- Map Color Attribute Table (MCA)
- Map Page (MPG)
- Medium Finishing Control (MFC)
- Preprocess Presentation Object (PPO)
- Presentation Fidelity Control (PFC)

Other limitations include:
- The transform might create bar codes that are larger or smaller than the same bar codes printed on AFP printers. The transform creates bar codes with a resolution of 300 pels per inch. Even though the size of bar codes might be different, the bar codes will scan properly.
- The transform does not check all AFP structured fields in the AFP documents for validity. PSF might check additional structured fields for validity when it prints the AFP documents. Therefore, do not use the AFP to PCL transform to determine if PSF can print an AFP document.

AFP to PDF transform

The AFP to PDF transform creates PDF 1.4 output. The transform always creates color output if the AFP document contains color images. You can use Adobe Reader 5.0 (or higher), or a comparable PDF viewer, to view and print the PDF documents.

The AFP to PDF transform converts AFP resources (resources can be inline in the AFP documents or in AFP resource libraries) into PDF format and includes them in the PDF data stream.

The transform does not include some AFP formatting options (such as copies, duplex, input and output bins, finishing, and jogging) in the PDF document. When you print PDF documents, you can use the printer driver options to select options such as copies, duplex, and so on.

For fonts which are mapped to the Adobe Reader base-14 font set, the transform includes only the names of outline fonts in the PDF document. Including only the names of outline fonts reduces the size of PDF documents. For other outline fonts, the outline font is converted to an Adobe Type 1 font and included in the PDF file. For more information, see the AOP_OUTLINE environment variable 93.

If the source font is a raster font and the target font is an outline font, you can customize font-mapping to add custom fonts. For more information, see "Mapping raster fonts to outline fonts" on page 121.

When printing images, the transform does not scale images. The printer scales the images to the resolution of the printer.

The administrator can specify transform options in the transform configuration file, such as the output page size, whether to create enhanced PDF documents (enhanced PDF documents are easier to view and navigate), and whether to encrypt PDF documents. For more information, see the AOP_ROTATE_PDF environment variable 96.

Creating enhanced PDF documents

The AFP to PDF transform can create PDF documents that are easier to view and navigate. The transform can:

- Create PDF bookmarks to help readers navigate through PDF documents. Adobe Reader displays PDF bookmarks in its navigation pane. For example, if the AFP document contains a table of contents, the transform converts it to a set of PDF bookmarks. For more information, see the description of the AOP_INDEX environment variable.
- Create PDF links to let readers jump to another location in a PDF document or to a website. For example, if the AFP document contains references to other locations, the transform converts them to PDF links. If the AFP document contains references to websites, the transform converts them to URLs that link to the websites. For more information, see the description of the AOP_LINKS environment variable.
- Optimize PDF documents for fast viewing from the web. This means that Adobe Reader can display the first page of the PDF document before the entire document has been loaded from a website or a network. For more information, see the description of the AOP_LINEARIZE environment variable.
- Rotate PDF documents for easier viewing. For example, some pages (such as those that contain tables) might require the PDF document to be turned sideways to be read. You can select auto-rotation so that each page is rotated in the same direction as the majority of characters on the page. For more information, see the description of th eAOP_ROTATE_PDF environment variable.

Encrypting PDF documents

The AFP to PDF transform can encrypt PDF documents. Encrypting PDF documents provides enhanced security for sensitive documents.

In addition, the transform can associate user and owner passwords with encrypted PDF documents to prevent unauthorized access, and it can restrict copying, updating, and printing of encrypted PDF documents. For example, a nurse could use the transform to encrypt a patient's test results and send them to the doctor in a PDF document that only the doctor can open and print.

Encryption methods
You can use either or both of these methods to encrypt PDF documents:

Encrypting with passwords
> When you use this method:
> - You can associate a *user password* with the PDF document. The user password lets someone open an encrypted PDF document. A user password is optional. However, it prevents unauthorized users from opening PDF documents.
>
>   **Tip:** In Adobe Reader, the user password is called an *open password*.
> - You can associate an *owner password* with the PDF document. The owner password lets someone open an encrypted PDF document and bypass restrictions. An owner password is optional. However, it is required to restrict actions in PDF documents.
>
>   **Tip:** In Adobe Reader, the owner password is called a *permissions password*.
> - You can restrict actions in the PDF document, or you can allow all actions. Adobe Reader prevents users from doing restricted actions unless the user knows the owner password.
> - You can select the level of encryption:

- A high level of encryption (a 128-bit encryption key) provides enhanced security.
- A low level of encryption lets you send encrypted PDF documents to countries that do not use a high level of encryption or to users with Adobe Reader 3.0 - 4.x.

Encrypting without passwords

When you use this method:

- Anyone can open the PDF document because no user password is associated with it.
- The transform generates an owner password that it uses to restrict actions in the PDF document. Because this owner password is secret, no one can use it to bypass restrictions.
- The transform uses a low level of encryption (a 40-bit encryption key). You cannot select the level of encryption.

Tip: You might want to encrypt PDF documents without passwords so that the administrator does not need to maintain a password database.

Specifying user and owner passwords

For security reasons, job submitters cannot specify user and owner passwords during job submission, and administrators cannot specify passwords in printer definitions. Instead, job submitters and administrators specify user and owner identifiers.

The administrator can decide what identifiers to use. For example, identifiers can be z/OS user IDs, email addresses, or a combination of different types of identifiers. Identifiers can contain any combination of 1-256 letters, numbers, blanks, and special characters.

The administrator must write a Password exit that returns a password to the transform for each user and owner identifier. The Password exit can obtain these passwords from a password database. The password database can be in any format that your Password exit can use. For information, see "Writing a Password exit" on page 98.

Job submitters can specify user and owner identifiers in job attributes **pdf-user-identifier** and **pdf-owner-identifier**. For example, you can specify this **afpxpdf** command:

```
afpxpdf -j "pdf-user-identifier=SMITH pdf-owner-identifier=LEE"
        -o myfile.pdf myfile.afp
```

As an alternative, the administrator can specify user and owner identifiers in printer definitions. For an example, see "Example -- ISPF Processing panel for the AFP to PDF transform" on page 140.

Restricting actions

When you encrypt PDF documents with or without passwords, you can restrict copying, updating, and printing in the PDF documents. Adobe Reader does not permit users to do the restricted actions when they open the PDF document. However, users who open the PDF document with the owner password bypass restrictions.

In Adobe Reader, actions that are restricted are not available. For example, if you restrict printing, the Adobe Reader "Print" menu action is not available. To fully

understand what menu actions Adobe Reader makes not available when you restrict an action, open the PDF document that the transform creates and check what actions Adobe Reader has made not available. PDF viewers other than Adobe Reader might interpret restricted actions in different ways.

You can restrict slightly different sets of actions when you encrypt documents with and without passwords. In addition, the way you specify restricted actions differs.

Encrypting with passwords: When you encrypt PDF documents with passwords, job submitters can specify the restricted actions in the **pdf-protect** job attribute. For example, you can specify this **afpxpdf** command:

```
afpxpdf -j "pdf-user-identifier=SMITH pdf-owner-identifier=LEE
        pdf-protect={copy print update}" -o myfile.pdf myfile.afp
```

For information about the **pdf-protect** job attribute, see "Job attributes for encrypting PDF documents" on page 39.

As an alternative, the administrator can specify restricted actions in printer definitions. For an example, see "Example -- ISPF Processing panel for the AFP to PDF transform" on page 140.

The transform clears these bits in the encryption dictionary's P entry for each restricted action, depending on whether you select a high (128-bit) or low (40-bit) level of encryption:

Restricted action:	Bits:
copy	5 and 10 (high encryption) 5 (low encryption)
print	3 and 12 (high encryption) 3 (low encryption)
update	4, 6, 9, and 11 (high encryption) 4 and 6 (low encryption)

For more information about bits in the encryption dictionary, see the Adobe *PDF Reference*, which is available on the Adobe website (www.adobe.com).

Encrypting without passwords: When you encrypt PDF documents without passwords, the administrator must specify restricted actions in the AOP_PROTECT environment variable in the transform configuration file. For example, the administrator could create a transform class called "nomodify" that restricts users from modifying the PDF documents. To do this, the administrator would specify this environment variable for the transform class:

```
AOP_PROTECT -> "modify"
```

For information about the AOP_PROTECT environment variable, see "Environment variables for the AFP to PDF transform" on page 85.

When you encrypt PDF documents without passwords, job submitters cannot specify restricted actions. However, job submitters can submit transform jobs to the transform class that has the restrictions they want. For example, you can specify this **afpxpdf** command:

```
afpxpdf -c nomodify -o myfile.pdf myfile.afp
```

As an alternative, the administrator can specify a transform class that restricts actions in printer definitions.

The transform clears these bits in the encryption dictionary's P entry for each restricted action:

Restricted action:	Bit:
modify	4
print	3
select	5

For more information about bits in the encryption dictionary, see the Adobe *PDF Reference*, which is available on the Adobe website (www.adobe.com).

Supported objects and controls

The AFP to PDF transform supports these objects and controls:

AFP resources

- Page definitions, including conditional processing, record-format page definitions, and XML page definitions
- Form definitions, including basic N_UP processing and enhanced N_UP processing
- Overlays
- Page segments
- User resource libraries

  The job submitter must have RACF authorization to read all AFP resource libraries that the transform uses. For more information, see "Setting up security for AFP resource libraries" on page 119.

Line data

- Carriage control (ANSI, machine).
- CHARS
- Mixed line data and AFP records (including IDM, IMM).
- Record-format line data.
- Traditional line data
- Table reference characters.
- Shift-out/shift-in for DBCS data: SOSI1, SOSI2, SOSI3, and SOSI4 options.

MO:DCA-P objects

- BCOCA (see Table 7 on page 15 for the bar codes that the AFP to PDF transform supports)
- FOCA:
  - Single-byte (SBCS) fonts:
    - 300-pel raster fonts (fixed and relative metrics)
    - 240-pel raster fonts (fixed and relative metrics)
    - AFP outline fonts
  - Double-byte (DBCS) fonts:
    - 300-pel raster fonts (fixed and relative metrics)
    - 240-pel raster fonts (fixed and relative metrics)
    - AFP outline fonts
    - True Type, Open Type, and World Type fonts
- GOCA: All functions

> **Note:** The transform positions GOCA characters like normal text by using the font size in the GOCA data stream. Characters are not scaled, and the cell size in the GOCA data stream is ignored. The printed output will be similar to the output on most newer IBM AFP printers. This positioning method is likely to produce the most readable output.

- IM: All functions, in single and double dot, in all rotations
- IOCA:
  - FS45 tiled, compressed, and uncompressed image objects except: Include Tile parameter, Referencing Tile structure, IOCA Tile Resource structure
  - Uncompressed, compressed MMR, G3, G4, RL4, JPEG baseline and extended
  - IDE 1-8, 24 (lookup table)
- Link Logical Element (LLE) and Tag Logical Element (TLE) structured fields
- Map Media Type (MMT)
- Object containers for PDF documents and GIF, JFIF, JPEG, and TIFF image objects
- PTOCA1, PTOCA2

XML data
> XML data encoded in EBCDIC (code page IBM-1047). The XML data encoding must match the encoding scheme defined in the page definition.

Table 7 lists the bar codes that the AFP to PDF transform supports.

Table 7. Bar codes that AFP to PDF transform supports

Code	Bar code type
X'01'	Code 39 (3-of-9 Code), AIM USS-39
X'02'	MSI (modified Plessey code)
X'03'	UPC/CGPC—Version A
X'05'	UPC/CGPC—Version E
X'06'	UPC—Two-digit Supplemental (Periodicals)
X'07'	UPC—Five-digit Supplemental (Paperbacks)
X'08'	EAN-8 (includes JAN-short)
X'09'	EAN-13 (includes JAN-standard)
X'0A'	Industrial 2-of-5
X'0B'	Matrix 2-of-5
X'0C'	Interleaved 2-of-5, AIM USS-I 2/5
X'0D'	Codabar, 2-of-7, AIM USS-Codabar
X'11'	Code 128, AIM USS-128
X'16'	EAN Two-digit Supplemental
X'17'	EAN Five-digit Supplemental
X'18'	POSTNET
X'1A'	RM4SCC
X'1B'	Japan Postal Bar Code
X'1C'	Data Matrix (2D bar code)

Table 7. Bar codes that AFP to PDF transform supports (continued)

Code	Bar code type
X'1D'	MaxiCode (2D bar code)
X'1E'	PDF417 (2D bar code)
X'1F'	Australia Post Bar Code
X'20'	QR code (2D bar code)
X'21'	Code 93
X'22'	USPS Four-State - Intelligent Mail Barcode (IMB)

Limitations for the AFP to PDF transform

This section lists the items in the AFP architecture that the AFP to PDF transform does not currently support. Unsupported items are either ignored or error messages are issued. Because the AFP architecture and PSF continue to be enhanced with new functional capabilities, this list might be incomplete after the publication date. IBM suggests that you test how your AFP applications print on your non-AFP printers to make sure the output is acceptable.

- DBCS fonts in XML and record-format line data
- Global Resource Identifier (GRID)
- Include Page (IPG)
- Internal copy groups
- Invoke master environment group (IMG)
- IOCA: ABIC (non-concatenated) image compression
- Map Color Attribute Table (MCA)
- Map Page (MPG)
- Medium Finishing Control (MFC)
- Offset jogging specified in the form definition
- Preprocess Presentation Object (PPO)
- Presentation Fidelity Control (PFC)

Limitations of viewing and searching with Adobe Reader:

- Text that has been generated by using AFP GOCA output graphic characters cannot be found.
- To preserve the output fidelity of a document, corresponding placement of characters is done in the PDF output document, which can result in additional "space" characters in a character string. This restricts the operation of the Adobe find function.
- The AFP representation of a code page might not match its ASCII representation. This can cause problems searching, especially with raster fonts.
- The printed output might be smaller or larger than expected. For example, the output might be 90% of the original size if the **Fit to Page** or **Fit to paper** option is selected in the Adobe Reader Print dialog. To solve this problem, deselect the option.
- Transformed PDF images might look different from the original AFP image, depending on your monitor and printer.
- The transform uses the AFP font encoding to create the PDF document. The characters contained in the document might not be the same as the ASCII character mapping available on the system used for PDF viewing.

- The actual appearance of raster fonts can differ from the printed output. For example, some characters might not be aligned on the character baseline. The appearance might change as higher magnification levels are chosen in Adobe Reader.
- In some versions of Adobe Reader you might need to select **Use Greek text below xx pixels** to see all output.
- PDF documents contains a unique page number identification that is assigned during the creation of the PDF document. This page number might not correspond to the page numbers used in the AFP input document.

Other limitations include:
- The transform might create bar codes that are larger or smaller than the same bar codes printed on AFP printers. The transform creates bar codes with a resolution of 300 pels per inch. Even though the size of bar codes might be different, the bar codes will scan properly.
- The transform does not check all AFP structured fields in the AFP documents for validity. PSF might check additional structured fields for validity when it prints the AFP documents. Therefore, do not use the AFP to PDF transform to determine if PSF can print an AFP document.

AFP to PostScript transform

The AFP to PostScript transform creates PostScript Language Level 3 output. The transform can create monochrome or color output. You can print the PostScript output on printers that support PostScript Language Level 3.

The AFP to PostScript transform converts all AFP resources (resources can be inline in the AFP documents or in AFP resource libraries) into PostScript format and includes them in the PostScript data stream. In addition, the transform converts formatting options in the AFP document, such as paper size and duplexing, to corresponding PostScript commands. The interpretation of these commands depends on your printer, and unpredictable results can occur if the AFP document requests formatting options that are not installed in the PostScript printer.

The AFP to PostScript transform can use 240-pel and 300-pel raster fonts (single-byte or double-byte) and AFP outline fonts (single-byte or double-byte). The transform includes all fonts in the PostScript data stream to make sure they are available.

The AOP_EMBED_OUTLINES environment variable allows the transform to include outline fonts in the PostScript output, which provides improved output fidelity. However, each typeface increases the size of the PostScript output file. For more information, see the AOP_EMBED_OUTLINES environment variable on page 111.

If the source font is a raster font and the target font is an outline font, you can customize font-mapping to add custom fonts. For more information, see "Mapping raster fonts to outline fonts" on page 121.

When printing images, the transform does not scale images. The printer scales the images to the resolution of the printer.

The administrator can specify transform options in the transform configuration file, such as the output page size, how to map AFP input tray numbers to paper sizes and PostScript tray numbers, and whether to produce monochrome or color output.

Supported objects and controls

The AFP to PostScript transform supports these objects and controls:

AFP resources

- Page definitions, including conditional processing, record-format page definitions, and XML page definitions
- Form definitions, including basic N_UP processing, enhanced N_UP processing, and offset stacking
- Overlays
- Page segments
- User resource libraries

    The job submitter must have RACF authorization to read all AFP resource libraries that the transform uses. For more information, see "Setting up security for AFP resource libraries" on page 119.

Line data

- Carriage control (ANSI, machine)
- CHARS
- Mixed line data and AFP records (including IDM, IMM)
- Record-format line data
- Traditional line data
- Table reference characters
- Shift-out/shift-in for DBCS data: SOSI1, SOSI2, SOSI3, and SOSI4 options

MO:DCA-P objects

- BCOCA (see Table 8 on page 19 for the bar codes that the AFP to PostScript transform supports)
- FOCA:
    - Single-byte (SBCS) fonts:
        - 300-pel raster fonts (fixed and relative metrics)
        - 240-pel raster fonts (fixed and relative metrics)
        - AFP outline fonts
    - Double-byte (DBCS) fonts:
        - 300-pel raster fonts (fixed and relative metrics)
        - 240-pel raster fonts (fixed and relative metrics)
        - AFP outline fonts
        - True Type, Open Type, and World Type fonts
- GOCA: All functions

    Note: The transform positions GOCA characters like normal text by using the font size in the GOCA data stream. Characters are not scaled, and the cell size in the GOCA data stream is ignored. The printed output will be similar to the output on most newer IBM AFP printers. This positioning method is likely to produce the most readable output.

- IM: All functions, in single and double dot, in all rotations
- IOCA:
  - FS45 tiled, compressed, and uncompressed image objects except: Include Tile parameter, Referencing Tile structure, IOCA Tile Resource structure
  - Uncompressed, compressed MMR, G3, G4, RL4, JPEG baseline and extended
  - IDE 1-8, 24 (lookup table)
- Map Media Type (MMT)
- Object containers for PDF documents and GIF, JFIF, JPEG, and TIFF image objects
- PTOCA1, PTOCA2

XML data

XML data encoded in EBCDIC (code page IBM-1047). The XML data encoding must match the encoding scheme defined in the page definition.

Table 8 lists the bar codes that the AFP to PostScript transform supports.

Table 8. Bar codes that AFP to PostScript transform supports

Code	Bar code type
X'01'	Code 39 (3-of-9 Code), AIM USS-39
X'02'	MSI (modified Plessey code)
X'03'	UPC/CGPC—Version A
X'05'	UPC/CGPC—Version E
X'06'	UPC—Two-digit Supplemental (Periodicals)
X'07'	UPC—Five-digit Supplemental (Paperbacks)
X'08'	EAN-8 (includes JAN-short)
X'09'	EAN-13 (includes JAN-standard)
X'0A'	Industrial 2-of-5
X'0B'	Matrix 2-of-5
X'0C'	Interleaved 2-of-5, AIM USS-I 2/5
X'0D'	Codabar, 2-of-7, AIM USS-Codabar
X'11'	Code 128, AIM USS-128
X'16'	EAN Two-digit Supplemental
X'17'	EAN Five-digit Supplemental
X'18'	POSTNET
X'1A'	RM4SCC
X'1B'	Japan Postal Bar Code
X'1C'	Data Matrix (2D bar code)
X'1D'	MaxiCode (2D bar code)
X'1E'	PDF417 (2D bar code)
X'1F'	Australia Post Bar Code
X'20'	QR code (2D bar code)
X'21'	Code 93
X'22'	USPS Four-State - Intelligent Mail Barcode (IMB)

Limitations for the AFP to PostScript transform

This section lists the items in the AFP architecture that the AFP to PostScript transform does not currently support. Unsupported items are either ignored or error messages are issued. Because the AFP architecture and PSF continue to be enhanced with new functional capabilities, this list might be incomplete after the publication date. IBM suggests that you test how your AFP applications print on your non-AFP printers to make sure the output is acceptable.

- DATACK JCL parameter and print-error-reporting job attribute (for information about alternatives to the DATACK JCL parameter, see "Migration considerations" on page 256)
- DBCS fonts in XML and record-format line data
- Global Resource Identifier (GRID)
- Include Page (IPG)
- Internal copy groups
- IOCA: ABIC (non-concatenated) image compression
- Invoke master environment group (IMG)
- Map Color Attribute Table (MCA)
- Map Page (MPG)
- Medium Finishing Control (MFC)
- Preprocess Presentation Object (PPO)
- Presentation Fidelity Control (PFC)

Other limitations include:

- The transform might create bar codes that are larger or smaller than the same bar codes printed on AFP printers. The transform creates bar codes with a resolution of 300 pels per inch. Even though the size of bar codes might be different, the bar codes will scan properly.
- The transform does not check all AFP structured fields in the AFP documents for validity. PSF might check additional structured fields for validity when it prints the AFP documents. Therefore, do not use the AFP to PostScript transform to determine if PSF can print an AFP document.

Chapter 2. Using transforms

This chapter describes the z/OS UNIX transform commands that you can use, and the JCL parameters that the transforms use when you submit a batch job.

The transform commands let you convert files from one format to another without printing the files.

For the levels of the data stream files that the transform commands create, see "Transform names and levels" on page 1.

The sections in this chapter are:
- "afpxpcl–Transform AFP data to PCL data" on page 21
- "afpxpdf–Transform AFP data to PDF data" on page 27
- "afpxps–Transform AFP data to PostScript data" on page 33
- "Job attributes for encrypting PDF documents" on page 39
- "Job attributes for error handling" on page 41
- "Transforming data with the AOPBATCH program" on page 42
- "Using JCL to transform and print AFP documents" on page 46
- "AOP_MVS_RETURN_CODES environment variable" on page 57

afpxpcl–Transform AFP data to PCL data

The **afpxpcl** command transforms an Advanced Function Presentation (AFP) data file into a Printer Control Language (PCL) data stream file.

Format

```
afpxpcl [-c transformclass] [-F tracefile] [-i inputcodepage] [-j jobattributes]...
        [-o outputfile] [-T traceoptions] [inputfile ...]
```

Description

The **afpxpcl** command converts an Advanced Function Presentation (AFP) data file into a Printer Control Language (PCL) data stream file.

The transform writes messages related to errors in the input data stream at the end of the output document by default, but you can redirect the messages by specifying the **trailer-transform-error-page** job attribute in the **-j** option. Or, the administrator can redirect the messages by specifying the AOP_TRAILER_ERROR_PAGE environment variable. For information about this environment variable, see "Environment variables for the AFP to PCL transform" on page 66.

Options

-c *transformclass*
> Specifies the name of a transform class that your administrator has defined. The transform class determines options such as:
>
> - The characteristics of the printer, such as how to map AFP tray numbers to printer tray numbers

- The size of paper in each input tray, such as letter, ledger, A4, B4, or B5
- Defaults for page formatting options, such as the default page definition, form definition, and font
- Resource libraries

You do not always have to specify a transform class. If you do need to specify one, however, ask your administrator for the name of a transform class suitable for the printer and the type of job.

-F *tracefile*

Specifies the file in which to store the trace. This option should only be used as instructed by IBM service personnel. For information about this option, see "Trace options" on page 153.

-i *inputcodepage*

This option applies only when you transform line data. If you specify this option for AFP data, it is ignored.

This option identifies the code page to which line data is converted before it is transformed. Specify a code page that corresponds to the coded fonts specified in the page definition or in the **chars** job attribute.

To transform line data that is already encoded in the code page that corresponds to the coded fonts, do *not* specify this option. If this option is not specified, line data is not converted before it is transformed. For example, to transform a line data document that specifies coded fonts in the **chars** job attribute and currently prints correctly on an AFP printer, do *not* specify this option.

You must specify this option to correctly transform documents encoded in code pages that do not correspond to the code page for the coded fonts. This is most likely to occur when you transform an ASCII file.

In the **-i** option, you must specify an IBM-supplied or custom code page that the iconv utility supports. For code page information, see *z/OS XL C/C++ Programming Guide*. To find the AFP code page for each character set, see *IBM AFP Fonts: Font Summary for AFP Font Collection*.

The AFP code page and the name of the code pages that iconv uses are different. Be careful to specify the iconv code page value. For example, if you specify one of the coded fonts in Table 9 in the **chars** job attribute, specify `-i IBM-500`.

Table 9. Coded fonts and corresponding code pages

Coded font	AFP code page	iconv code page
40D0, 40F0, 40E0, 4100	T1V10500	IBM-500
60D9 (default font)	T1V10500	IBM-500

Note: When you specify this option, also make sure that the code page specified in the **document-codepage** job attribute correctly identifies the code page in which the input document is encoded. If you do not specify the **document-codepage** attribute, the default is the code page of the locale, which is typically an EBCDIC code page.

-j *jobattributes*

Specifies an option, that is, one or more attribute value assignments in the

format *attribute*=*value*, separated by spaces. You can specify **-j** multiple
times. If job attributes are repeated, the last value specified for the attribute
is used.

- If a value contains spaces, enclose the value in single or double
  quotation marks:

```
attribute='value with spaces'
attribute="value with spaces"
```

- If an option contains spaces or characters that might be interpreted by
  the shell (such as **$ & ( ) > < | ' "**), enclose the option in single quotation
  marks:

```
-j 'attribute1=value1 attribute2=value2'
-j 'attribute='value with spaces''
-j 'attribute=value(1)'
```

For information about how the shell interprets special characters, see
z/OS UNIX System Services User's Guide.

- If both value and option require quotation marks, do either of these:
  - Use two pairs of double quotation marks and place a backslash before
    each quotation mark that surrounds the value:

```
-j "attribute=\"value with spaces\""
```

  - Use different quotation marks around the option and value. For
    example:

```
-j 'attribute="value with spaces"'
-j "attribute='value with spaces'"
```

Instead of entering a string of attributes on the command line, you can
store attributes and values in a file. You use a special attribute called
`attributes` to specify the file.

You can specify any of these attributes, which apply to all files to be
transformed with the command:

>   carriage-control-type
>   chars
>   document-codepage
>   document-format
>   duplex
>   fail-on-transform-error
>   form-definition
>   input-tray-number
>   output-bin-number
>   overlay-back
>   overlay-front
>   page-definition
>   resource-directories
>   resource-library
>   shift-out-shift-in
>   table-reference-characters
>   trailer-transform-error-page
>   x-image-shift-back
>   x-image-shift-front
>   y-image-shift-back
>   y-image-shift-front

For more information about the attributes, see *z/OS Infoprint Server User's
Guide*.

-o *outputfile*

Specifies the output path and file into which the transform output (that is, PCL data) is written. The transform overwrites any existing data in the output file. If you do not specify an output file, the result is written to standard output (STDOUT).

To specify an MVS data set, such as a sequential or partitioned data set, precede the data set name with **//**. When you specify a fully qualified name, two sets of quotation marks are required. For example, `"//'hlq.PDS(MYDOC)'"` or `"//'hlq.SEQDS'"`. When you specify a partially qualified name, you only need one set of quotation marks. For example, `"//PDS(MYDOC)"` or `"//SEQDS"`.

If you specify an MVS data set, you need to allocate the data set before you run this command, especially when you transform a large document. Allocate a data set that is large enough to hold the output data stream. The size of the output data stream depends on the complexity of the document. Allocate the output data set with these characteristics:
- Record-format: VB
- Record length: 32756 is recommended. If a record length other than 1024 is specified, change environment variable AOP_MAX_RECORD_LENGTH to this new length.

-T *traceoptions*

Specifies the trace options. This should only be used as instructed by IBM service personnel. For information about this option, see "Trace options" on page 153.

Tip: You can use the **filter-options** job attribute with, for example, the **lp** command to pass the **-c** *transformclass* and **-i** *inputcodepage* options to the transform. For information about the **filter-options** job attribute, see *z/OS Infoprint Server User's Guide*.

Operand

inputfile

Specifies an input file to be transformed. If you specify more than one input file name, the **afpxpcl** command concatenates the files. The results are written to a single output file (if one is specified in **-o**) or to standard output.

If you do not specify an input file, or if you specify a dash (**-**) for the file name, **afpxpcl** uses standard input.

To specify an MVS data set, precede the data set name with **//**. When you specify a fully qualified name, two sets of quotation marks are required. For example, `"//'hlq.PDS(MYDOC)'"` or `"//'hlq.SEQDS'"`. When you specify a partially qualified name, you only need one set of quotation marks. For example, `"//PDS(MYDOC)"` or `"//SEQDS"`.

Usage notes

- If you specify multiple values of the same option, except for **-j**, the transform uses the last value that you specified.
- When transforming line data in UNIX files that contain ANSI or no carriage control characters, you must specify **document-format=line**. If the data has ANSI control characters, also specify **carriage-control-type=ansi**.

| • When transforming XML data, make sure an XML declaration statement is the
| first line in the input file. For example: `<?xml version "1.0"`
| `encoding="IBM-1047"?>`. You can also specify **document-format=xml**.

Examples -- afpxpcl

Transform an AFP UNIX file, specifying a transform class and output file
> To transform the AFP UNIX file `myfile.afp` into an output PCL file called
> `myfile.pcl`, using the us transform class, enter:
>
> ```
> afpxpcl -c us -o myfile.pcl myfile.afp
> ```

Transform an AFP MVS data set, specifying a form definition
> To transform the AFP MVS data set `USERX.AFP(MYFILE)` into an output PCL
> file called `myfile.pcl`, using the form definition F1CP0110, enter:
>
> ```
> afpxpcl -j "form-def=f1cp0110" -o myfile.pcl "//'USERX.AFP(MYFILE)'"
> ```

Transform an AFP UNIX file, specifying a form definition and a resource library
> To transform the AFP UNIX file `myfile.afp` into an output PCL file called
> `myfile.pcl`, using the form definition F1CP0110 that contains references to
> user-supplied AFP resources, enter this command on one line:
>
> ```
> afpxpcl -j "form-def=f1cp0110 res-lib={lib1.pseglib lib3.private}"
>         -o myfile.pcl myfile.afp
> ```

Transform and print an AFP MVS data set, specifying a form definition and a resource library
> To transform the AFP MVS data set `PROD.AFPOUT(JOB1)` into a PCL file,
> using the form definition F1CP0110 that contains references to user-supplied
> AFP resources, and print the output, enter this command on one line:
>
> ```
> afpxpcl -j "form-def=f1cp0110 res-lib={lib1.pseglib lib3.private}"
>       "//'PROD.AFPOUT(JOB1)'" | lp -d myprinter
> ```

Transform a job using redirection
> To transform the AFP file `input.afp` into the PCL output file called
> `output.pcl`, enter:
>
> ```
> afpxpcl < input.afp > output.pcl
> ```
>
> **Note:** You can use redirection operators only with UNIX files.

Transform multiple files and concatenate the output
> To transform the AFP files `input.01.afp`, `input.02.afp`, ... `input.xx.afp`
> into one PCL output file called `output.pcl`, enter:
>
> ```
> afpxpcl -o output.pcl input.01.afp input.02.afp ... input.xx.afp
> ```

Transform an AFP UNIX file to an MVS data set
> To transform the line data file `input.line` into an MVS PCL output data
> set called *hlq*`.OUTPUT.PCL(MYDOC)`, enter:
>
> ```
> afpxpcl -j doc-format=line -o "//'hlq.OUTPUT.PCL(MYDOC)'" input.line
> ```

Transform an AFP MVS data set, writing the output to a UNIX file
> To transform the AFP MVS data set `HLQ.INPUT.LINE(MYDOC)` into an output
> file called `output.pcl`, enter:
>
> ```
> afpxpcl -o output.pcl "//'hlq.INPUT.LINE(MYDOC)'"
> ```

Transform line data, specifying a form definition and a page definition
> To transform line data in file `myfile.line` that contains ANSI carriage
> control characters into an output PCL file called `myfile.pcl`, using the
> form definition F1CP0110 and page definition P1P06362, enter this
> command on one line:

```
afpxpcl -j "form-def=f1cp0110 page-def=p1p06362 c-c-t=a doc-format=line"
          -o myfile.pcl myfile.line
```

Transform line data, specifying a form definition and fonts

To transform the line data file myfile.line containing machine carriage
control characters and table reference characters into an output PCL file
called myfile.pcl, using the form definition F1CP0110, enter this command
on one line:

```
afpxpcl -j "form-def=f1cp0110 c-c-t=m t-r-c=yes chars={60D8 60D0}"
          -o myfile.pcl myfile.line
```

Transform an AFP MVS data set and receive MVS return codes

To transform the AFP MVS data set HLQ.INPUT.LINE(MYDOC) into an output
file called output.pcl and receive MVS return codes (0, 4, 8), enter:

```
AOP_MVS_RETURN_CODES=YES afpxpcl -o output.pcl "//'hlq.INPUT.LINE(MYDOC)'"
```

MVS return codes indicate whether the transform was successful (0), a
transform warning occurred (4), or a transform error occurred (8).

Transform an AFP document with TrueType fonts in multiple font directories

To transform an AFP document with TrueType fonts that are found in
external resource directories:

```
afpxpcl -j "resource-directories={/usr/lpp/fontpath1 /usr/lpp/fontpath2}" -o myfile.pcl myfile.afp
```

Environment variables

The **afpxpcl** command uses these environment variables:

AOPCONF   Names the Infoprint Server configuration file. This variable takes
                precedence over the user-specific configuration file
                (**$HOME/.aopconf**) and the system default configuration file
                (**/etc/Printsrv/aopd.conf**). For more information about the
                configuration file, see *z/OS Infoprint Server Customization*.

AOP_MVS_RETURN_CODES
                Specifies whether the command returns MVS return codes (0, 4, 8)
                or UNIX exit values (0, 1). The default is UNIX exit values.

LIBPATH   The path used to locate dynamic link libraries (DLLs).

NLSPATH   Names the directory paths that the **afpxpcl** command searches for
                message catalogs.

For information about setting and using environment variables, see *z/OS UNIX
System Services User's Guide*.

Files

$HOME/.aopconf
                Contains the user-specific Infoprint Server configuration file. This file takes
                precedence over **/etc/Printsrv/aopd.conf**.

/etc/Printsrv/aopd.conf
                Contains the system default Infoprint Server configuration file.

For the format of the configuration file, see *z/OS Infoprint Server Customization*.

Exit values

MVS return codes:
0   Successful.

| 4 | A warning occurred during the transform. |
| 8 | The command was not accepted, a data stream error occurred during the transform, or the transform failed. |

UNIX exit values (default):

| 0 | The data was transformed successfully. However, the output document might contain error messages related to errors in the input data stream. |
| >0 | An error occurred. No output document was created. |

Notes:

1. The AOP_MVS_RETURN_CODES environment variable determines the type of exit values.

2. The AOP_FAIL_ON_ERROR environment variable controls whether the transform fails when it detects a data stream warning or error.

afpxpdf–Transform AFP data to PDF data

The **afpxpdf** command transforms an Advanced Function Presentation (AFP) data file into an Adobe Portable Document Format (PDF) data stream file for printing or emailing.

Format

afpxpdf [**-c** *transformclass*] [**-F** *tracefile*] [**-i** *inputcodepage*] [**-j** *jobattributes*]...
       [**-o** *outputfile*] [**-T** *traceoptions*] [*inputfile*]

Description

The **afpxpdf** command converts an Advanced Function Presentation (AFP) data file into an Adobe Portable Document Format (PDF) data stream file for printing or emailing.

The transform writes messages related to errors in the input data stream at the end of the output document by default, but you can redirect the messages by specifying the **trailer-transform-error-page** job attribute in the **-j** option. Or, the administrator can redirect the messages by specifying the AOP_TRAILER_ERROR_PAGE environment variable. For information about this environment variable, see "Environment variables for the AFP to PDF transform" on page 85.

Options

-c *transformclass*
> Specifies the name of a transform class that your administrator has defined. The transform class determines options such as:
> - The characteristics of the printer, such as how to map AFP tray numbers to printer tray numbers
> - The size of paper in each input tray, such as letter, ledger, A4, B4, B5, or a custom paper size
> - Defaults for page formatting options, such as the default page definition, form definition, and font
> - Resource libraries
> - Whether PDF encryption is enabled

You do not always have to specify a transform class. If you do need to specify one, however, ask your administrator for the name of a transform class suitable for the printer and the type of job.

-F *tracefile*

Specifies the file in which to store the trace. This should only be used as instructed by IBM service personnel. For information about this option, see "Trace options" on page 153.

-i *inputcodepage*

This option applies only when you transform line data. If you specify this option for AFP data, it is ignored.

This option identifies the code page to which line data is converted before it is transformed. Specify a code page that corresponds to the coded fonts specified in the page definition or in the **chars** job attribute.

To transform line data that is already encoded in the code page that corresponds to the coded fonts, do *not* specify this option. If this option is not specified, line data is not converted before it is transformed. For example, to transform a line data document that specifies coded fonts in the **chars** job attribute and currently prints correctly on an AFP printer, do *not* specify this option.

You must specify this option to correctly transform documents encoded in code pages that do not correspond to the code page for the coded fonts. This is most likely to occur when you transform an ASCII file.

In the **-i** option, you must specify an IBM-supplied or custom code page that the iconv utility supports. For code page information, see *z/OS XL C/C++ Programming Guide*. To find the AFP code page for each character set, see *IBM AFP Fonts: Font Summary for AFP Font Collection*.

The AFP code page and the name of the code pages that iconv uses are different. Be careful to specify the iconv code page value. For example, if you specify one of the coded fonts in Table 9 on page 22 in the **chars** job attribute, specify `-i IBM-500`.

Note: When you specify this option, also make sure that the code page specified in the **document-codepage** job attribute correctly identifies the code page in which the input document is encoded. If you do not specify the **document-codepage** attribute, the default is the code page of the locale, which is typically an EBCDIC code page.

-j *jobattributes*

Specifies an option, that is, one or more attribute value assignments in the format *attribute=value*, separated by spaces. You can specify **-j** multiple times. If job attributes are repeated, the last value specified for the attribute is used.

- If a value contains spaces, enclose the value in single or double quotation marks:

```
attribute='value with spaces'
attribute="value with spaces"
```

- If an option contains spaces or characters that might be interpreted by the shell (such as **$ & ( ) > < | ' "**), enclose the option in single or double quotation marks:

```
-j 'attribute1=value1 attribute2=value2'
-j "attribute='value with spaces'"
-j "attribute=value(1)"
```

For information about how the shell interprets special characters, see *z/OS UNIX System Services User's Guide*.

- If both value and option require quotation marks, do either of these:
  - Use two pairs of double quotation marks and place a backslash before each quotation mark that surrounds the value:

    ```
    -j "attribute=\"value with spaces\""
    ```
  - Use different quotation marks around the option and value. For example:

    ```
    -j 'attribute="value with spaces"'
    -j "attribute='value with spaces'"
    ```

Instead of entering a string of attributes on the command line, you can store attributes and values in a file. You use a special attribute called `attributes` to specify the file.

You can specify any of these attributes, which apply to all files to be transformed with the command:

    carriage-control-type
    chars
    document-codepage
    document-format
    duplex
    fail-on-transform-error
    form-definition
    input-tray-number
    output-bin-number
    overlay-back
    overlay-front
    page-definition
    pdf-encryption-level
    pdf-owner-identifier
    pdf-protect
    pdf-user-identifier
    resource-directories
    resource-library
    shift-out-shift-in
    table-reference-characters
    trailer-transform-error-page
    x-image-shift-back
    x-image-shift-front
    y-image-shift-back
    y-image-shift-front

For more information about the attributes, see *z/OS Infoprint Server User's Guide*. For information about the attributes beginning with "**pdf-**", see "Job attributes for encrypting PDF documents" on page 39.

-o *outputfile*

Specifies the output path and file into which the transform output (that is, PDF data) is written. The transform overwrites any existing data in the output file. If you do not specify an output file, the result is written to standard output (STDOUT).

To specify an MVS data set, such as a sequential or partitioned data set, precede the data set name with **//**. When you specify a fully qualified name, two sets of quotation marks are required. For example,

"//'*hlq*.PDS(MYDOC)'" or "//'*hlq*.SEQDS'". When you specify a partially qualified name, you only need one set of quotation marks. For example, "//PDS(MYDOC)" or "//SEQDS".

If you specify an MVS data set, you need to allocate the data set before you run this command, especially when you transform a large document. Allocate a data set that is large enough to hold the output data stream. The size of the output data stream depends on the complexity of the document. Allocate the output data set with these characteristics:
- Record-format: VB
- Record length: 32756 is recommended. If a record length other than 1024 is specified, change environment variable AOP_MAX_RECORD_LENGTH to this new length.

-T *traceoptions*
Specifies the trace options. This should only be used as instructed by IBM service personnel. For information about this option, see "Trace options" on page 153.

Tip: You can use the **filter-options** job attribute with, for example, the **lp** command to pass the **-c** *transformclass* and **-i** *inputcodepage* options to the transform. For information about the **filter-options** job attribute, see *z/OS Infoprint Server User's Guide*.

Operand

inputfile
Specifies an input file to be transformed. If you specify more than one input file name, the **afpxpdf** command will fail.

If you do not specify an input file, or if you specify a dash (**-**) for the file name, **afpxpdf** uses standard input.

To specify an MVS data set, precede the data set name with **//**. When you specify a fully qualified name, two sets of quotation marks are required. For example, "//'hlq.pds(MYDOC)'" or "//'hlq.seqds'". When you specify a partially qualified name, you only need one set of quotation marks. For example, "//pds(MYDOC)" or "//seqds".

Usage notes

- If you specify multiple values of the same option, except for **-j**, the transform uses the last value that you specified.
- When transforming line data in UNIX files that contain ANSI or no carriage control characters, you must specify **document-format=line**. If the data has ANSI control characters, also specify **carriage-control-type=ansi**.
- When transforming XML data, make sure an XML declaration statement is the first line in the input file. For example: <?xml version "1.0" encoding="IBM-1047"?>. You can also specify **document-format=xml**.

Examples -- afpxpdf

Transform an AFP UNIX file, specifying a transform class and output file
To transform the AFP UNIX file myfile.afp into an output PDF file called myfile.pdf, using the us transform class, enter:

    afpxpdf -c us -o myfile.pdf myfile.afp

Transform an AFP MVS data set, specifying a form definition

To transform the MVS data set USERX.AFP(MYFILE) into an output PDF file called myfile.pdf, using the form definition F1C10110, enter:

```
afpxpdf -j "form-def=f1c10110" -o myfile.pdf "//'USERX.AFP(MYFILE)'"
```

Transform an AFP UNIX file, specifying a form definition and a resource library

To transform the AFP UNIX file myfile.afp into an output PDF file called myfile.pdf, using the form definition F1C10110 that contains references to user-supplied AFP resources, enter this command on one line:

```
afpxpdf -j "form-def=f1c10110 res-lib={lib1.pseglib lib3.private}"
        -o myfile.pdf myfile.afp
```

Transform a job using redirection

To transform the UNIX AFP file input.afp into the PDF output file called output.pdf, enter:

```
afpxpdf < input.afp > output.pdf
```

Note: You can use redirection operators only with UNIX files.

Transform a UNIX AFP file to an MVS data set

To transform the line data file input.line into an AFP MVS PDF output data set called HLQ.OUTPUT.PDF(MYDOC), enter:

```
afpxpdf -j doc-format=line -o "//'HLQ.OUTPUT.PDF(MYDOC)'" input.line
```

Transform an AFP MVS data set, writing the output to a UNIX file

To transform the AFP MVS data set *hlq*.INPUT.LINE(MYDOC) into an output file called output.pdf, enter:

```
afpxpdf -o output.pdf "//'HLQ.INPUT.LINE(MYDOC)'"
```

Transform line data, specifying a form definition and a page definition

To transform the line data file myfile.line that contains ANSI carriage control characters into an output PDF file called myfile.pdf, using the form definition F1C10110 and page definition P1P06362, enter this command on one line:

```
afpxpdf -j "form-def=f1c10110 page-def=p1p06362 c-c-t=a doc-format=line"
        -o myfile.pdf myfile.line
```

Transform line data for viewing in landscape orientation

To transform the line data file myfile.line that contains ANSI carriage control characters into a PDF file that you can view with Adobe Reader in the landscape direction, enter this command on one line:

```
afpxpdf -j "form-def=f10101la page-def=p1a06462 c-c-t=a doc-format=line"
        -o myfile.pdf myfile.line
```

Transform line data, specifying a form definition, a page definition, and fonts

To transform the line data file myfile.line containing machine carriage control characters and table reference characters into an output PDF file called myfile.pdf, using the form definition F1C10110 and page definition F1P06362, enter this command on one line:

```
afpxpdf -j "form-def=f1c10110 page-def=p1p06362 c-c-t=m t-r-c=yes chars={60D8 60D0}"
        -o myfile.pdf myfile.line
```

Transform line data, specifying a page definition and print offset

To transform the line data file myfile.line containing machine carriage control characters into an output PDF file called myfile.pdf, using the page definition P1P06362 and positioning the output 24 millimeters (approximately one inch) from the left edge of the paper, enter this command on one line:

```
afpxpdf -j "page-def=p1p06362 c-c-t=m x-image-shift-front=24"
                -o myfile.pdfmyfile.line
```

Transform an AFP file, encrypting the PDF document and specifying restrictions

To transform the AFP file `myfile.afp` into an output PDF file called `myfile.pdf`, encrypting the PDF document and specifying that the user cannot print or change the encrypted PDF document, enter this command on one line:

```
afpxpdf -j "pdf-owner-identifier='Nurse-Lee' pdf-user-identifier='Dr-Smith'
                pdf-protect={print update}" -o myfile.pdf myfile.afp
```

Transform an AFP MVS data set and receive MVS return codes

To transform the MVS data set `USERX.AFP(MYFILE)` into an output PDF file called `myfile.pdf` and receive MVS return codes (0, 4, 8), enter:

```
AOP_MVS_RETURN_CODES=YES afpxpdf -o myfile.pdf "//'USERX.AFP(MYFILE)'"
```

MVS return codes indicate whether the transform was successful (0), a transform warning occurred (4), or a transform error occurred (8).

Transform an AFP document with TrueType fonts in multiple font directories

To transform an AFP document with TrueType fonts that are found in external resource directories:

```
afpxpdf -j "resource-directories={/usr/lpp/fontpath1 /usr/lpp/fontpath2}" -o myfile.pdf myfile.afp
```

Environment variables

The **afpxpdf** command uses these environment variables:

AOPCONF Names the Infoprint Server configuration file. This variable takes precedence over the user-specific configuration file (**$HOME/.aopconf**) and the system default configuration file (**/etc/Printsrv/aopd.conf**). For more information about the configuration file, see *z/OS Infoprint Server Customization*.

AOP_MVS_RETURN_CODES
Specifies whether the command returns MVS return codes (0, 4, 8) or UNIX exit values (0, 1). The default is UNIX exit values.

LIBPATH The path used to locate dynamic link libraries (DLLs).

NLSPATH Names the directory paths that the **afpxpdf** command searches for message catalogs.

For information about setting and using environment variables, see *z/OS UNIX System Services User's Guide*.

Files

$HOME/.aopconf
Contains the user-specific Infoprint Server configuration file. This file takes precedence over **/etc/Printsrv/aopd.conf**.

/etc/Printsrv/aopd.conf
Contains the system default Infoprint Server configuration file.

For the format of the configuration files, see *z/OS Infoprint Server Customization*.

Exit values

MVS return codes:
0   Successful.

| **4** | A warning occurred during the transform. |
| **8** | The command was not accepted, a data stream error occurred during the transform, or the transform failed. |

UNIX exit values (default):

| **0** | The data was transformed successfully. However, the output document might contain error messages related to errors in the input data stream. |
| **>0** | An error occurred. No output document was created. |

Notes:

1. The AOP_MVS_RETURN_CODES environment variable determines the type of exit values.

2. The AOP_FAIL_ON_ERROR environment variable controls whether the transform fails when it detects a data stream warning or error.

afpxps–Transform AFP data to PostScript data

The **afpxps** command converts an Advanced Function Presentation (AFP) data file into a PostScript data stream file.

Format

```
afpxps [-c transformclass] [-F tracefile] [-i inputcodepage] [-j jobattributes]...
       [-o outputfile] [-T traceoptions] [inputfile ...]
```

Description

The **afpxps** command converts an Advanced Function Presentation (AFP) data file into a PostScript data stream file.

The transform writes messages related to errors in the input data stream at the end of the output document by default, but you can redirect the messages by specifying the **trailer-transform-error-page** job attribute in the **-j** option. Or, the administrator can redirect the messages by specifying the AOP_TRAILER_ERROR_PAGE environment variable. For information about this environment variable, see "Environment variables for the AFP to PostScript transform" on page 108.

Options

-c *transformclass*

Specifies the name of a transform class that your administrator has defined. The transform class determines options such as:

- The characteristics of the printer, such as how to map AFP tray numbers to printer tray numbers
- The size of paper in each input tray, such as letter, ledger, A4, B4, B5, or a custom paper size
- Defaults for page formatting options, such as the default page definition, form definition, and font
- Resource libraries

You do not always have to specify a transform class. If you do need to specify one, however, ask your administrator for the name of a transform class suitable for the printer and the type of job.

-F *tracefile*

Specifies the file in which to store the trace. This should only be used as instructed by IBM service personnel. For information about this option, see "Trace options" on page 153.

-i *inputcodepage*

This option applies only when you transform line data. If you specify this option for AFP data, it is ignored.

This option identifies the code page to which line data is converted before it is transformed. Specify a code page that corresponds to the coded fonts specified in the page definition or in the **chars** job attribute.

To transform line data that is already encoded in the code page that corresponds to the coded fonts, do *not* specify this option. If this option is not specified, line data is not converted before it is transformed. For example, to transform a line data document that specifies coded fonts in the **chars** job attribute and currently prints correctly on an AFP printer, do *not* specify this option.

You must specify this option to correctly transform documents encoded in code pages that do not correspond to the code page for the coded fonts. This is most likely to occur when you transform an ASCII file.

In the **-i** option, you must specify an IBM-supplied or custom code page that the iconv utility supports. For code page information, see *z/OS XL C/C++ Programming Guide*. To find the AFP code page for each character set, see *IBM AFP Fonts: Font Summary for AFP Font Collection*.

The AFP code page and the name of the code pages that iconv uses are different. Be careful to specify the iconv code page value. For example, if you specify one of these coded fonts in Table 9 on page 22 in the **chars** job attribute, specify `-i IBM-500`.

Note: When you specify this option, also make sure that the code page specified in the **document-codepage** job attribute correctly identifies the code page in which the input document is encoded. If you do not specify the **document-codepage** attribute, the default is the code page of the locale, which is typically an EBCDIC code page.

-j *jobattributes*

Specifies an option, that is, one or more attribute value assignments in the format *attribute=value*, separated by spaces. You can specify **-j** multiple times. If job attributes are repeated, the last value specified for the attribute is used.

- If a value contains spaces, enclose the value in single or double quotation marks:

```
attribute='value with spaces'
attribute="value with spaces"
```

- If an option contains spaces or characters that might be interpreted by the shell (such as **$ & ( ) > < | ' "**), enclose the option in single or double quotation marks:

```
-j 'attribute1=value1 attribute2=value2'
-j "attribute='value with spaces'"
-j "attribute=value(1)"
```

For information about how the shell interprets special characters, see *z/OS UNIX System Services User's Guide*.

- If both value and option require quotation marks, do either of these:

– Use two pairs of double quotation marks and place a backslash before each quotation mark that surrounds the value:

```
-j "attribute=\"value with spaces\""
```

– Use different quotation marks around the option and value. For example:

```
-j 'attribute="value with spaces"'
-j "attribute='value with spaces'"
```

Instead of entering a string of attributes on the command line, you can store attributes and values in a file. You use a special attribute called `attributes` to specify the file.

You can specify any of these attributes, which apply to all files to be transformed with the command:

carriage-control-type
chars
document-codepage
document-format
duplex
fail-on-transform-error
form-definition
input-tray-number
output-bin-number
overlay-back
overlay-front
page-definition
pdf-encryption-level
pdf-owner-identifier
pdf-protect
pdf-user-identifier
resource-directories
resource-library
shift-out-shift-in
table-reference-characters
trailer-transform-error-page
x-image-shift-back
x-image-shift-front
y-image-shift-back
y-image-shift-front

For more information about the attributes, see *z/OS Infoprint Server User's Guide*.

-o *outputfile*

Specifies the output path and file into which the transform output (that is, PostScript data) is written. The transform overwrites any existing data in the output file. If you do not specify an output file, the result is written to standard output (STDOUT).

To specify an MVS data set, such as a sequential or partitioned data set, precede the data set name with **//**. When you specify a fully qualified name, two sets of quotation marks are required. For example, `"//'hlq.PDS(MYDOC)'"` or `"//'hlq.SEQDS'"`. When you specify a partially qualified name, you only need one set of quotation marks. For example, `"//PDS(MYDOC)"` or `"//SEQDS"`.

If you specify an MVS data set, you might need to allocate the data set before you run this command, especially when you transform a large document. Allocate a data set that is large enough to hold the output data

stream. The size of the output data stream depends on the complexity of the document. Allocate the output data set with these characteristics:

- Record-format: VB
- Record length: 32756 is recommended. If a record length other than 1024 is specified, change environment variable AOP_MAX_RECORD_LENGTH to this new length.

-T *traceoptions*

Specifies the trace options. This should only be used as instructed by IBM service personnel. For information about this option, see "Trace options" on page 153.

Tip: You can use the **filter-options** job attribute with, for example, the **lp** command to pass the **-c** *transformclass* and **-i** *inputcodepage* options to the transform. For information about the **filter-options** job attribute, see *z/OS Infoprint Server User's Guide*.

Operand

inputfile

Specifies an input file to be transformed. If you specify more than one input file name, the **afpxps** command concatenates the files. The results are written to a single output file (if one is specified in **-o**) or to standard output.

If you do not specify an input file, or if you specify a dash (**-**) as the file name, **afpxps** uses standard input.

To specify an MVS data set, precede the data set name with **//**. When you specify a fully qualified name, two sets of quotation marks are required. For example, `"//'hlq.pds(MYDOC)'"` or `"//'hlq.seqds'"`. When you specify a partially qualified name, you only need one set of quotation marks. For example, `"//pds(MYDOC)"` or `"//seqds"`.

Usage notes

- If you specify multiple values of the same option, except for **-j**, the transform uses the last value that you specified.
- When transforming line data in UNIX files that contain ANSI or no carriage control characters, you must specify **document-format=line**. If the data has ANSI control characters, you must also specify **carriage-control-type=ansi**.
- When transforming XML data, make sure an XML declaration statement is the first line in the input file. For example: `<?xml version "1.0" encoding="IBM-1047"?>`. You can also specify **document-format=xml**.

Examples -- afpxps

Transform a UNIX AFP file, specifying a transform class and output file

To transform the UNIX AFP file `myfile.afp` into an output PostScript file called `myfile.ps`, using the `us` transform class, enter:

```
afpxps -c us -o myfile.ps myfile.afp
```

Transform an AFP MVS data set, specifying a form definition

To transform the AFP MVS data set `USERX.AFP(MYFILE)` into an output PostScript file called `myfile.ps`, using the form definition F1CP0110, enter:

```
afpxps -j "form-def=f1cp0110" -o myfile.ps "//'USERX.AFP(MYFILE)'"
```

Transform a UNIX AFP file, specifying a form definition and a resource library

To transform the a UNIX AFP file `myfile.afp` into an output PostScript file called `myfile.ps`, using the form definition F1CP0110 that contains references to user-supplied AFP resources, enter this command on one line:

```
afpxps -j "form-def=f1cp0110 res-lib={lib1.pseglib lib3.private}"
       -o myfile.ps myfile.afp
```

Transform and print an AFP MVS data set, specifying a form definition and a resource library

To transform the AFP MVS data set `PROD.AFPOUT(JOB1)` into a PostScript file, using the form definition F1CP0110 that contains references to user-supplied AFP resources, and print the output, enter this command on one line:

```
afpxps -j "form-def=f1cp0110 res-lib={lib1.pseglib lib3.private}"
   "//'PROD.AFPOUT(JOB1)'" | lp -d myprinter
```

Transform a job using redirection

To transform the AFP file `input.afp` into the PostScript output file called `output.ps`, enter:

```
afpxps < input.afp > output.ps
```

Note: You can use redirection operators only with UNIX files.

Transform multiple files and concatenate the output

To transform the UNIX AFP files `input.01.afp`, `input.02.afp`, ... `input.xx.afp` into one PostScript output file called `output.ps`, enter:

```
afpxps -o output.ps input.01.afp input.02.afp ... input.xx.afp
```

Transform a UNIX AFP file to an MVS data set

To transform the line data file `input.line` into an MVS PostScript output data set called *hlq*`.OUTPUT.PS(MYDOC)`, enter:

```
afpxps -j doc-format=line -o "//'hlq.OUTPUT.PS(MYDOC)'" input.line
```

Transform an AFP MVS data set, writing the output to a UNIX file

To transform the AFP MVS data set *hlq*`.INPUT.LINE(MYDOC)`, where *hlq* is your user ID, into a PostScript output file called `output.ps`, enter:

```
afpxps -o output.ps "//'hlq.INPUT.LINE(MYDOC)'"
```

Transform line data, specifying a form definition and a page definition

To transform the line data file `myfile.line` that contains ANSI carriage control characters into an output PostScript file called `myfile.ps`, using the form definition F1CP0110 and page definition P1P06362, enter this command on one line:

```
afpxps -j "form-def=f1cp0110 page-def=p1p06362 c-c-t=a doc-format=line"
     -o myfile.ps myfile.line
```

Transform line data, specifying a page definition and fonts

To transform the line data file `myfile.line` containing machine carriage control characters and table reference characters into an output PostScript file called `myfile.ps`, using the page definition P1P06362, enter this command on one line:

```
afpxps -j "page-def=p1p06362 c-c-t=m t-r-c=yes chars={60D8 60D0}"
       -o myfile.ps myfile.line
```

Transform line data, specifying a form definition and a page definition

To transform the line data file `myfile.line` that contains ANSI carriage control characters into an output PostScript file called `myfile.ps`, using the form definition F1CP0110 and page definition P1P06362, enter this command on one line:

```
afpxps -j "form-def=f1cp0110 page-def=p1p06362 c-c-t=a doc-format=line"
      -o myfile.ps myfile.line
```

Transform line data and receive MVS return codes

To transform the line data file `myfile.line` into a PostScript file and write
the result to a file called `myfile.ps` and receive MVS return codes (0, 4, 8),
enter:

```
AOP_MVS_RETURN_CODES=YES afpxps -o myfile.ps myfile.line
```

MVS return codes indicate whether the transform was successful (0), a
transform warning occurred (4), or a transform error occurred (8).

Transform an AFP document with TrueType fonts in multiple font directories

To transform an AFP document with TrueType fonts that are found in
external resource directories:

```
afpxps -j "resource-directories={/usr/lpp/fontpath1 /usr/lpp/fontpath2}" -o myfile.ps myfile.afp
```

Environment variables

The **afpxps** command uses these environment variables:

AOPCONF   Names the Infoprint Server configuration file. This variable takes
precedence over the user-specific configuration file
(**$HOME/.aopconf**) and the system default configuration file
(**/etc/Printsrv/aopd.conf**). For more information about the
configuration file, see *z/OS Infoprint Server Customization*.

AOP_MVS_RETURN_CODES

Specifies whether the command returns MVS return codes (0, 4, 8)
or UNIX exit values (0, 1). The default is UNIX exit values.

LIBPATH   The path used to locate dynamic link libraries (DLLs).

NLSPATH   Names the directory paths that the **afpxps** command searches for
message catalogs.

For information about setting and using environment variables, see *z/OS UNIX
System Services User's Guide*.

Files

$HOME/.aopconf

Contains the user-specific Infoprint Server configuration file. This file takes
precedence over **/etc/Printsrv/aopd.conf**.

/etc/Printsrv/aopd.conf

Contains the system default Infoprint Server configuration file.

For the format of the configuration files, see *z/OS Infoprint Server Customization*.

Exit values

MVS return codes:

0   Successful.

4   A warning occurred during the transform.

8   The command was not accepted, a data stream error occurred during the
transform, or the transform failed.

UNIX exit values (default):

0   The data was transformed successfully. However, the output document might contain error messages related to errors in the input data stream.

>0   An error occurred. No output document was created.

Notes:

1. The AOP_MVS_RETURN_CODES environment variable determines the type of exit values.
2. The AOP_FAIL_ON_ERROR environment variable controls whether the transform fails when it detects a data stream warning or error.

Job attributes for encrypting PDF documents

This section describes the job attributes that you can use to encrypt PDF documents with the AFP to PDF transform. Encrypting a PDF document protects it from unauthorized access. For example, a nurse encrypts a patient's test results with the transform and sends them electronically to the doctor as a PDF document that only the doctor can read.

pdf-encryption-level

This **single-valued** attribute specifies the level of encryption used to encrypt PDF documents. A high level of encryption provides enhanced security. However, some users might not be able to open PDF documents that use a high level of encryption.

Allowed values

You can enter one of these fixed values:

bits40 A low level of encryption (a 40-bit encryption key) is used. Select this value if you send PDF documents in an email to countries that do not use 128-bit encryption, or for Adobe Reader 3.0 - 4.x.

bits128
A high level of encryption (a 128-bit encryption key) is used. Select this value for sensitive PDF documents.

Default value

bits128

pdf-owner-identifier

This **single-valued** attribute specifies the identifier of the owner of an encrypted PDF document. The owner identifier is associated with a password that is stored in a separate database. An owner password is required to restrict actions with the **pdf-protect** attribute.

Allowed values

You can enter a text string of 1 - 256 characters. You can enter any combination of letters, numbers, blanks, and special characters that the Password exit allows. Your administrator sets up the Password exit. This text string might be case-sensitive, depending on the Password exit. If the text string you specify contains blanks or special characters (such as **@ $ & ( ) > < | ' " #**), enclose the text string in single quotation marks. For example:

```
-j 'pdf-owner-identifier='Nurse-Lee@hospital.com''
```

If the string contains double quotation marks, enclose the string in single quotation marks.

Default value

The owner identifier that the administrator has specified in the printer definition. If none is specified, there is no default.

Usage guidelines

- The transform encrypts a PDF document when a user identifier, an owner identifier, or both is specified. Encrypting a PDF document protects it from unauthorized access.
- The user and owner identifiers should be different because the passwords must be different.

pdf-protect

This **multi-valued** attribute specifies one or more actions that users cannot do on encrypted PDF documents.

Allowed values

You can enter one or more fixed values to restrict actions (see Table 10). If you specify more than one value, separate the values with spaces and enclose the list of values in braces {}. For example:

```
-j "pdf-protect=all"
-j "pdf-protect={copy update}"
```

Table 10. pdf–protect values

Value:	Actions users cannot do:
all	• All actions (copy, print, update)
copy	• Copy or extract content to another document • Extract content for accessibility
print	• Print at low resolution (150 dpi) • Print at high resolution
update	• Change the document • Assemble the document (insert, delete, rotate pages) • Add comments • Fill in form fields or sign • Create template pages

Default value

The value that the administrator has specified in the printer definition. If none is specified, no actions are restricted.

pdf-user-identifier

This **single-valued** attribute specifies the identifier of the user of an encrypted PDF document. The user identifier is associated with a password that is stored in a separate database. The user enters the user password when opening the encrypted PDF document.

Allowed values

You can enter a text string of 1 - 256 characters. You can enter any combination of letters, numbers, blanks, and special characters that the Password exit allows. Your administrator sets up the Password exit. This text string might be case-sensitive, depending on the Password exit. If the text string you specify contains blanks or special characters (such as **@ $ & ( ) > < | ' " #**), enclose the text string in single or double quotation marks. For example:

```
-j "pdf-user-identifier='Dr-Smith@hospital.com'"
```

If the string contains double quotation marks, enclose the string in single quotation marks.

Default value
The user identifier that the administrator has specified in the printer definition. If none is specified, any user can open the PDF document without a password.

Usage guidelines
- The transform encrypts a PDF document when a user identifier, an owner identifier, or both is specified. Encrypting a PDF document protects it from unauthorized access.
- The user and owner identifiers should be different because the passwords must be different.

Job attributes for error handling

This section describes the job attributes that you can use to control transform error handling. For more information, see "Transform error handling" on page 5.

fail-on-transform-error

This **single-valued** attribute indicates whether transforms fail when data stream errors or warnings occur. Warnings can indicate degraded output.

Allowed values
You can enter one of these fixed values:

error   The transform fails when an error occurs and does not create an output document. However, the transform continues if warnings occur.

no   The transform continues processing when a warning or error occurs and creates an output document.

warning
>The transform fails when a warning or error occurs and does not create an output document.

Note: If the transform fails because of data stream errors or warnings, it does not create an output document. Therefore, to see a trailer page with error and warning messages, specify **fail-on-transform-error=no**.

Default value
1. The value in the **Fail on error** field in the printer definition for the printer.
2. The value in the AOP_FAIL_ON_ERROR environment variable for the transform.
3. The **error** value.

trailer-transform-error-page

This **single-valued** attribute indicates whether the transform writes messages for data stream errors and warnings to a trailer page. The trailer page is the last page in the output document. Warnings can indicate degraded output.

Allowed values
You can enter one of these fixed values:

error   The transform writes messages to a trailer page when an error occurs. This

option does not apply when **fail-on-transform-error=error** or **fail-on-transform-error=warning** because no output document is created when an error occurs.

no The transform does not write messages to a trailer page.

warning
The transform writes messages to a trailer page when an error or warning occurs. This option does not apply when **fail-on-transform-error=warning** because no output document is created when an error or warning occurs.

Note: If the transform fails because of data stream errors or warnings, it does not create an output document. Therefore, to see a trailer page with error and warning messages, specify **fail-on-transform-error=no**.

Default value
1. The value selected in the **Trailer error page** field in the printer definition for the printer.
2. The value in the AOP_TRAILER_ERROR_PAGE environment variable for the transform.
3. The **warning** value.

Transforming data with the AOPBATCH program

This section describes how to use the Infoprint Server AOPBATCH program to run the transform commands.

The AOPBATCH program lets you submit a batch job to transform data from AFP. Infoprint Server provides the AOPBATCH program in SYS1.LINKLIB.

AOPBATCH parameters

The AOPBATCH parameters are the name of the transform command, followed by transform options and arguments, in this format:

```
EXEC PGM=AOPBATCH,PARM='/transform_name transform_options'
```

/ The optional slash indicates that the PARM data that follows is input to AOPBATCH. If you omit the initial slash, your PARM data will be interpreted as Language Environment® run-time options. You *must* include the initial slash if any of the PARM data itself includes a slash. For example, if the transform name is /mylib/afpxps, specify: PARM='//mylib/afpxps ...'.

transform_name
The name of an executable transform program that resides in a z/OS UNIX file. The name of the transform program is case-sensitive. You can specify one of these command names: **afpxpcl, afpxpdf, afpxps**.

If the transform program does not reside in one of the directories specified in the PATH environment variable, also specify the path name. You can use the STDENV DD statement to set the PATH environment variable if the default value set by AOPBATCH is not suitable. For information about the defaults set for environment variables, see "AOPBATCH DD statements" on page 43.

transform_options
Options and arguments accepted by the transform. For a description of each, see "afpxpcl–Transform AFP data to PCL data" on page 21, "afpxpdf–Transform AFP data to PDF data" on page 27, or "afpxps–Transform AFP data to PostScript data" on page 33.

You must specify the transform input data set or file as a transform argument, and you must specify the **-o** transform option to identify where you want the transform to write its output. (This is because the transform cannot write its output to standard output and cannot read input from standard input.) To identify the transform input and output data set or file, you can specify either a DD statement name or a data set or file name. You must specify a DD statement name if you want to write the transform output to an MVS data set that does not already exist.

Specify the names of DD statements to the transform in this format:

```
//DD:DDname
```

The name of the DD statement is *DDname*.

When you specify an MVS data set name in the **-o** option, code two slashes before the data set name and enclose the data set name in two sets of single quotation marks if you specify a fully qualified data set name. If you do *not* enclose the data set name in quotation marks, a high-level qualifier is added to the name you specify:

- If you are running under TSO (batch or interactive), the TSO user prefix is appended.
- If you are running under MVS batch or IMS™ (batch or online), the RACF user ID is appended.
- If your system does not use RACF, a high-level qualifier is not added.

For examples of different ways to specify transform input and output data sets and files, see "AOPBATCH examples" on page 44.

AOPBATCH DD statements

The AOPBATCH JCL procedure accepts these standard DD statements:

STDENV

Specifies environment variables for use by the transform. You can specify the environment variables in-stream in the JCL, in an MVS data set, or in a UNIX file. Specify the environment variables in the format *variable=value*, with one environment variable per line or record. Sequence numbers in columns 73 - 80 in data specified with the STDENV DD statement are ignored and *not* treated as part of the data.

If you omit the STDENV DD statement or do not specify one of the environment variables, AOPBATCH sets these default values, which are suitable for running Infoprint Server programs if your installation installed Infoprint Server files in the default directories:

```
PATH=/usr/lpp/Printsrv/bin:/bin:/usr/bin
LIBPATH=/usr/lpp/Printsrv/lib:/lib:/usr/lib
NLSPATH=/usr/lpp/Printsrv/%L/%N:/usr/lpp/Printsrv/En_US/%N:/usr/lib/nls/msg/%L/%N
```

AOPBATCH also sets the HOME environment variable to the user's home directory and sets the LOGIN variable to the user ID.

Notes:

1. To obtain MVS return codes (0, 4, 8) instead of the default UNIX exit values (0, 1), set the AOP_MVS_RETURN_CODES=yes environment variable. For information, see "AOP_MVS_RETURN_CODES environment variable" on page 57

2. Do *not* specify the _BPX_SHAREAS environment variable. AOPBATCH will set it appropriately.

STDERR

Specifies the system output data set where error messages are to be written. The data set can be an MVS data set or a UNIX file. The transforms do not write messages related to errors in the input data stream in this data set. Instead, the transforms write these messages at the end of the output document.

STDOUT

Specifies the system output data set where informational messages are to be written. The data set can be an MVS data set or a UNIX file.

You can also include DD statements to specify MVS data sets that contain input data to be transformed, the transformed output, or job attributes that are input to the transform.

Rules:

1. Do not use DD names STDIN, STDOUT, or STDERR to specify the transform input and output data sets. Instead, use other DD names, such as INPUT and OUTPUT, which are used in the example.

2. If you have not added the Language Environment run-time library (CEE.SCEERUN) or the C++ run-time library (CBC.SCLBDLL) to the system LNKLST, specify these data sets in a STEPLIB DD statement.

3. You can concatenate input data sets that have the same data format; for example, PostScript data or AFP data. However, you *cannot* concatenate data sets that contain PDF data.

4. If you want to write the output data stream to an MVS data set, allocate and catalog the data set before you run AOPBATCH, or include a DD statement in the AOPBATCH job to allocate the data set. Allocate a data set with these characteristics:
   - Record-format: VB
   - Record length: 32756 is recommended. If a record length other than 1024 is specified, change environment variable AOP_MAX_RECORD_LENGTH to this new length.
   - Disposition: SHR or OLD overwrites any existing data in the data set; MOD appends the output to any existing data. MOD is the default.

   The MVS output data set must be large enough to hold the output data stream. The size of the output data stream depends on the size and complexity of the document.

AOPBATCH examples

These examples show how to use the AOPBATCH procedure to transform data. For additional AOPBATCH examples, see *z/OS Infoprint Server User's Guide*.

Transform an AFP MVS data set into a PDF file using AOPBATCH

This example shows how to use the AOPBATCH procedure to transform data.

The transform input is in an MVS data set and transform output is written to a UNIX file. The AFP to PDF transform reads the AFP input from data set HLQ.INPUT.AFP and writes PDF output to file **/tmp/output.pdf**.

```
//AOPBATCH JOB  ...
//TRANSFRM EXEC PGM=AOPBATCH,PARM='/afpxpdf -o /tmp/output.pdf -j "form
//           -definition=F1CP0110" "//''HLQ.INPUT.AFP''"'
//STDOUT   DD   SYSOUT=*
//STDERR   DD   SYSOUT=*
AOP_MVS_RETURN_CODES=YES
```

Transform and print data sets only if the transform is successful

This example shows how to transform data and print the output from the transform in a subsequent step only if no warnings or errors occur during the transform.

In the first step, the AFP to PostScript transform reads AFP input from data set HLQ.INPUT.AFP and writes PostScript output to data set HLQ.OUTPUT.PS, where HLQ represents the high-level qualifier.

The STDENV data set specifies the AOP_MVS_RETURN_CODES environment variable. Because this variable is set to YES, the transform returns MVS return codes: 0 (successful), 4 (warning), 8 (failure).

In the second step, the AOPPRINT JCL procedure prints the PostScript output to the printer named mypsfprinter, which is defined in the Printer Inventory. This step runs only if the return code from the transform step is less than 4.

For information about AOPPRINT, see *z/OS Infoprint Server User's Guide*.

```
//AOPBATCH JOB  ...
//TRANSFRM EXEC PGM=AOPBATCH,PARM='/afpxps -o //DD:OUTPUT //DD:INPUT'
//INPUT    DD   DSN=HLQ.INPUT.AFP,DISP=SHR
//OUTPUT   DD   DSN=HLQ.OUTPUT.PS,DISP=(NEW,CATLG,DELETE),
// DCB=(RECFM=VBM,LRECL=32756,BLKSIZE=32760),SPACE=(CYL,(1,1))
//STDOUT   DD   SYSOUT=*
//STDERR   DD   SYSOUT=*
//STDENV   DD   *
AOP_MVS_RETURN_CODES=YES
/*
//PRINT    EXEC AOPPRINT,PRINTER='mypsfprinter',
// COND=(4,LT,TRANSFRM)
//SYSIN    DD   DSN=HLQ.OUTPUT.PS,DISP=SHR
```

Continuing parameter fields in JCL

To continue a parameter field:

1. Interrupt the field after a complete parameter or subparameter, including the comma that follows it, at or before column 71.
2. Code // in columns 1 and 2 of the following statement.
3. Code a blank character in column 3 of the following statement.
4. Continue the interrupted parameter or field beginning in any column from 4 through 16.

To continue a parameter that is enclosed in apostrophes:

1. Extend the parameter to column 71. Do not code an apostrophe in column 71.
2. Code // in columns 1 and 2 of the following statement.
3. Continue the parameter in column 16 of the following statement even if this splits the parameter.

AOPBATCH exit values

AOPBATCH returns one of these values:

Value   Meaning

1   An error occurred while AOPBATCH was trying to write to the STDOUT DD.

2   An error occurred while AOPBATCH was trying to write to the STDERR DD.

| **4** AOPBATCH could not spawn the process.

| *nn* The exit value from the transform command.

The transforms return either MVS return codes (0, 4, 8) or UNIX exit values (0, 1) depending on the value of the AOP_MVS_RETURN_CODES environment variable. If the environment variable is not set, the transforms return UNIX exit values.

Using JCL to transform and print AFP documents

This section describes the parameters on the DD and OUTPUT JCL statements that the transforms use. These JCL parameters apply to output data sets that Infoprint Server automatically transforms from AFP format to another format.

Many of these JCL parameters have corresponding job attributes. For example, the PAGEDEF parameter of the OUTPUT JCL statement is equivalent to the **page-definition** job attribute. If both the JCL PAGEDEF parameter and **page-definition** job attribute are specified, the job attribute takes precedence.

If you need to specify job attributes that do not have corresponding JCL parameters, you can specify them in the PRTATTRS parameter on the OUTPUT JCL statement.

Figure 3 summarizes the JCL parameters. All parameters are optional.

For more information about JCL parameters, see *z/OS MVS JCL Reference*.

```
DD JCL Statement:

CHARS=(font_name1[,font_name2][,font_name3][,font_name4])
DCB
FCB=fcb_name
UCS=font_name

OUTPUT JCL Statement:

CHARS=(font_name1[,font_name2][,font_name3][,font_name4])
DUPLEX={NO | NORMAL | TUMBLE}
FCB=fcb_name
FORMDEF=form_definition_name
INTRAY=nnn
OFFSETXB=nnnn[.mmm]unit
OFFSETXF=nnnn[.mmm]unit
OFFSETYB=nnnn[.mmm]unit
OFFSETYF=nnnn[.mmm]unit
OUTBIN=1-65 535
OVERLAYB=overlay_name
OVERLAYF=overlay_name
PAGEDEF=page_definition_name
PRMODE={SOSI1 | SOSI2 | SOSI3 | SOSI4}
PRTATTRS='attribute=value ...'
TRC={YES | NO}
UCS=font_name
USERLIB=(library_name[,...])
USERPATH=(path_name)
```

Figure 3. Summary of JCL parameters

In most cases, transforms interpret the parameters in the same way as PSF for z/OS does, so that you can use the same JCL that you use when the output is

printed on AFP printers that PSF controls. These parameters have different characteristics when used with these transforms:

- **CHARS:** If the page definition used to print the job is the system default page definition and the page definition specifies a font, the transforms do not use the font specified in the CHARS parameter. Instead, the transforms use the font in the page definition. PSF, on the other hand, uses the font specified in the CHARS parameter.

- **DCB=RECFM:** When transforming XML data, if the RECFM subparameter indicates that the data set contains carriage control characters, the transforms do not transform the first character of each record. PSF, on the other hand, ignores the RECFM subparameter and always prints the first character of each XML record. Typically, XML data sets do not contain carriage control characters. Therefore, when printing XML data, do not specify a record-format that indicates carriage controls.

The parameters you can specify are:

CHARS=(*font_name1***[,***font_name2***][,***font_name3***][,***font_name4***])**

Specifies the 4-character name of the coded font that you want to use to print a data set that contains line data. You can specify up to four fonts.

font_name
   Specifies the name of a coded font (in a font library) containing 4 or fewer characters, not including the prefix.

   Tip: Some coded fonts have 6-character names, not counting the prefix. For these coded fonts, see *IBM AFP Fonts: Font Summary for AFP Font Collection* for the 4-character alternate coded font name.

When you uses CHARS to specify the coded-font name, do not include the 2-character prefix of the member name (X0 through XG).

Coded fonts that can be used with the CHARS parameter are supplied with the IBM AFP Font Collection. The fonts you specify must reside in a font library assigned to the transform in the transform configuration file or in a user library specified with the USERLIB JCL parameter, or else they must be inline with the data set. For details about available fonts and the naming conventions, see *IBM AFP Fonts: Font Summary for AFP Font Collection*.

If you specify more than one font with the JCL CHARS parameter, you must use the TRC parameter to tell these transforms which font to use for each line of data.

If the page definition specifies fonts, the transforms ignore the CHARS parameter.

Default: The transforms use the first value found in this order:
   1. The font specified in the page definition.
   2. The font specified in the UCS JCL parameter.
   3. The font specified in the printer definition.
   4. The default page definition if IP PrintWay™ basic mode processes the data set. However, JES does not provide a default page definition if you use IP PrintWay extended mode or the Print Interface subsystem.
   5. The font specified in the Infoprint Server transform configuration file.

6. Font X060D9.

Examples:
1. `//DD1 DD CHARS=(GT10,GT12)`
2. `//OUTDS OUTPUT CHARS=(GT10,GT12)`

DCB

RECFM Specifies the record-format of the data set, including whether the data set contains carriage control characters.

OPTCD=J
Specifies whether the print data set contains table reference characters (TRCs). This is the same as **TRC=YES**. For more information, see the TRC parameter on page 54.

DUPLEX={NO | NORMAL | TUMBLE}
Specifies whether printing is to be done on both sides of each sheet.

NO The job is printed only on the front side of each sheet.

NORMAL
The job is printed on both sides of the sheet so that the top of side 1 is the top of side 2 (for side binding).

TUMBLE
The job is printed on both sides of the sheet so that the top of side 1 is the bottom of side 2 (for top binding).

Tip: The administrator can limit the value that you can specify in this parameter. If you specify a value that is not allowed, the data set might not print.

Default: The transforms use the first value found in this order:
1. The duplex option specified in the printer definition
2. The duplex option specified in the form definition

Example: `//OUTDS OUTPUT DUPLEX=NORMAL`

FCB=*fcb_name*
Specifies the 1 to 4 character name of the page definition. The transforms add the prefix P1 to the FCB name you specify. Therefore, do not specify the prefix P1.

You can also specify the name of the page definition in the PAGEDEF parameter. If you specify both the FCB and the PAGEDEF parameters, the transforms ignore the FCB parameter. For more information, see the PAGEDEF parameter.

FORMDEF=*form_definition_name*
Specifies the name (from 1 to 6 alphanumeric or national characters) of the form definition you want to use. Omit the system prefix, F1, from the name. These transforms add F1 to the name you specify.

You can store the form definition that you use in any of these places:
- In a system library assigned to these transforms
- In a user library referred to in the printer definition
- In a user library referred to in your JCL
- Inline in the print data set

Using form definitions from a user library
You can instruct these transforms to select a form definition from

your user library rather than from a system library assigned to these transforms. To use a form definition from a user library:

- Refer to the user library containing the form definition in your JCL. For details, see the USERLIB parameter.
- Specify the name of the form definition in the JCL FORMDEF parameter.

Using inline form definitions

To use an inline form definition:

- Include the inline form definition in the print data set.
- If you specify the FORMDEF parameter, make sure that the name of the inline form definition matches the form definition name that you specified, or else specify FORMDEF=DUMMY. If you do not specify the FORMDEF parameter, these transforms select the first inline form definition in the print data set.
- Make sure that the data set is identified as containing carriage control characters.

You can include more than one inline form definition in a print data set, and you can change the form definition name in the JCL for different printing jobs to test different form definitions. If the name of an inline form definition does not match the FORMDEF name specified in the JCL, these transforms use the form definition from the resource library that matches the name in the JCL.

Default: The transforms use the first value found in this order:

1. The form definition specified in the printer definition
2. The first inline form definition
3. The form definition specified in the Infoprint Server transform configuration file
4. Form definition F1CP0111

Example: To specify F1USER10 as the form definition, enter:

```
//OUTDS OUTPUT FORMDEF=USER10
```

INTRAY=*nnn*

Specifies the 1 to 3 decimal digit number from 1 to 255 that identifies the tray from which paper is to be selected. These transforms map this tray number to the tray number of the PCL or PostScript printer, using tray-mapping values specified by the administrator in the transform configuration file. For more information about tray mapping, see input-tray-number in *z/OS Infoprint Server User's Guide*.

Default: The transforms use the first value found in this order:

1. The input tray specified in the printer definition
2. The input tray selected in the AFP data stream
3. The input tray specified in the form definition
4. Tray 1

Example: `//OUTDS OUTPUT INTRAY=4`

OFFSETXB=*nnnn***[.***mmm***]***unit*

Specifies the X offset of the logical page origin to the right of the physical page origin on the back side of a double-sided sheet.

For unit, specify one of these units:

Unit	Meaning
IN	Specifies a unit of inches
CM	Specifies a unit of centimeters
MM	Specifies a unit of millimeters
PELS	Specifies a unit of picture elements (1/240 inch)
POINTS	Specifies a unit of points (1/72 inch)

Note: If you specify the unit as PELS or POINTS, you must specify the value as a whole number with no decimal point.

Default: The transforms use the first value found in this order:
1. The offset specified in the printer definition
2. The offset specified in the form definition

OFFSETXF=_nnnn_**[.**_mmm_**]**_unit_

Specifies the X offset of the logical page origin to the right of the physical page origin on the front of the sheet.

For unit, specify one of these:

IN	Specifies a unit of inches
CM	Specifies a unit of centimeters
MM	Specifies a unit of millimeters
PELS	Specifies a unit of picture elements (1/240 inch)
POINTS	Specifies a unit of points (1/72 inch)

Note: If you specify the unit as PELS or POINTS, you must specify the value as a whole number with no decimal point.

Default: The transforms use the first value found in this order:
1. The offset specified in the printer definition
2. The offset specified in the form definition

OFFSETYB=_nnnn_**[.**_mmm_**]**_unit_

Specifies the Y offset of the logical page origin below the physical page origin on the back side of a double-sided sheet.

For unit, specify one of these:

IN	Specifies a unit of inches
CM	Specifies a unit of centimeters
MM	Specifies a unit of millimeters
PELS	Specifies a unit of picture elements (1/240 inch)
POINTS	Specifies a unit of points (1/72 inch)

Note: If you specify the unit as PELS or POINTS, you must specify the value as a whole number with no decimal point.

Default: The transforms use the first value found in this order:

1. The offset specified in the printer definition
2. The offset specified in the form definition

OFFSETYF=_nnnn_**[.**_mmm_**]**_unit_

Specifies the offset in the Y direction of the logical page origin below the physical page origin on the front of the sheet.

For unit, specify one of these:

IN   Specifies a unit of inches

CM   Specifies a unit of centimeters

MM   Specifies a unit of millimeters

PELS   Specifies a unit of picture elements (1/240 inch)

POINTS
Specifies a unit of points (1/72 inch)

Note: If you specify the unit as PELS or POINTS, you must specify the value as a whole number with no decimal point.

Default: The transforms use the first value found in this order:

1. The offset specified in the printer definition
2. The offset specified in the form definition

Example: This example sets the page origin to .5 inches, 1.1 inches on the front side, and 1.5 inches, 1.1 inches on the back side:

```
//OUTDS OUTPUT OFFSETXF=0.5IN,OFFSETYF=1.1IN,
//             OFFSETXB=1.5IN,OFFSETYB=1.1IN
```

OUTBIN=_1-65 535_

Specifies the 1 to 5 decimal digit identifier of the output bin into which Infoprint Server will place a print job. If the printer does not support the selection of an output bin, the job is stacked in the default output bin for the printer.

When you print on a PCL or PostScript printer, instead of on an AFP printer, specify the output bin number of the PCL or PostScript printer. The value you specify for this parameter overrides any output bin that the form definition specifies.

Default: The transforms use the first value found in this order:

1. The output bin specified in the printer definition
2. The output bin selected in the AFP data stream
3. The output bin specified in the form definition

Example: //OUTDS OUTPUT OUTBIN=4

OVERLAYB=_overlay_name_

Specifies the member name (from 3 to 10 alphanumeric or national characters) of a medium overlay to be placed on the back side of each sheet in a two-sided job, in addition to overlays from other sources. Specify the complete name of the overlay member because these transforms do not add an O1 prefix.

Default: The transforms use the first value found in this order:

1. The overlay specified in the printer definition
2. The overlay specified in the form definition

OVERLAYF=*overlay_name*

Specifies the member name (from 3 to 10 alphanumeric or national characters) of a medium overlay to be placed on the front side of each sheet, in addition to overlays from other sources. Specify the complete name of the overlay member because these transforms do not add an O1 prefix.

Default: The transforms use the first value found in this order:
1. The overlay specified in the printer definition
2. The overlay specified in the form definition

Example: This example requests overlay O1FOVLY be placed on the front side of each sheet and overlay O1BOVLY be placed on the back side of each sheet:

```
//OUTDS OUTPUT OVERLAYF=O1FOVLY,OVERLAYB=O1BOVLY
```

PAGEDEF=*page_definition_name*

Specifies the name (from 1 to 6 alphanumeric or national characters) of the page definition you want to use. When you specify the name in the JCL, omit the system prefix, P1. These transforms add it automatically.

If a PAGEDEF parameter is not coded in your JCL, these transforms use the page definition specified in the printer definition. If no page definition is specified in the printer definition, these transforms use the page definition in the Infoprint Server transform configuration file.

You can store the page definition that you use in any of these places:
- In a system library assigned to these transforms
- In a user library referred to in the printer definition
- In a user library referred to in your JCL
- Inline in the print data set

Using page definitions from a user library

You can instruct these transforms to select a page definition from your user library rather than from a system library assigned to these transforms. To use a page definition from a user library:
- Include in your JCL a reference to the user library that contains the page definition.
- Specify the name of the page definition in the JCL PAGEDEF parameter of your JCL.

Using inline page definitions

To use an inline page definition:
- Include the inline page definition in the print data set.
- If you specify the PAGEDEF parameter, make sure that the name of the inline page definition matches the name of the page definition name that you specified, or else specify PAGEDEF=DUMMY.
- If you do not specify the PAGEDEF parameter, these transforms select the first inline page definition in the print data set, unless a JES default page definition exists.
- If a page definition resource is included inline with the data, make sure to identify the data set as containing carriage control characters.

You can include more than one inline page definition in a print data set, and you can change the page definition name in the JCL on different printing jobs to test different page definitions. If, however, the name of an inline page definition does not match the PAGEDEF name specified in the JCL, these transforms use the page definition from the resource library that matches the name in the JCL.

Default: The transforms use the first value found in this order:
1. The page definition specified in the PAGEDEF parameter unless DUMMY is specified.
2. The page definition specified in the FCB parameter.
3. The page definition specified in the printer definition.
4. The FCB value specified in the printer definition.
5. The default page definition if IP PrintWay basic mode processes the data set. However, JES does not provide a default page definition if you use IP PrintWay extended mode or the Print Interface subsystem.
6. The first inline page definition.
7. The page definition specified in the Infoprint Server transform configuration file.
8. Page definition P1P08682.

Example: In this example, P1USER10 is the page definition name:

```
//OUTDS OUTPUT PAGEDEF=USER10
```

PRMODE={SOSI1| SOSI2 | SOSI3 | SOSI4}
Specifies the type of data in the print data set and whether these transforms must do optional processing of the data.

Note: Only SOSI1, SOSI2, SOSI3 and SOSI4 are supported values; all other values are ignored.

SOSI1
Specifies that each shift-out, shift-in code is converted to a blank and a Set Coded Font Local text control.

SOSI2
Specifies that each shift-out, shift-in code is converted to a Set Coded Font Local text control.

SOSI3
Specifies that the shift-in code is converted to a Set Coded Font Local text control and two blanks. A shift-out code is converted to a Set Coded Font Local text control.

SOSI4
Specifies that each shift-out, shift-in code is converted to a Set Coded Font Local text control. SOSI characters are not counted when computing the PAGEDEF FIELD offsets.

JES uses values in the PRMODE parameter for job routing. These transforms ignore all values except SOSI1, SOSI2, SOSI3, and SOSI4, which they use to format data sets that contain both single-byte and double-byte fonts.

When you use the SOSI process, remember that:

- For the process to work correctly, you must specify two fonts in the CHARS parameter or in a page definition font list. The first font must be the single-byte font, and the second font must be the double-byte font.
- IBM recommends that you do not mix SOSI codes and TRCs in the same job.

Default:
1. If the Print Interface subsystem processes the data set, the value in the printer definition is used. If none is specified in the printer definition, JES provides a default value. However, the transforms do not use the JES default value.
2. If the Print Interface subsystem does not process the data set, JES provides a default value.

Example: `//OUTDS OUTPUT CHARS=(`*font_name1*`,`*font_name2*`),PRMODE=SOSI1`

PRTATTRS=`'`*attribute=value ...*`'`

Specifies one or more Infoprint Server job attributes.

Rules:
1. The list of job attributes can be 1-127 characters.
2. Attribute names and values are case-sensitive. All attribute names are lowercase.
3. Enclose the entire list of job attributes in single quotation marks.
4. Separate job attributes with one or more spaces.
5. If an attribute value contains blanks, lowercase letters, or special characters, enclose that attribute value in double quotation marks.
6. You can store attributes and values in a UNIX file (for example, a zFS file) or in an MVS data set. Use the job attribute called **attributes** to specify the UNIX file name of the DD name for the MVS data set that contains the attributes.

Example: `//OUTDS   OUTPUT PRTATTRS='trailer-transform-error-page=no'`

TRC={YES|NO}

Specifies whether the print data set contains table reference characters (TRCs). This is the same as the DCB=OPTCD=J parameter.

In line data, you can use different fonts on different lines of a file by specifying TRCs at the beginning of each line after the carriage control characters, if any are present.

Examples:
1. `//OUTDS OUTPUT CHARS=(GT10,GT12),TRC=YES`
2. `//DD2    DD     CHARS=(GT10,GT12),DCB=OPTCD=J`

When you use table reference characters, remember that:
- If the TRC=YES and the page definition does not identify fonts, you must specify fonts with the CHARS parameter.
- The order in which the fonts are specified in the CHARS parameter establishes which number is assigned to each associated TRC. For example, the TRCs for the fonts in the preceding example are zero for *font_name1* and one for *font_name2*.

- If you do not specify TRC=YES, but your line data contains a TRC as the first character of each line (or the second character if carriage control characters are used), the TRC is not used as a font identifier, but is printed as a text character.

UCS=*font_name*

Serves as another way to select a font. When a CHARS parameter is not specified, you can specify the universal character set (UCS) parameter to select one font. If the page definition specifies a font, the UCS parameter is ignored.

Example: `//DD1 DD UCS=GT10`

USERLIB=(*library_name***[,...])**

Specifies the name of 1 to 8 cataloged MVS data sets (user libraries) containing AFP resources for processing the data set. The transforms dynamically allocate these data sets and search for resources in them in the order specified on the USERLIB statement. If the transforms find no resources, they search the system libraries defined in the Infoprint Server transform configuration file. The libraries you specify can contain any AFP resources: fonts, page segments, overlays, page definitions, form definitions, or object container resources.

Notes:

1. The user who starts the Infoprint Server daemons must have RACF authorization to read the AFP user resource libraries. For more information, see the AFP security information in *z/OS Infoprint Server Customization*.

2. If Infoprint Server uses the IP PrintWay basic mode resubmit for filtering function to transform data from AFP format to PCL, PostScript, or PDF format, the AFP user resource libraries must have universal read access. This is because the resubmit for filtering function does not, by default, use the job submitter's user ID to check RACF authorization to the AFP user resource libraries. If you do not want to grant universal read access to the AFP user resource libraries, use one of these methods to transform and print the data set because these methods do not use the resubmit for filtering function:
   - Print Interface subsystem
   - AOPPRINT JCL procedure
   - z/OS UNIX lp command

3. If you must use the IP PrintWay basic mode resubmit for filtering function, your administrator can set the AOPRESUBMITUSER environment variable to let the resubmit for filtering function use the job submitter's user ID to check RACF authorization. However, IBM recommends that you do not use the AOPRESUBMITUSER environment variable. For information about the AOPRESUBMITUSER variable, see *z/OS Infoprint Server Customization*.

Default: The transforms use the first value found in this order:

1. Resource libraries specified in the printer definition
2. Resource libraries specified in the Infoprint Server transform configuration file or, if no library is specified, a hard-coded default resource library

Example: In this example, the USERLIB parameter tells the transforms to search the libraries specified for AFP resources.

```
                      //OUTDS OUTPUT USERLIB=(USER.IMAGES,USER.AFP.RESOURCES)
```

USERPATH=(*path_name*[,...])

> Specifies one to eight z/OS UNIX file paths containing AFP resources for processing the data set. The path specified on the USERPATH parameter can contain the following resources:
>
> - TrueType fonts
> - OpenType fonts
> - Resource access table (RAT)
> - WorldType fonts
>
> **Example:** `// USERPATH=(/usr/fonts/ttfonts)`

Examples -- Using JCL to transform AFP documents

These examples show the JCL you can use to transform AFP documents to:

- PCL format and print the PCL documents
- PDF format and sendl the PDF documents in an email

Transform an AFP document to PCL format and print it

This example shows how to transform an AFP document to PCL format and print the transformed output on a PCL printer. It assumes that:

- Printer definition `pcl1` exists in the Infoprint Server Printer Inventory with these characteristics:
  - The IP PrintWay LPR, direct-sockets, or IPP protocol is selected.
  - The AFP to PCL transform is specified.
- IP PrintWay prints output data sets in JES output class P.

```
//PCLJOB   JOB ...
//STEP1    EXEC PGM=USERA
//OUTDS1   OUTPUT CLASS=P,FSSDATA='printer=pcl1',
//           FORMDEF=MYDEF,USERLIB=USERX.MYLIB
//DD1      DD SYSOUT=(,),OUTPUT=*.OUTDS1,DSNAME=&&MYFILE
```

Transform an AFP document to PDF format and send it in an email

This example shows how to transform an AFP document to PDF format and send it to an email address. This example shows how to specify JCL parameters for sending the document in an email (MAILTO, MAILFROM, REPLYTO, and MAILFILE). For information about these JCL parameters, see *z/OS Infoprint Server User's Guide*.

This example assumes that:

- Printer definition `mail` exists in the Infoprint Server Printer Inventory with these characteristics:
  - The email protocol is selected.
  - The AFP to PDF transform is specified.
  - (Optional) A PDF user identifier, owner identifier, and protected actions are specified. If a user or owner identifier is specified, the AFP to PDF transform encrypts the PDF document and restricts any protected actions.
- IP PrintWay prints output data sets in JES output class P.

```
//MAILJOB  JOB ...
//STEP1    EXEC   PGM=USERA
//OUTDS1   OUTPUT CLASS=P,FSSDATA='printer=mail',
//           FORMDEF=MYDEF,MAILTO='user@xyz.com',
```

```
//          MAILFROM='John Sender',REPLYTO='secretary@xyz.com',
//          MAILFILE='July report',TITLE='Monthly Report'
//DD1      DD    SYSOUT=(,),OUTPUT=*.OUTDS1
```

Transform an AFP document to PDF format, specifying encryption job attributes

This example shows how to transform an AFP document to PDF format and mail it to an email address using the Print Interface subsystem. The Print Interface subsystem lets you specify job attributes that you cannot specify in JCL parameters, such as the job attributes used to encrypt PDF documents.

This example shows how to specify:

- The SUBSYS JCL parameter, with job attributes used to encrypt the PDF document (**pdf-owner-identifier**, **pdf-user-identifier**, **pdf-protect**)
- JCL parameters used to send the PDF document in an email (MAILTO, MAILFROM, REPLYTO, MAILFILE, TITLE)

For information about these JCL parameters, see *z/OS Infoprint Server User's Guide*.

This example assumes that:

- Printer definition `mail` exists in the Infoprint Server Printer Inventory with these characteristics:
  - The email protocol is selected.
  - The AFP to PDF transform is specified.
- The name of the Print Interface subsystem is AOP1.

```
//SUBSJOB  JOB ...
//STEP1    EXEC PGM=IEBGENER
//OUTDS1   OUTPUT FORMDEF=MYDEF,MAILTO='CEO@xyz.com',
//          MAILFROM='John Sender',REPLYTO='secretary@xyz.com',
//          MAILFILE='July report',TITLE='Monthly Report'
//SYSUT2   DD SUBSYS=(AOP1,'mail','pdf-owner-identifier=john pdf-user-i
//             dentifier=ceo pdf-protect={copy update}'),
//          OUTPUT=*.OUTDS1
//SYSIN    DD DUMMY
//SYSPRINT DD SYSOUT=*
//SYSUT1   DD DISP=SHR,DSN=USERX.DATA(JULY)
```

Tip: The SYSUT2 DD statement shows how to continue a value within quotation marks on the next line. To continue the value, end typing in column 71 and continue typing the value in column 16 of the next line.

AOP_MVS_RETURN_CODES environment variable

The AOP_MVS_RETURN_CODES environment variable determines whether the transform command returns MVS return codes (0, 4, 8) instead of UNIX exit values (0, 1). MVS return codes let you determine whether a warning or error occurred during the transform.

MVS return codes are useful when you use the AOPBATCH JCL procedure to run a transform and want a subsequent step in the job to run only if the transform step was successful.

AOP_MVS_RETURN_CODES

Specifies whether the **afpxpcl**, **afpxpdf**, and **afpxps** commands return MVS return codes or UNIX exit values:

Value   **Meaning**

	YES	MVS return codes:
		0 Successful.
		4 A warning occurred during the transform.
		8 The command was not accepted, a data stream error occurred during the transform, or the transform failed.

YES   MVS return codes:

                         0   Successful.

                         4   A warning occurred during the transform.

                         8   The command was not accepted, a data stream error occurred during the transform, or the transform failed.

NO   UNIX exit values:

                         0   Successful. However, a warning or data stream error might have occurred during the transform.

                         1   The command was not accepted, or the transform failed.

Notes:

1. Specify this environment variable before the command on the z/OS UNIX command line. You can also specify this variable in the **$HOME/.profile** file (if you use the /bin/sh shell) or the **$HOME/.tcshrc** file (if you use the /bin/tcsh shell).

2. If you use the AOPPRINT JCL procedure, specify this environment variable in the STDENV data set of the procedure. AOPPRINT runs the **lp** command and returns the code from the **lp** command.

3. If you use the AOPBATCH JCL procedure to run a transform command, specify this environment variable in the STDENV data set of the procedure. AOPBATCH returns the code from the transform command.

4. Do not specify this environment variable in the transform entry in the Infoprint Server transform configuration file, **aopxfd.conf**.

5. You can specify the value using lowercase or uppercase letters (for example, no or NO).

Default: NO

Example: AOP_MVS_RETURN_CODES=YES

Table 11 shows the transform exit values when the AOP_FAIL_ON_ERROR and AOP_MVS_RETURN_CODES environment variables are set and the transform is successful, a warning occurs, or a data stream error occurs. (The **Fail on error** field in the printer definition and the **fail-on-transform-error** job attribute provide equivalent function to the AOP_FAIL_ON_ERROR environment variable.)

Table 11. Transform exit values with AOP_FAIL_ON_ERROR and AOP_MVS_RETURN_CODES environment variables

AOP_FAIL_ON_ERROR	AOP_MVS_RETURN_CODES=YES		AOP_MVS_RETURN_CODES=NO	
NO	**Successful:**	0	**Successful:**	0
	Warning:	4	**Warning:**	0
	Error:	8	**Error:**	0
ERROR	**Successful:**	0	**Successful:**	0
	Warning:	4	**Warning:**	0
	Error:	8	**Error:**	1

Table 11. Transform exit values with AOP_FAIL_ON_ERROR and AOP_MVS_RETURN_CODES environment variables (continued)

AOP_FAIL_ON_ERROR	AOP_MVS_RETURN_CODES=YES	AOP_MVS_RETURN_CODES=NO
WARNING	**Successful:** 0 **Warning:** 8 **Error:** 8	**Successful:** 0 **Warning:** 1 **Error:** 1

Chapter 3. Customizing transforms

This chapter describes how to customize the transforms. The sections in this chapter are:

- "Customizing the AFP to PCL transform" on page 61
- "Customizing the AFP to PDF transform" on page 78
- "Customizing the AFP to PostScript transform" on page 103
- "Setting up security for AFP resource libraries" on page 119
- "Setting up security for AFP user path directories" on page 120
- "Starting Infoprint Server with sufficient memory" on page 120
- "Mapping raster fonts to outline fonts" on page 121
- "Using TrueType, OpenType, and WoldType fonts" on page 125
- "Paper names" on page 126

Customizing the AFP to PCL transform

To customize the AFP to PCL transform, do the tasks listed in Table 12. Required tasks are required by all installations. Optional tasks are required only if the listed condition applies to your installation.

Table 12. Tasks for customizing the AFP to PCL transform

Task	Condition	See page
Specifying transform options	Required	61
Setting up security for AFP resource libraries	Required	119
Starting Infoprint Server with sufficient memory	Required	120
Installing and configuring the XML Toolkit	Optional: To transform XML input	121

Specifying transform options

You must create at least one transform entry in the Infoprint Server transform configuration file (**aopxfd.conf**) for the AFP to PCL transform. In the transform entry, you can specify:

- Environment variables that control the transform
- Attributes that control how the Infoprint Server Transform Manager manages the transform

For information about how to create and edit the Infoprint Server transform configuration file, see "Creating the transform configuration file (**aopxfd.conf**)" in *z/OS Infoprint Server Customization*. After you update the transform configuration file, you must restart the Infoprint Server Transform Manager.

Tip: After the Transform Manager starts, check for error messages in the transform's **stderr** file or in the Infoprint Server common message log if the common message log is enabled in Infoprint Server. If you find any error messages, fix the errors and restart the Transform Manager. For more information about how to find the transform message logs, see "Finding the transform stderr file" on page 152.

Transform classes

If you want to specify different transform options for different printers, you can create different classes of the AFP to PCL transform. For example, you could create classes for printers that print on different paper sizes.

For each transform class, you must create a separate transform entry. You select a name for the transform class in the transform entry (see the **transform** attribute).

To use a transform class, job submitters must specify the class name as an option (**-c**) on the **afpxpcl** transform command or in the **filter-options** job attribute, and administrators must specify the class name as a filter option (**-c**) in the printer definition. For example, these z/OS UNIX commands use the "eu" transform class:

```
afpxpcl -c eu -o myfile.pcl myfile.afp
lp -d myprinter -o "filter-options='-c eu'" myfile.afp
```

Tip: The sample transform configuration file, **/usr/lpp/Printsrv/samples/aopxfd.conf**, shows examples of transform entries with different transform classes. Also, see "Examples -- Transform configuration file entries for the AFP to PCL transform" on page 77.

Default AFP resources

AFP resources are collections of data and control information that the transforms use to create PCL documents. You can specify default AFP resources (such as a default font, form definition, and page definition) in the transform configuration file and in printer definitions. AFP resources specified in a printer definition override default resources specified in the transform entry. If only a few printers use different default AFP resources, you might want to specify these default AFP resources in the printer definitions.

In most situations, you should specify the same default AFP resources that your AFP printers use. These default resources are specified either in the PSF startup procedures (in the PRINTDEV statements) or, if PSF is configured to obtain PRINTDEV values from the Printer Inventory, in the PSF FSA definitions in the Printer Inventory.

Use these environment variables to specify default AFP resources in the transform configuration file:

- AOP_CHARS: The default font used for transform error messages and for line data and AFP data that does not specify another font.
- AOP_FORMDEF: The default form definition used when no other form definition is specified.
- AOP_PAGEDEF: The default page definition used when no other page definition is specified.

Search hierarchy for form definitions: The transform uses this hierarchy to select the name of the form definition:

1. The form definition specified in the **form-definition** job attribute.
2. The form definition specified in the FORMDEF JCL parameter.
3. The form definition specified in the **Form definition** field in the printer definition.
4. The first inline form definition.
5. The form definition specified in the AOP_FORMDEF environment variable in the transform configuration file.
6. Form definition F1CP0111. This default is coded in the transform.

Tips:

1. If form definition name **dummy** is specified, the transform uses the first inline form definition.

2. After the transform determines the name of the form definition, the transform first searches for the form definition inline in the data set, and then searches in the user and system resource libraries.

Search hierarchy for page definitions: The transform uses this hierarchy to select the name of the page definition:

1. The page definition specified in the **page-definition** job attribute or the PAGEDEF or FCB JCL parameter. (The PAGEDEF parameter overrides the FCB parameter and the **page-definition** job attribute overrides both.)

2. The default page definition supplied by JES to IP PrintWay basic mode. (See Tips.)

3. The page definition specified in the **Page definition** field in the printer definition.

4. The first inline page definition.

5. The page definition specified in the AOP_PAGEDEF environment variable in the transform configuration file.

6. Page definition P1P08682. This default is coded in the transform.

Tips:

1. If page definition name **dummy** is specified, the transform uses the first inline page definition.

2. After the transform determines the name of the page definition, the transform first searches for the page definition inline in the data set, and then searches in the user and system resource libraries.

3. JES supplies a default page definition for batch jobs submitted to IP PrintWay basic mode with OUTPUT and DD JCL statements. If you want to use the default page definition specified in the transform configuration file, you can request that JES not supply a default page definition to the IP PrintWay basic mode FSA. For more information about the JES initialization parameters to do this, see *z/OS Infoprint Server Customization*.

Search hierarchy for the default font: The transform uses this hierarchy to select a font for line data and AFP data that does not specify a font:

1. The font named in the page definition.

2. The font specified in the **chars** job attribute or the CHARS or UCS JCL parameter. (The CHARS JCL parameter overrides the UCS parameter.)

3. The default font supplied by JES to IP PrintWay basic mode. (See Tip.)

4. The font specified in the **Character set** field in the printer definition.

5. The font specified in the AOP_CHARS environment variable in the transform configuration file. The transform prefixes X0 to the font named in the variable if you do not specify a prefix.

6. Font X060D9. This default is coded in the transform.

Tip: JES supplies a default font for jobs submitted to IP PrintWay basic mode with OUTPUT and DD JCL statements. If you want to use the default font specified in the transform configuration file, you can request that JES not supply a default font to the IP PrintWay basic mode FSA. For more information about the JES initialization parameters to do this, see *z/OS Infoprint Server Customization*.

Search hierarchy for the message font: The transform uses this hierarchy to select a font used for transform error messages:

1. The font named in the page definition specified in the AOP_MSGPAGEDEF environment variable.

2. The font specified in the AOP_CHARS environment variable in the transform configuration file. The transform prefixes X0 to the font named in the variable if you do not specify a prefix.

3. Font X060D9. This default is coded in the transform.

AFP system resource libraries

In the transform entry, you can specify from 1 to 8 AFP system resource libraries for fonts, page definitions, form definitions, page segments, and overlays. You can specify from 1 to 8 AFP user resource libraries in printer definitions.

In most situations, you should specify the same AFP system resource libraries in the transform configuration file as you currently specify in your PSF startup procedures. If only a few printers require different resource libraries, you can specify those libraries in the printer definitions for the printers.

Use these environment variables to specify system resource libraries in the transform configuration file:

- AOP_FONTLIB: The names of 1 to 8 system font libraries.
- AOP_FORMDEFLIB: The names of 1 to 8 system form definition libraries.
- AOP_OVERLAYLIB: The names of 1 to 8 system overlay libraries.
- AOP_PAGEDEFLIB: The names of 1 to 8 system page definition libraries.
- AOP_PAGESEGLIB: The names of 1 to 8 system page segment libraries.

AFP user resource libraries can be specified in job attributes, JCL parameters, environment variables, and in the printer definition.

The transforms use this hierarchy when searching AFP resource libraries:

1. User resource libraries specified in the **resource-library** job attribute or USERLIB JCL parameter.

2. Default user resource libraries specified in the **Resource library** field in the printer definition. These libraries are searched only when the job submitter does not specify any user resource libraries (see step 1).

3. System resource libraries specified in environment variables in the transform configuration file.

4. Default system resource libraries that are hard-coded in the transform. These libraries are searched only if no system resource libraries are specified in the transform configuration file (see step 3).

AFP system resource directories

In the transform entry, you can specify from one to eight UNIX file resource path directories that contain TrueType, OpenType, and WorldType fonts. The directory path can be up to 255 characters. The fonts must be installed in each directory with a resource installer that builds a resource access table (RAT) to describe the fonts in that directory. You can also specify the resource directories in printer definitions.

In most situations, you should specify the same AFP resource directories in the transform configuration file as you currently specify in your PSF startup procedures. If only a few printers require different resource directories, you can specify those directories in the printer definitions for the printers.

| Use the AOP_FONTPATH environment variable to specify the resource directories
| in the transform configuration file.

| AFP user resource directories can be specified in job attributes, JCL parameters,
| environment variables, and in the printer definition.

| The transform uses this hierarchy when searching AFP resource directories:
| 1. User resource directories specified in the **resource-directories** job attribute or
| USERPATH JCL parameter.
| 2. Default user resource directories specified in the **Resource directories** field in
| the printer definition. These directories are searched only when the job
| submitter does not specify any user resource directories (see step 1).
| 3. Resource directories specified in the AOP_FONTPATH environment variable in
| the transform configuration file.
| 4. Default resource directory that is hard-coded in the transform
| (/usr/lpp/fonts/worldtype/V8.0). This directory is searched only if no resource
| directories are specified in the transform configuration file (see step 3).

Format of an AFP to PCL transform entry

The format of an AFP to PCL transform entry in the transform configuration file
(**aopxfd.conf**) is:

```
transform afpxpcl[_transformclass]
    start-command = afpxpcld
    [ environment = {name –> value [ name –> value]... } ]
    [ maximum-active = number ]
    [ maximum-idle-time = seconds ]
    [ minimum-active = number ]
    ;
```

transform afpxpcl[_transformclass]
>   This statement indicates the beginning of a transform entry.
>
>   **afpxpcl**
>>   The name of the transform.
>
>   *transformclass*
>>   The name of an optional transform class. Specify from 1 to 55
>>   characters, including letters, numbers, or special characters. The
>>   name of the transform class is case-sensitive.
>>
>>   **Default:** No transform class.
>>
>>   **Example:** `transform afpxpcl_us`

start-command = afpxpcld
>   The name of the transform daemon. If the transform daemon is not in a
>   directory identified in the PATH environment variable specified in the
>   **aopstart** EXEC, specify the full directory path name of the daemon. (The
>   **afpxpcld** daemon is installed in **/usr/lpp/Printsrv/bin**.) This attribute is
>   required.
>
>   **Default:** None.
>
>   **Example:** `start-command=/usr/lpp/Printsrv/bin/afpxpcld`

environment = {*name –> value* [*name –> value*]... }
>   Environment variables that specify transform options. Enclose the entire set
>   of environment variables in braces. The values in these environment

variables override environment variables with the same name that are set in the **aopstart** EXEC. If a value contains special characters or spaces, enclose the value in single or double quotation marks.

For information about the environment variables you can specify, see "Environment variables for the AFP to PCL transform."

Default: None.

Example: `environment={AOP_FORMDEF –> F1CP0111}`

maximum-active = *number*
> The maximum number of transform daemons that the Transform Manager activates concurrently. Specify a number greater than 0 and greater than or equal to the number specified in the **minimum-active** attribute. For more information, see "Format of a transform entry" in *z/OS Infoprint Server Customization*.
>
> > **Default:** No maximum number. Transform daemons are started when needed.

maximum-idle-time = *seconds*
> The number of seconds before the Transform Manager shuts down an idle transform daemon and system resources are freed. Specify a number greater than 0. For more information, see "Format of a transform entry" in *z/OS Infoprint Server Customization*.
>
> > **Default:** Idle transform daemons are not shut down.

minimum-active = *number*
> The minimum number of transform daemons that the Transform Manager activates concurrently. Specify a number less than or equal to the number specified in the **maximum-active** attribute. For more information, see "Format of a transform entry" in *z/OS Infoprint Server Customization*.
>
> > **Default:** minimum-active = 0

Environment variables for the AFP to PCL transform

You can specify environment variables to:
* Specify default AFP resources, such as the default form definition and page definition.
* Specify AFP system resource libraries.
* Select transform functions, such as whether to create color output.
* Name the paper sizes in AFP input trays, and map AFP input tray IDs to PCL input trays.

You can optionally specify these environment variables:

__AOPXFORM_DAEMON_DEBUG

> **Note:** There are two underscores at the beginning of this environment variable.

> Indicates whether the transform front-end dll code is traced.

> The front-end dll code is responsible for parsing environment variables and options. No other options are needed for this trace.

> This trace includes information about the transform configuration and job data that is processed and errors that occur.

The output for this trace is always directed to the transform **stderr** file and cannot be redirected. For more information about the **stderr** file, see "Finding the transform stderr file" on page 152.

Valid values are:

yes   The transform front-end dll code is traced.

no   The transform front-end dll code is not traced.

Default: __AOPXFORM_DAEMON_DEBUG –> no

Example: `environment={ __AOPXFORM_DAEMON_DEBUG –> yes}`

Note: For another method to trace front-end dll code, see "Trace options" on page 153.

_BPX_JOBNAME
The job name for this transform. When you assign a different job name to each class of transform, the operator can manage the transform daemons more effectively. Specify a job name of 1 to 8 alphanumeric characters. Incorrect job names are ignored. For more information about the _BPX_JOBNAME variable, see *z/OS UNIX System Services Planning*.

Default: The job name is AOPXFD.

Example: `environment={_BPX_JOBNAME –> afpxpcld}`

AOP_ASSUME_RIDIC_UNPAD

Indicates whether all G4 MMR (Modified Modified READ (ITU-TSS T.6 Group 4 two-dimensional coding standard for facsimile)) images are unpadded RIDIC. In some IOCA images the RECID incorrectly states that the encoding is RIDIC when it is actually unpadded RIDIC. If the RECID for the G4 MMR image specifies RIDIC, but the width of the image is not padded with zeros, set AOP_ASSUME_RIDIC_UNPAD-> yes.

Valid values are:

yes   Ignore the G4 MMR RECID setting and process all G4 MMR images as unpadded.

no   Decode G4 MMR images as specified in the RECID.

Default: AOP_ASSUME_RIDIC_UNPAD –> no

Example: `environment={AOP_ASSUME_RIDIC_UNPAD –> yes}`

AOP_CHARS
The default coded font. The transform uses this font to format error messages unless the page definition specified in the AOP_MSGPAGEDEF variable names a font. The transforms also use this font for (1) line data when no other font is specified in the page definition used to print the document and (2) AFP data when no other font is specified in the AFP data stream.

Specify the 1 to 4 character coded font name. You can specify the X0 or XZ prefix of the coded font name. If you do not specify a prefix, the transform adds an X0 prefix. Some coded fonts have 6-character names, not counting the X0 or XZ prefix. For these fonts, use the 4-character alternate coded font name. For font names and alternate font names, see *IBM AFP Fonts: Font Summary for AFP Font Collection*.

Rules:

1. Specify only one default coded font in this environment variable.
2. The font you specify, or default font X060D9, must exist in one of the AFP font libraries so that the transform can write error messages in the output.
3. The code page associated with this coded font must be an EBCDIC code page.

Tip: You might want to specify the same font as the resident font in the AFP printer to which output is typically printed.

Default: AOP_CHARS –> 60d9 (This is font X060D9 because the transform adds prefix X0.)

Example: `environment={AOP_CHARS –> 60d8}`

AOP_COLOR
Indicates whether the transform is to produce color output. The transform supports the MO:DCA OCA color commands. Specify **yes** if the printer supports color. Valid values are:

yes   The transform produces color output.

no   The transform does color simulation.

Default: AOP_COLOR –> no

Example: `environment={AOP_COLOR –> yes}`

AOP_CUTSHEET
Indicates whether the transform is to prepare the output for printing on a cutsheet printer. Valid values are:

yes   The output is to be printed on a cutsheet printer. Therefore, the transform uses the cutsheet and N_UP specifications in the form definition to determine whether to send medium orientation information to the printer. For more information, see the description of the CUTSHEET and N_UP commands in *Page Printer Formatting Aid: User's Guide*.

   Tip: Select this option if your output is incorrectly printing in the down direction on a cutsheet printer.

no   The output is not to be printed on a cutsheet printer. Therefore, the transform always sends medium orientation information to the printer.

Table 13 on page 69 shows how the value of the AOP_CUTSHEET environment variable and values set in the form definition determine the orientation of the output. The shaded row is the only scenario where the orientation specified in the form definition results in a different output orientation.

Table 13. Output orientation based on AOP_CUTSHEET and form definition values. N/A indicates that the value has no impact on the output orientation.

AOP_CUTSHEET value	Form definition values			Output orientation
	Orientation	CUTSHEET	N_UP	
No	Landscape	N/A	N/A	Landscape
No	Portrait	N/A	N/A	Portrait
Yes	Landscape	No	0	Portrait
Yes	Landscape	N/A	> 0	Landscape
Yes	Landscape	Yes	N/A	Landscape
Yes	Portrait	No	0	Portrait
Yes	Portrait	N/A	> 0	Portrait
Yes	Portrait	Yes	N/A	Portrait

Default: AOP_CUTSHEET –> no

Example: `environment={AOP_CUTSHEET –> yes}`

AOP_EDGETOEDGE

Indicates whether the transform adjusts the x,y left edge offset starting position to allow for printers that are configured for edge-to-edge printing.

Valid values are:

yes   The AOP_PAPER values will be sent to the printer and adjusted for edge-to-edge printing.

no   No adjustement is made.

Default: AOP_EDGETOEDGE –> no

Example: `environment={AOP_EDGETOEDGE –> yes}`

AOP_FAIL_ON_ERROR
Specifies whether the transform stops processing when a warning or data stream error occurs during the transform. Warnings can indicate degraded output.

Valid values are:

error   The transform fails when a data stream error occurs and does not create an output document. However, the transform continues if warnings occur. This is the default.

no   The transform attempts to continue processing and create an output document when a warning or data stream error occurs.

warning
The transform fails when a warning or data stream error occurs and does not create an output document.

Tips:

1. The **fail-on-transform-error** job attribute and the **Fail on error** field in the printer definition override this value.

2. You can specify the value using lowercase or uppercase letters (for example, no or NO).

3. You can use the Infoprint Server ISPF panels to set the **Fail on error** field in the Processing section of a printer definition.

Default: AOP_FAIL_ON_ERROR –> error

Example: environment={AOP_FAIL_ON_ERROR –> no}

AOP_FAIL_ON_IMAGE_ERROR

Indicates whether the transform continues to process the document when the transform cannot decode an IOCA image because of certain compression padding errors. Some compression algorithms cause unpadded RIDIC images to be read as padded RIDIC by the transform.

Valid values are:

yes   If the transform cannot decode an IOCA image, it issues a message and stops processing the document.

no   If the transform cannot decode an IOCA image, it issues a message, stops processing the image, and continues 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 proceeds one of two ways:

        • If the RECID indicates RIDIC and the transform fails to decode it as RIDIC, it tries to decode it again as unpadded RIDIC.
        • If the RECID indicates unpadded RIDIC, and the transform fails to decode the image that way, it tries to decode it again as RIDIC.

        If the transform still cannot decode the G4 MMR image, or if the image is not a G4 MMR image, the transform issues an error message, stops processing the image, and continues 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 proceeds one of two ways:

        • If the RECID indicates RIDIC and the transform fails to decode it as RIDIC, it tries to decode it again as unpadded RIDIC.
        • If the RECID indicates unpadded RIDIC, and the transform fails to decode the image that way, it tries to decode it again as RIDIC.

        If the transform still cannot decode the G4 MMR image, or if the image is not a G4 MMR image, the transform issues a message and stops processing the document.

Default: AOP_FAIL_ON_IMAGE_ERROR –> yes

Example: environment={AOP_FAIL_ON_IMAGE_ERROR –> no}

AOP_FONTLIB
The AFP system resource libraries that contain fonts. Specify 1 to 8 data set names. Separate each name with a space. Libraries are searched in the order listed.

Specify the AFP 240-pel or 300-pel raster and outline font libraries used by your installation:

- Specify AFP 240-pel or 300-pel raster font libraries because the AFP to PCL transform requires raster fonts.
- Specify AFP outline font libraries if data to be transformed refers to outline fonts.

Default: AOP_FONTLIB –> "sys1.font300 sys1.fontoln"

Examples:
1. `environment={AOP_FONTLIB –> "sys1.font300"}`
2. The backslash in this example indicates that the text within the quotation marks continues on the next line:
   ```
   environment={AOP_FONTLIB –> "sys1.font300 \
     sys1.fontoln inst.font300"}
   ```

AOP_FONTMAP_TABLE
The full path name of a UNIX file that contains a font-mapping table.

Tip: Using a font-mapping table is not recommended because the PCL transform always includes raster fonts in the output document.

Default: No file path.

Example:
```
environment={AOP_FONTMAP_TABLE -> "/usr/lpp/Printsrv/samples/aokfontmap.samp"}
```

AOP_FONTPATH
The directories that contain TrueType, OpenType, and WorldType fonts that the transform uses to process data sets. The directory path can be up to 255 characters and you can specify from one to eight UNIX file resource path directories. The transform searches for fonts in the directories in the order they are specified. The fonts must be installed in each directory with a resource installer that builds a resource access table (RAT) to describe the fonts in that directory. To find out how to install fonts, see "Using TrueType, OpenType, and WoldType fonts" on page 125.

Default: AOP_FONTPATH –> "/usr/lpp/fonts/worldtype/v8.0"

Examples:
1. Single directory specified:
   ```
   environment={AOP_FONTPATH –> "/usr/lpp/fonts/collections"}
   ```
2. Multiple directories specified with a blank between the paths:
   ```
   environment={AOP_FONTPATH –> "/usr/lpp/fonts/myfonts /jdoe/fonts/truetype"}
   ```

   Tip: Separate directory paths with a space. Spaces are not allowed within the directory path name.
3. The backslash in this example indicates that the text within the quotation marks continues on the next line:
   ```
   environment={AOP_FONTPATH –> "/usr/lpp/fonts/collections \
   /usr/lpp/fonts/wt_ttf"}
   ```

AOP_FORMDEF
The default form definition used to format the input data stream. Specify the 1 to 8 character form definition name, with or without the F1 prefix. If you omit the F1 prefix, the transform adds it.

The transform uses this form definition only if no other form definition is specified.

Default: AOP_FORMDEF –> F1CP0110

Example: `environment={AOP_FORMDEF –> F1CP0111}`

AOP_FORMDEFLIB

The AFP system resource libraries that contain form definitions. Specify from 1 to 8 data set names. Separate each name with a space. Libraries are searched in the order listed.

Default: AOP_FORMDEFLIB –> "sys1.fdeflib"

Example: `environment={AOP_FORMDEFLIB –> "sys1.fdeflib inst.fdeflib"}`

AOP_MAX_RECORD_LENGTH

This value is used internally for data transfer. If transforming output to an MVS data set, specify a value that represents the smallest record length for MVS data sets that will be used for transform output. A larger value will result in better transform throughput and performance. Specify MAX if not transforming output to MVS data sets.

Valid values are:

696 - 32756

Specify the record length of the MVS data set used to receive transform output.

MAX The maximum record length of 32756 will be used.

Tips:

1. A record length of 32756 for the MVS data set is recommended.
2. If 32756 is specified, use MAX for this environment variable.

Default: AOP_MAX_RECORD_LENGTH ->1024

Example: `environment={AOP_MAX_RECORD_LENGTH–> MAX}`

AOP_MSGFORMDEF

The form definition used to format transform error messages. Specify the 1 to 8 character form definition name, with or without the F1 prefix. If you omit the F1 prefix, the transform adds it. This form definition must be located in one of the libraries specified in the AOP_FORMDEFLIB variable.

Default: AOP_MSGFORMDEF –> F1CP0110

Example: `environment={AOP_MSGFORMDEF –> F1CP0111}`

AOP_MSGPAGEDEF

The page definition used to format transform error messages. Specify the 1 to 8 character page definition name, with or without the P1 prefix. If you omit the P1 prefix, the transform adds it. This page definition must be located in one of the libraries specified in the AOP_PAGEDEFLIB variable. The transform formats messages for the first paper size defined in the AOP_PAPER variable.

Recommendation: Use page definition P1P08682 for letter size paper, and page definition P1Q09182 for A4 paper.

Default: AOP_MSGPAGEDEF –> P1P08682

Example: `environment={AOP_MSGPAGEDEF –> P1P06362}`

AOP_OFFSET_JOGGING

Indicates how the transform supports offset stacking (also called jogging). Offset stacking is requested in the form definition (medium map). If the form definition requests offset stacking, the transform can offset, shift, or rotate each subset in the output depending on the printer support. Valid values are:

imm The transform offsets the output by specifying a PCL Job Separation command for each subset. This PCL command toggles the printer output bin between two positions. Printers that support this PCL command include HP LaserJet III Si, Xerox DocuPrint 180, and similar printers.

no The transform ignores offset stacking requested in the form definition.

rotate

The transform rotates the output by creating a new printer job for each subset and specifying the PJL DEFAULT JOBOFFSET=ROTATE command for the job. Printers that support this PJL command include some Ricoh printers.

shift The transform shifts the output by creating a new printer job for each subset and specifying the PJL DEFAULT JOBOFFSET=SHIFT command for the job. Printers that support this PJL command include some Ricoh printers.

yes | on

The transform offsets the output by creating a new printer job for each subset and specifying the PJL DEFAULT JOBOFFSET=ON command for the job. (Value "yes" is the same as "on".)

Rule: If you specify rotate, shift, yes, or on, the printer must support PJL commands. In addition, you must specify the AOP_PJL -> yes environment variable.

If you specify AOP_PJL -> yes and use the IP PrintWay extended mode Direct Sockets protocol to send documents to the printer, do not select the "Record pages printed for accounting" and "Restart printing after last successful page" options in the printer definition for the printer. This is because a PJL JOB command in the document can conflict with the PJL JOB command that IP PrintWay adds to the document to track the number of pages that print successfully.

Recommendation: Specify the **imm** option if the printer supports it.

Default: AOP_OFFSET_JOGGING –> no

Example: `environment={AOP_OFFSET_JOGGING –> imm}`

Note: If you specify rotate, shift, yes, or on, fonts are sent to the printer again for each new printer job, which can adversely affect performance. In addition, other documents might print between the printer jobs.

AOP_OVERLAYLIB

The AFP system resource libraries that contain overlays. Specify from 1 to 8 data set names. Separate each name with a space. Libraries are searched in the order listed.

Default: AOP_OVERLAYLIB –> "sys1.overlib"

Example: `environment={AOP_OVERLAYLIB —> "sys1.overlib inst.overlib"}`

AOP_PAGEDEF

The default page definition used to format line data and create PCL output. Specify the 1 to 8 character page definition name, with or without the P1 prefix. If you omit the P1 prefix, the transform adds it. The transform uses this page definition only if no other page definition is specified.

Recommendation: Use page definition P1P08682 for letter size paper, and page definition P1Q09182 for A4 paper.

Default: AOP_PAGEDEF —> P1P08682

Example: `environment={AOP_PAGEDEF —> P1Q09182}`

AOP_PAGEDEFLIB

The AFP system resource libraries that contain page definitions. Specify from 1 to 8 data set names. Separate each name with a space. Libraries are searched in the order listed.

Default: AOP_PAGEDEFLIB —> "sys1.pdeflib"

Example: `environment={AOP_PAGEDEFLIB —> "sys1.pdeflib inst.pdeflib"}`

AOP_PAGESEGLIB

The AFP system resource libraries that contain page segments. Specify from 1 to 8 data set names. Separate each name with a space.

Default: AOP_PAGESEGLIB —> "sys1.pseglib"

Example: `environment={AOP_PAGESEGLIB —> "sys1.pseglib inst.pseglib"}`

AOP_PAPER

The name of the paper that is typically installed in each AFP input tray. The transform formats the PCL output for the paper in the AFP input tray ID the document selects.

The position (1 through 9) of each paper name represents the number of the AFP input tray. The 10th position represents any AFP input tray number greater than 9.

You can specify from 1 to 10 paper names. Separate each name with a space. If you specify fewer than 10 paper names, the transform uses the paper name in position 1.

For more information about the paper names you can specify, see "Paper names" on page 126.

Valid paper names and their sizes (width x height) are:

Paper Name	Size
auto	The transform uses the page size in the Page Descriptor (PGD) structured field if the size is equivalent to a standard PCL page size. Otherwise, the transform uses letter size because PCL interpreters do not recognize non-standard paper sizes.
a3	292.25 x 413.25 mm
a4	210 x 297 mm
a5	148.3 x 210 mm
b4	250 x 353 mm
b5	176 x 250 mm

c5	162 x 229 mm (6.48 x 9.16 in.)
com10	4.125 x 9.5 in. (104.8 x 241.3 mm)
dl	110 x 220 mm (4.4 x 8.8 in)
executive	7.25 x 10.5 in (185 x 267 mm)
ledger	11 x 17 in (279 x 432 mm)
legal	8.5 x 14.0 in (216 x 356 mm)
letter	8.5 x 11.0 in (216 x 279 mm)
monarch	3.875 x 7.5 in. (98.4 x 190.5 mm)

Note: Use the **AOP_EDGETOEDGE->yes** environment variable when the printer is configured to print edge-to-edge. However, if the printer does not support edge-to-edge printing, documents created for edge-to-edge printing have the outside 50 pels, approximately 4 millimeters, of output cut off.

Default: AOP_PAPER –> "letter letter letter letter letter letter letter letter letter letter"

Example: The backslash in this example indicates that the text within the quotation marks continues on the next line:

```
environment={AOP_PAPER -> "letter legal letter letter \
letter letter letter letter letter letter"}
```

In this example, if the document to be transformed specifies:
- AFP input tray 1, the transform formats the output for `letter` size paper.
- AFP input tray 2, the transform formats the output for `legal` size paper.
- AFP input tray 3, the transform formats the output for `letter` size paper.
- AFP input tray greater than 9, the transform formats the output for `letter` size paper.

AOP_PJL
Indicates whether the printer accepts all PCL 5 commands, including PJL commands. All printers that support PCL 5 support PJL commands. Some printers that support only PCL 4 do not support PJL commands. Sometimes, a printer that does not support PJL commands prints a smiley face where a PJL command occurs in the data stream or prints the PJL command on the first page. Valid values are:

yes   The printer accepts PJL commands.

no   The printer does not accept PJL commands. Therefore, the AFP to PCL transform does not create PJL commands.

Default: AOP_PJL –> yes

Example: `environment={AOP_PJL -> no}`

Tip: If you use IP PrintWay extended mode, specify AOP_PJL -> no because a PJL JOB command in the document can conflict with the PJL JOB command that IP PrintWay adds to the document to track the number of pages that print successfully.

AOP_TRAILER_ERROR_PAGE
Specifies whether the transform writes messages for transform warnings and

data stream errors to a trailer error page. The trailer error page is the last page in the output document. Warnings can indicate degraded output.

Valid values are:

error The transform writes error messages, but not warning messages, to a trailer error page. This option does not apply when `AOP_FAIL_ON_ERROR–> error` or `AOP_FAIL_ON_ERROR–>warning` because no output document is created when an error occurs.

no No trailer error page is produced.

warning
The transform writes warning and error messages to a trailer error page. This option does not apply when `AOP_FAIL_ON_ERROR–>warning` because no output document is created when an error or warning occurs. This is the default.

Tips:

1. The **trailer-transform-error-page** job attribute and the **Trailer error page** field in the printer definition override this value.

2. You can specify the value using lowercase or uppercase letters (for example, `no` or `NO`).

3. You can use the Infoprint Server ISPF panels to set the **Trailer error page** field in the Processing section of a printer definition.

Default: `AOP_TRAILER_ERROR_PAGE –> warning`

Example: `environment={AOP_TRAILER_ERROR_PAGE –> error}`

AOP_TRAYID
A mapping of AFP input tray numbers to PCL tray IDs. The position (1 - 9) of each PCL tray ID corresponds to the AFP tray number. The 10th position corresponds to all AFP input tray numbers greater than 9.

Specify 1 to 10 PCL tray IDs, separating each number with a space. Number 0 (zero) indicates that an input tray is not installed in the printer. If the input document requests an input tray that is not installed, the transform writes an error message in the output file and uses the tray ID in position 1.

PCL tray IDs typically mean:

> PCL tray 1: Feed paper from a printer-specific tray.
>
> PCL tray 2: Feed paper from manual input.
>
> PCL tray 3: Feed envelope from manual input.
>
> PCL tray 4: Feed paper from lower tray.
>
> PCL tray 5: Feed paper from optional paper source.
>
> PCL tray 6: Feed envelope from optional envelope source.

The AFP to PCL transform codes the PCL tray ID specified in AOP_TRAYID in the PCL Paper Source command. For more information about PCL tray IDs, see the description of the Paper Source command in Hewlett Packard's PCL documentation. Because the implementation of paper tray IDs can vary from printer to printer, also see the documentation for your printer.

Rule: Specify a non-zero value in the first position. This is because the transform uses tray 1 as the default tray.

Tips:

1. PCL tray IDs do not match the tray numbers embossed on the actual printer trays.
2. If the usual PCL tray IDs do not work, specify different tray IDs in the AOP_TRAYID variable until the printer selects paper from the desired paper tray.

Default: AOP_TRAYID –> "1 4 0 0 0 0 0 0 0 2"

Example: `environment={AOP_TRAYID –> "1 4 1 1 1 1 1 1 1 2"}`

This example shows that if the document to be transformed specifies:

- AFP input tray 1, the transform uses PCL tray ID 1.
- AFP input tray 2, the transform uses PCL tray ID 4.
- AFP input tray 3 through 9, the transform uses PCL tray ID 1.
- AFP input tray greater than 9, the transform uses PCL tray ID 2.

Examples -- Transform configuration file entries for the AFP to PCL transform

These examples show sample transform entries in the Infoprint Server transform configuration file (**aopxfd.conf**) for the AFP to PCL transform.

Print on letter and legal size paper

This transform entry can be used for printers that print on letter and legal size paper. To use this entry, do not specify a transform class.

```
transform afpxpcl
 start-command = afpxpcld
 maximum-active = 2
 maximum-idle-time = 300 # 5 minutes
 minimum-active = 1
 environment = {
  _BPX_JOBNAME -> AFPXPCLD
  AOP_CHARS -> 60d9
  AOP_COLOR -> no
  AOP_CUTSHEET -> yes
  AOP_FONTLIB -> "sys1.font300"
  AOP_FORMDEF -> F1CP0110
  AOP_FORMDEFLIB -> "sys1.fdeflib"
  AOP_MSGFORMDEF -> F1CP0110
  AOP_MSGPAGEDEF -> P1P08682
  AOP_OVERLAYLIB -> "sys1.overlib"
  AOP_PAGEDEF -> P1P08682
  AOP_PAGEDEFLIB -> "sys1.pdeflib"
  AOP_PAGESEGLIB -> "sys1.pseglib"
  AOP_PAPER ->
   "letter legal letter letter letter letter letter letter letter letter"
  AOP_PJL -> no
  AOP_TRAYID -> "1 4 1 1 1 1 1 1 1 2"
 }
;
```

Print on A3, A4, and C5 paper

This transform entry can be used for printers that print on A3, A4, and C5 paper. This transform entry creates transform class "eu". To use this transform class, specify the class in the -c transform option as shown in these two examples:

- `afpxpcl -c eu -o myfile.pcl myfile.afp`
  `lp -o "filter-options='-c eu'" -d myprinter myfile.afp`

```
• transform afpxpcl_eu
    start-command = afpxpcld
    maximum-active = 2
    maximum-idle-time = 300 # 5 minutes
    minimum-active = 1
    environment = {
      AOP_CHARS -> 60d9
      AOP_COLOR -> no
      AOP_CUTSHEET -> yes
      AOP_FONTLIB -> "sys1.font300"
      AOP_FORMDEF -> F1CP0110
      AOP_FORMDEFLIB -> "sys1.fdeflib inst.fdeflib"
      AOP_MSGFORMDEF -> F1CP0110
      AOP_MSGPAGEDEF -> P1P08682
      AOP_OVERLAYLIB -> "sys1.overlib inst.overlib"
      AOP_PAGEDEF -> P1P08682
      AOP_PAGEDEFLIB -> "sys1.pdeflib inst.pdeflib"
      AOP_PAGESEGLIB -> "sys1.pseglib inst.pseglib"
      AOP_PAPER -> "a4 a3 a4 a4 a4 a4 a4 a4 a4 c5"
      AOP_PJL -> no
      AOP_TRAYID -> "1 4 1 1 1 1 1 1 1 2"
    }
  ;
```

Customizing the AFP to PDF transform

To customize the AFP to PDF transform, do the tasks listed in Table 14. Required tasks are required by all installations. Optional tasks are required only if the listed condition applies to your installation.

Table 14. Tasks for customizing the AFP to PDF transform

Task	Condition	See page
Specifying transform options	Required	78
Setting up security for AFP resource libraries	Required	119
Starting Infoprint Server with sufficient memory	Required	120
Writing a Password exit	Optional: To encrypt PDF documents with passwords	98
Installing and configuring the XML Toolkit	Optional: To transform XML input	121
Mapping raster fonts to outline fonts	Optional: To map raster fonts to outline fonts	121

Specifying transform options

You must create at least one transform entry in the Infoprint Server transform configuration file (**aopxfd.conf**) for the AFP to PDF transform. In the transform entry, you can specify:

• Environment variables that control the transform

• Attributes that control how the Infoprint Server Transform Manager manages the transform

For information about how to create and edit the Infoprint Server transform configuration file, see "Creating the transform configuration file (**aopxfd.conf**)" in *z/OS Infoprint Server Customization*. After you update the transform configuration file, you must restart the Infoprint Server Transform Manager.

Tip: After you restart the Transform Manager, check for error messages in the transform's **stderr** file or in the Infoprint Server common message log if the common message log is enabled in Infoprint Server. If you find any error messages, fix the errors and restart the Transform Manager. For more information about how to find the transform message logs, see "Finding the transform stderr file" on page 152.

Transform classes

If you want to specify different sets of transform options for different uses, you can create different classes of the AFP to PDF transform. For example, you might create a separate class for documents that require encryption.

For each transform class, you must create a separate transform entry. You select a name for the transform class in the transform entry (see the **transform** attribute).

To use a transform class, job submitters must specify the class name as an option (**-c**) on the **afpxpdf** transform command or in the **filter-options** job attribute, and administrators must specify the class name as a filter option (**-c**) in the printer definition. For example, these z/OS UNIX commands use the "encrypt" transform class:

```
afpxpdf -c encrypt -o myfile.pdf myfile.afp
lp -d myprinter -o "filter-options='-c encrypt'" myfile.afp
```

Tip: The sample transform configuration file, **/usr/lpp/Printsrv/samples/aopxfd.conf**, shows examples of transform entries with different transform classes. Also, see "Examples -- Transform configuration file entries for the AFP to PDF transform" on page 97.

Font-mapping options

The AFP to PDF transform can use 300-pel raster fonts (single-byte or double-byte) and AFP outline fonts (single-byte only). In addition, the transform can map single-byte 240-pel or 300-pel raster fonts to equivalent type 1 outline fonts. Outline fonts provide superior viewing and printing. Double-byte outline fonts are not supported. See "Mapping raster fonts to outline fonts" on page 121 for information on mapping fonts.

Use these environment variables to control font-mapping in the transform configuration file:

- AOP_FONTMAP_TABLE:

  Specifies the full path name of a UNIX file that contains a font-mapping table that maps raster fonts to outline fonts.

  Notes:

  1. The font-mapping table must be a UNIX file.
  2. The presence of a valid font-mapping table in the specified file implies that font mapping is performed for any fonts found in the table.

- AOP_OUTLINES:

  – The **yes** option (default) causes the transform to include outline fonts in the output data. Base 14 fonts are never included because they are installed with Adobe Acrobat.

  – The **builtin** option causes the transform to include only the names of outline fonts in the PDF document.

> **Tip:** Select the **builtin** if you want to reduce the size of your PDF documents. However, if the outline font is not available to the PDF viewer, errors might be issued and the document might not view correctly.

Enhanced PDF options

The AFP to PDF transform lets you select options that enhance viewing and navigation in PDF documents. To select these options, use these environment variables:

- AOP_ANNOTATIONS: Creates annotations in the PDF document.
- AOP_INDEX: Creates bookmarks in PDF documents for improved navigation.
- AOP_INDEX_LANG: Specifies the code page for the language for converting text in bookmarks.
- AOP_LINEARIZE: Optimizes PDF documents for fast viewing from the web.
- AOP_LINKS: Creates links in PDF documents for improved navigation.
- AOP_ROTATE_PDF: Specifies how to rotate PDF documents for easier viewing.

PDF encryption options

The AFP to PDF transform can encrypt PDF documents. For an overview of encryption, see "Encrypting PDF documents" on page 11.

Use these environment variables to specify encryption options in the transform configuration file:

- AOP_ENCRYPT: Enables encryption.

  When you enable encryption, the transform encrypts documents if any of these conditions are met:

  - The job submitter specifies a user or owner identifier in a job attribute, or submits a print job to a printer definition that specifies a user or owner identifier.
  - The AOP_PROTECT environment variable is specified in the AFP to PDF transform class.
  - If neither AOP_PROTECT is specified nor a user or owner password is provided, the transform will use 40 bit encryption for the document with no protect options.

- AOP_PASSWORD_EXIT: The name of your Password exit and optional arguments. The transform calls this exit to obtain PDF owner and user passwords when an owner or user identifier is specified.

  This environment variable is used if encryption is enabled and a user or owner identifier is specified. Otherwise it is ignored.

- AOP_PROTECT: The actions to be restricted in all PDF documents when no identifiers are specified. You can restrict copying, printing, and updating PDF documents.

  This environment variable is ignored if either a user or owner identifier is specified.

> **Tip:** Consider specifying the AOP_PROTECT environment variable in a separate transform class. Use this transform class only for documents you want to restrict actions on. You might want to set up several transform classes with different restrictions. For example, you could set up a class that restricts printing PDF documents, and another class that restricts changing PDF documents.

Default AFP resources

AFP resources are collections of data and control information that the transforms use to create PDF documents. You can specify default AFP resources (such as a default font, form definition, and page definition) in the transform configuration file and in printer definitions. AFP resources specified in a printer definition override default resources specified in the transform entry. If only a few printers use different default AFP resources, you might want to specify these default AFP resources in the printer definitions.

In most situations, you should specify the same default AFP resources that your AFP printers use. These default resources are specified either in the PSF startup procedures (in the PRINTDEV statements) or, if PSF is configured to obtain PRINTDEV values from the Printer Inventory, in the PSF FSA definitions in the Printer Inventory.

Use these environment variables to specify default AFP resources in the transform configuration file:

- AOP_CHARS: The default font used for transform error messages and for line data and AFP data that does not specify another font.
- AOP_FORMDEF: The default form definition used when no other form definition is specified.
- AOP_PAGEDEF: The default page definition used when no other page definition is specified.

Search hierarchy for form definitions: The transform uses this hierarchy to select the name of the form definition:

1. The form definition specified in the **form-definition** job attribute or FORMDEF JCL parameter.
2. The form definition specified in the **Form definition** field in the printer definition.
3. The first inline form definition.
4. The form definition specified in the AOP_FORMDEF environment variable in the transform configuration file.
5. Form definition F1CP0111. This default is coded in the transform.

Tips:

1. If form definition name **dummy** is specified, the transform uses the first inline form definition.
2. After the transform determines the name of the form definition, the transform first searches for the form definition inline in the data set, and then searches in the user and system resource libraries.

Search hierarchy for page definitions: The transform uses this hierarchy to select the name of the page definition:

1. The page definition specified in the **page-definition** job attribute or the PAGEDEF or FCB JCL parameter. (The PAGEDEF parameter overrides the FCB parameter.)
2. The default page definition supplied by JES to IP PrintWay basic mode. (See Tips.)
3. The page definition specified in the **Page definition** field in the printer definition.
4. The first inline page definition.

5. The page definition specified in the AOP_PAGEDEF environment variable in the transform configuration file.

6. Page definition P1P08682. This default is coded in the transform.

Tips:

1. If page definition name **dummy** is specified, the transform uses the first inline page definition.

2. After the transform determines the name of the page definition, the transform first searches for the page definition inline in the data set, and then searches in the user and system resource libraries.

3. JES supplies a default page definition for batch jobs submitted to IP PrintWay basic mode with OUTPUT and DD JCL statements. If you want to use the default page definition specified in the transform configuration file, you can request that JES not supply a default page definition to the IP PrintWay basic mode FSA. For more information about the JES initialization parameters to do this, see *z/OS Infoprint Server Customization*.

Search hierarchy for the default font: The transform uses this hierarchy to select a font for line data and AFP data that does not specify a font:

1. The font named in the page definition.

2. The font specified in the **chars** job attribute or the CHARS or UCS JCL parameter. (The CHARS JCL parameter overrides the UCS parameter.)

3. The default font supplied by JES to IP PrintWay basic mode. (See Tip.)

4. The font specified in the **Character set** field in the printer definition.

5. The font specified in the AOP_CHARS environment variable in the transform configuration file. The transform prefixes X0 to the font named in the variable if you do not specify a prefix.

6. Font X060D9. This default is coded in the transform.

Tip: JES supplies a default font for jobs submitted to IP PrintWay basic mode with OUTPUT and DD JCL statements. If you want to use the default font specified in the transform configuration file, you can request that JES not supply a default font to the IP PrintWay basic mode FSA. For more information about the JES initialization parameters to do this, see *z/OS Infoprint Server Customization*.

Search hierarchy for the message font: The transform uses this hierarchy to select a font used for transform error messages:

1. The font named in the page definition specified in the AOP_MSGPAGEDEF environment variable.

2. The font specified in the AOP_CHARS environment variable in the transform configuration file. The transform prefixes X0 to the font named in the variable if you do not specify a prefix.

3. Font X060D9. This default is coded in the transform.

AFP system resource libraries

In the transform entry, you can specify from 1 to 8 AFP system resource libraries for fonts, page definitions, form definitions, page segments, and overlays. You can specify from 1 to 8 AFP user resource libraries in printer definitions.

In most situations, you should specify the same AFP system resource libraries in the transform configuration file as you currently specify in your PSF startup

procedures. If only a few printers require different resource libraries, you can specify those libraries in the printer definitions for the printers.

Use these environment variables to specify system resource libraries in the transform configuration file:

- AOP_FONTLIB: The names of 1 to 8 system font libraries
- AOP_FORMDEFLIB: The names of 1 to 8 system form definition libraries
- AOP_OVERLAYLIB: The names of 1 to 8 system overlay libraries
- AOP_PAGEDEFLIB: The names of 1 to 8 system page definition libraries
- AOP_PAGESEGLIB: The names of 1 to 8 system page segment libraries

AFP user resource libraries can be specified in job attributes, JCL parameters, environment variables, and in the printer definition.

The transforms use this hierarchy when searching AFP resource libraries:

1. User resource libraries specified in the **resource-library** job attribute or USERLIB JCL parameter.
2. Default user resource libraries specified in the **Resource library** field in the printer definition. These libraries are searched only when the job submitter does not specify any user resource libraries (see step 1).
3. System resource libraries specified in environment variables in the transform configuration file.
4. Default system resource libraries that are hard-coded in the transform. These libraries are searched only if no system resource libraries are specified in the transform configuration file (see step 3).

AFP system resource directories

In the transform entry, you can specify from one to eight UNIX file resource path directories that contain TrueType, OpenType, and WorldType fonts. The directory path can be up to 255 characters. The fonts must be installed in each directory with a resource installer that builds a resource access table (RAT) to describe the fonts in that directory. You can also specify the resource directories in printer definitions.

In most situations, you should specify the same AFP resource directories in the transform configuration file as you currently specify in your PSF startup procedures. If only a few printers require different resource directories, you can specify those libraries in the printer definitions for the printers.

Use the AOP_FONTPATH environment variable to specify the resource directories in the transform configuration file:

AFP user resource directories can be specified in job attributes, JCL parameters, environment variables, and in the printer definition.

The transform uses this hierarchy when searching AFP resource directories:

1. User resource directories specified in the **resource-directories** job attribute or USERPATH JCL parameter.
2. Default user resource directories specified in the **Resource directories** field in the printer definition. These directories are searched only when the job submitter does not specify any user resource directories (see step 1).
3. Resource directories specified in the AOP_FONTPATH environment variable in the transform configuration file.

| 4. Default resource directory that is hard-coded in the transform
| (/usr/lpp/fonts/worldtype/V8.0). This directory is searched only if no resource
| directories are specified in the transform configuration file (see step 3).

Format of an AFP to PDF transform entry

The format of an AFP to PDF transform entry in the transform configuration file
(**aopxfd.conf**) is:

```
transform afpxpdf[_transformclass]
    start-command = afpxpdfd
    [ environment = {name –> value [ name –> value]... } ]
    [ maximum-active = number ]
    [ maximum-idle-time = seconds ]
    [ minimum-active = number ]
  ;
```

transform afpxpdf[_*transformclass*]**

> This statement indicates the beginning of a transform entry.

> **afpxpdf**
>
> > The name of the transform.

> *transformclass*
>
> > The name of an optional transform class. Specify from 1 to 55
> > characters, including letters, numbers, or special characters. The
> > name of the transform class is case-sensitive.
> >
> > **Default:** No transform class.
> >
> > **Example:** `transform afpxpdf_encrypt`

start-command = afpxpdfd

> The name of the transform daemon. If the transform daemon is not in a
> directory identified in the PATH environment variable specified in the
> **aopstart** EXEC, specify the full directory path name of the daemon. (The
> **afpxpdfd** daemon is installed in **/usr/lpp/Printsrv/bin**.) This attribute is
> required.
>
> **Default:** None.
>
> **Example:** `start-command=/usr/lpp/Printsrv/bin/afpxpdfd`

environment = {*name –> value* [*name –> value*]... }

> Environment variables that specify transform options. Enclose the entire set
> of environment variables in braces. The values in these environment
> variables override environment variables with the same name that are set
> in the **aopstart** EXEC. If a value contains special characters or spaces,
> enclose the value in single or double quotation marks
>
> For information about the environment variables you can specify, see
> "Environment variables for the AFP to PDF transform" on page 85.
>
> **Default:** None.
>
> **Example:** `environment={AOP_ENCRYPT –> yes}`

maximum-active = *number*

> The maximum number of transform daemons that the Transform Manager
> activates concurrently. Specify a number greater than 0 and greater than or

equal to the number specified in the **minimum-active** attribute. For more information, see "Format of a transform entry" in *z/OS Infoprint Server Customization*.

Default: No maximum number. Transform daemons are started when needed.

maximum-idle-time = *seconds*
The number of seconds before the Transform Manager shuts down an idle transform daemon and system resources are freed. Specify a number greater than 0. For more information, see "Format of a transform entry" in *z/OS Infoprint Server Customization*.

Default: Idle transform daemons are not shut down.

minimum-active = *number*
The minimum number of transform daemons that the Transform Manager activates concurrently. Specify a number less than or equal to the number specified in the **maximum-active** attribute. For more information, see "Format of a transform entry" in *z/OS Infoprint Server Customization*.

Default: minimum-active = 0

Environment variables for the AFP to PDF transform

You can specify environment variables to:
- Specify default AFP resources, such as the default form definition and page definition.
- Specify AFP system resource libraries.
- Select transform functions, such as whether to enable encryption.
- Name the paper sizes in AFP input trays.

You can optionally specify these environment variables:

__AOPXFORM_DAEMON_DEBUG

Note: There are two underscores at the beginning of this environment variable.

Indicates whether the transform front-end dll code is traced.

The front-end dll code is responsible for parsing environment variables and options. No other options are needed for this trace.

This trace includes information about the transform configuration and job data that is processed and errors that occur.

The output for this trace is always directed to the transform **stderr** file and cannot be redirected. For more information about the **stderr** file, see "Finding the transform stderr file" on page 152.

Valid values are:

yes   The transform front-end dll code is traced.

no   The transform front-end dll code is not traced.

Default: __AOPXFORM_DAEMON_DEBUG –> no

Example: environment={ __AOPXFORM_DAEMON_DEBUG –> yes}

Note: For another method to trace front-end dll code, see "Trace options" on page 153.

_BPX_JOBNAME

The job name for this transform. When you assign a different job name to each class of transform, the operator can manage the transform daemons more effectively. Specify a job name of 1 to 8 alphanumeric characters. Incorrect job names are ignored. For more information about the _BPX_JOBNAME variable, see *z/OS UNIX System Services Planning*.

Default: The job name is AOPXFD.

Example: environment={_BPX_JOBNAME –> afpxpdfD}

AOP_ANNOTATIONS

Indicates whether the transform is to produce annotations in the PDF document. The transform can create an annotation on each page. The annotation contains only printing instructions such as "Normal duplex Front side". The printing instructions are derived from the form definition used to transform the document. For more information about annotations, see the online help provided with Adobe Reader. Valid values are:

yes   The transform produces annotations.

no   The transform does not produce annotations.

Default: AOP_ANNOTATIONS –> yes

Example: environment={AOP_ANNOTATIONS –> no}

AOP_ASSUME_RIDIC_UNPAD

Indicates whether all G4 MMR (Modified Modified READ (ITU-TSS T.6 Group 4 two-dimensional coding standard for facsimile)) images are unpadded RIDIC. In some IOCA images the RECID incorrectly states that the encoding is RIDIC when it is actually unpadded RIDIC. If the RECID for the G4 MMR image specifies RIDIC, but the width of the image is not padded with zeros, set AOP_ASSUME_RIDIC_UNPAD-> yes.

Valid values are:

yes   Ignore the G4 MMR RECID setting and process all G4 MMR images as unpadded.

no   Decode G4 MMR images as specified in the RECID.

Default: AOP_ASSUME_RIDIC_UNPAD –> no

Example: environment={AOP_ASSUME_RIDIC_UNPAD –> yes}

AOP_CHARS

The default coded font. The transform uses this font to format error messages unless the page definition specified in the AOP_MSGPAGEDEF variable names a font. The transforms also use this font for (1) line data when no other font is specified in the page definition used to format the document and (2) AFP data when no other font is specified in the AFP data stream.

Specify the 1 to 4 character coded font name. You can specify the X0 or XZ prefix of the coded font name. If you do not specify a prefix, the transform adds an X0 prefix. Some coded fonts have 6-character names, not counting the

X0 or XZ prefix. For these fonts, use the 4-character alternate coded font name. For font names and alternate font names, see *IBM AFP Fonts: Font Summary for AFP Font Collection*.

Rules:
1. Specify only one default coded font in this environment variable.
2. The font you specify, or default font X060D9, must exist in one of the AFP font libraries so that the transform can write error messages in the output. The coded font member for a raster font, for example X060D9, must exist in an AFP font library specified to the transform.
3. The code page associated with this coded font must be an EBCDIC code page.

Tips:
1. You might want to specify the same font as the resident font in the AFP printer to which output is typically printed.
2. Specify an outline font because outline fonts provide higher quality output for printing and viewing.

Default: AOP_CHARS –> 60d9 (This is font X060D9 because the transform adds prefix X0.)

Example: `environment={AOP_CHARS -> 60d8}`

AOP_CUTSHEET
Indicates whether the transform is to prepare the output for printing on a cutsheet printer. Valid values are:

yes   The output is to be printed on a cutsheet printer. Therefore, the transform uses the cutsheet and N_UP specifications in the form definition to determine whether to send medium orientation information to the printer. For more information, see the description of the CUTSHEET and N_UP commands in *Page Printer Formatting Aid: User's Guide*.

> **Tip:** Select this option if your output is incorrectly printing in the down direction on a cutsheet printer.

no   The output is not to be printed on a cutsheet printer. Therefore, the transform always sends medium orientation information to the printer.

Table 13 on page 69 shows how the value of the AOP_CUTSHEET environment variable and values set in the form definition determine the orientation of the output. The shaded row is the only scenario where the orientation specified in the form definition results in a different output orientation.

Default: AOP_CUTSHEET –> no

Example: `environment={AOP_CUTSHEET -> yes}`

AOP_ENCRYPT
Indicates whether you want the transform to encrypt documents.

yes   The transform encrypts documents.

no   The transform does not encrypt documents. Transform requests that specify user or owner identifiers fail.

Tip: If AOP_ENCRYPT is set to yes and neither AOP_PROTECT is specified nor a user or owner password is provided, the transform uses a 40 bit encryption key with no protect option.

Default: AOP_ENCRYPT –> no

Example: `environment={AOP_ENCRYPT –> yes}`

AOP_FAIL_ON_ERROR

Specifies whether the transform stops processing when a warning or data stream error occurs during the transform. Warnings can indicate degraded output.

Valid values are:

error The transform fails when a data stream error occurs and does not create an output document. However, the transform continues if warnings occur. This is the default.

no The transform attempts to continue processing and create an output document when a warning or data stream error occurs.

warning
The transform fails when a warning or data stream error occurs and does not create an output document.

Tips:
1. The **fail-on-transform-error** job attribute and the **Fail on error** field in the printer definition override this value.
2. You can specify the value using lowercase or uppercase letters (for example, `no` or `NO`).
3. The **Fail on error** printer definition attribute can also be set using the ISPF panel in the processing section.

Default: AOP_FAIL_ON_ERROR –> error

Example: `environment={AOP_FAIL_ON_ERROR –> no}`

AOP_FAIL_ON_IMAGE_ERROR

Indicates whether the transform continues to process the document when the transform cannot decode an IOCA image because of certain compression padding errors. Some compression algorithms cause unpadded RIDIC images to be read as padded RIDIC by the transform.

Valid values are:

yes If the transform cannot decode an IOCA image, it issues a message and stops processing the document.

no If the transform cannot decode an IOCA image, it issues a message, stops processing the image, and continues 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 proceeds one of two ways:
  - If the RECID indicates RIDIC and the transform fails to decode it as RIDIC, it tries to decode it again as unpadded RIDIC.

- If the RECID indicates unpadded RIDIC, and the transform fails to decode the image that way, it tries to decode it again as RIDIC.

If the transform still cannot decode the G4 MMR image, or if the image is not a G4 MMR image, the transform issues an error message, stops processing the image, and continues 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 proceeds one of two ways:

- If the RECID indicates RIDIC and the transform fails to decode it as RIDIC, it tries to decode it again as unpadded RIDIC.
- If the RECID indicates unpadded RIDIC, and the transform fails to decode the image that way, it tries to decode it again as RIDIC.

If the transform still cannot decode the G4 MMR image, or if the image is not a G4 MMR image, the transform issues a message and stops processing the document.

Default: AOP_FAIL_ON_IMAGE_ERROR –> yes

Example: `environment={AOP_FAIL_ON_IMAGE_ERROR –> no}`

AOP_FLATE

Indicates whether the transform is to use the Adobe Flate compression algorithm to compress the output. Valid values are:

yes The transform produces compressed output.

no The transform does not produce compressed output. However, throughput is higher.

Default: AOP_FLATE –> yes

Example: `environment={AOP_FLATE –> no}`

AOP_FONTLIB

The AFP system resource libraries that contain fonts. Specify 1 to 8 data set names. Separate each name with a space. Libraries are searched in the order listed.

Specify the AFP 240-pel or 300-pel raster and outline font libraries used by your installation:

- Specify AFP 240-pel or 300-pel raster font libraries if either (1) AOP_CHARS specifies a raster font or (2) documents to be transformed reference raster fonts.
- Specify AFP outline font libraries if data to be transformed references outline fonts.

Default: AOP_FONTLIB –> "sys1.font300 sys1.fontoln"

Examples:

1. `environment={AOP_FONTLIB –> "sys1.font300"}`
2. The backslash in this example indicates that the text within the quotation marks continues on the next line:
   ```
   environment={AOP_FONTLIB –> "sys1.font300 \
     sys1.fontoln inst.font300"}
   ```

AOP_FONTMAP_TABLE
> The full path name of a UNIX file that contains a font-mapping table that maps raster fonts to outline fonts.
>
> **Default:** No file path.
>
> **Example:**
>
>   environment={AOP_FONTMAP_TABLE -> /usr/lpp/Printsrv/samples/aokfontmap.samp}

AOP_FONTPATH
> The directories that contain TrueType, OpenType, and WorldType fonts that the transform uses to process data sets. The directory path can be up to 255 characters and you can specify from one to eight UNIX file resource path directories. The transform searches for fonts in the directories in the order they are specified. The fonts must be installed in each directory with a resource installer that builds a resource access table (RAT) to describe the fonts in that directory. To find out how to install fonts, see "Using TrueType, OpenType, and WoldType fonts" on page 125.
>
> **Default:** AOP_FONTPATH –> "/usr/lpp/fonts/worldtype/v8.0"
>
> **Examples:**
> 1. Single directory specified:
>
>   environment={AOP_FONTPATH -> "/usr/lpp/fonts/collections"}
> 2. Multiple directories specified with a blank between the paths:
>
>   environment={AOP_FONTPATH -> "/usr/lpp/fonts/myfonts /jdoe/fonts/truetype"}
>
>   **Tip:** Separate directory paths with a space. Spaces are not allowed within the directory path name.
> 3. The backslash in this example indicates that the text within the quotation marks continues on the next line:
>
>   environment={AOP_FONTPATH -> "/usr/lpp/fonts/collections \
>   /usr/lpp/fonts/wt_ttf"}

AOP_FORMDEF
> The default form definition used to format the input data stream and create PDF output. Specify the 1 to 8 character form definition name, with or without the F1 prefix. If you omit the F1 prefix, the transform adds it.
>
> The transform uses this form definition only if no other form definition is specified.
>
> **Default:** AOP_FORMDEF –> F1CP0110
>
> **Example:** environment={AOP_FORMDEF -> F1CP0111}

AOP_FORMDEFLIB
> The AFP system resource libraries that contain form definitions. Specify from 1 to 8 data set names. Separate each name with a space. Libraries are searched in the order listed.
>
> **Default:** AOP_FORMDEFLIB –> "sys1.fdeflib"
>
> **Example:** environment={AOP_FORMDEFLIB -> "sys1.fdeflib inst.fdeflib"}

AOP_INDEX
> Indicates whether the transform is to create PDF bookmarks in the PDF document when the input AFP document contains Tag Logical Elements (TLE)

structured fields. For example, a table of contents in an AFP document can be converted to a set of PDF bookmarks. Adobe Reader displays PDF bookmarks in its navigation pane. For more information about bookmarks, see the online help provided with Adobe Reader. Valid values are:

yes   The transform creates bookmarks in the PDF document.

no   The transform does not create bookmarks in the PDF document.

Default: AOP_INDEX –> no

Example: `environment={AOP_INDEX -> yes}`

AOP_INDEX_LANG

The default code page the transform uses to translate text in the PDF bookmarks (TLE structured fields). This code page is used for line-data documents and overrides the AFP Begin Document (BDT) structured field in an AFP document. If the BDT contains a document language that is to be used, specify NONE for AOP_INDEX_LANG. If the BDT does not contain a document language and AOP_INDEX_LANG is NONE, code page 37 will be used. Valid values are:

Code page	Description
037	USA, Canada, Australia, New Zealand
273	Austria, Germany
274	Belgium
275	Brazil
277	Denmark, Norway
278	Finland, Sweden
280	Italy
281	Japan Latin
282	Portugal
284	Spain, Latin America
285	UK
297	France
500	International
871	Iceland

Default: AOP_INDEX_LANG –> 037

Example: `environment={AOP_INDEX_LANG->500}`

AOP_LINEARIZE

Indicates whether the transform is to linearize PDF documents so that they can be viewed faster from the web. This function is especially important for large PDF documents that can take a long time to download. In Adobe Reader online help, this function is called *optimization* and *Fast Web View*. Adobe Reader displays the first page of a linearized PDF document before the entire document has been loaded from a website. For more information about optimization, see the online help provided with Adobe Reader. Valid values are:

yes   The transform optimizes the PDF document for fast viewing from the web.

no   The transform does not optimize the PDF document for fast viewing from the web.

Tip: When you select linearization, the transform uses additional memory because the entire PDF document is kept in memory while it is being linearized.

Default: AOP_LINEARIZE –> no

Example: `environment={AOP_LINEARIZE –> yes}`

AOP_LINKS
Indicates whether the transform is to create links in the PDF document when the input AFP document contains Link Logical Elements (LLE) structured fields. If the Object Classification Triplet in the LLE indicates an executable program link, the transform creates a Uniform Resource Locator (URL) in the PDF document. Valid values are:

yes The transform creates links in the PDF document.

no The transform does not create links in the PDF document.

Default: AOP_LINKS –> no

Example: `environment={AOP_LINKS –> yes}`

AOP_MAX_RECORD_LENGTH
This value is used internally for data transfer. If transforming output to an MVS data set, specify a value that represents the smallest record length for MVS data sets that will be used for transform output. A larger value will result in better transform throughput and performance. Specify MAX if not transforming output to MVS data sets.

Valid values are:

696 - 32756
Specify the record length of the MVS data set used to receive transform output.

MAX The maximum record length of 32756 will be used.

Tips:
1. A record length of 32756 for the MVS data set is recommended.
2. If 32756 is specified, use MAX for this environment variable.

Default: AOP_MAX_RECORD_LENGTH ->1024

Example: `environment={AOP_MAX_RECORD_LENGTH–> MAX}`

AOP_MSGFORMDEF
The form definition used to format transform error messages. Specify the 1 to 8 character form definition name, with or without the F1 prefix. If you omit the F1 prefix, the transform adds it. This form definition must be located in one of the libraries specified in the AOP_FORMDEFLIB variable.

Default: AOP_MSGFORMDEF –> F1CP0110

Example: `environment={AOP_MSGFORMDEF –> F1CP0111}`

AOP_MSGPAGEDEF
The page definition used to format transform error messages. Specify the 1 to 8 character page definition name, with or without the P1 prefix. If you omit the P1 prefix, the transform adds it. This page definition must be located in one of

the libraries specified in the AOP_PAGEDEFLIB variable. The transform formats messages for the first paper size defined in the AOP_PAPER variable.

Recommendation: Use page definition P1P08682 for letter size paper, and page definition P1Q09182 for A4 paper.

Default: AOP_MSGPAGEDEF –> P1P08682

Example: `environment={AOP_MSGPAGEDEF –> P1P06362}`

AOP_OUTLINES

The type of processing the transform does for outline fonts. Valid values are:

builtin

The transform includes only the names of outline fonts in the PDF output. Outline fonts themselves are not included in the output. When the PDF output is viewed or printed, the PDF driver (for example, Adobe Reader or a PDF printer) maps the requested typeface to an equivalent typeface. This option produces smaller output files than when fonts are included in the output. However, differences in output appearance can result due to the mapping done by the PDF driver. For example, font spacing might be different, and if you use special characters or if you use characters or glyphs that are unknown to the PDF driver, these characters will not be visible

yes The transform includes outline fonts in the PDF output. This option provides better output fidelity than the **builtin** option. However, each typeface increases the size of the PDF output file by approximately 110 KB.

Default: AOP_OUTLINES –> yes

Example: `environment={AOP_OUTLINES –> builtin}`

AOP_OVERLAYLIB

The AFP system resource libraries that contain overlays. Specify from 1 to 8 data set names. Separate each name with a space. Libraries are searched in the order listed.

Default: AOP_OVERLAYLIB –> "sys1.overlib"

Example: `environment={AOP_OVERLAYLIB –> "sys1.overlib inst.overlib"}`

AOP_PAGEDEF

The default page definition used to format line data. Specify the 1 to 8 character page definition name, with or without the P1 prefix. If you omit the P1 prefix, the transform adds it. The transform uses this page definition only if no other page definition is specified.

Recommendation: Use page definition P1P08682 for letter size paper, and page definition P1Q09182 for A4 paper.

Default: AOP_PAGEDEF –> P1P08682

Example: `environment={AOP_PAGEDEF –> P1Q09182}`

AOP_PAGEDEFLIB

The AFP system resource libraries that contain page definitions. Specify from 1 to 8 data set names. Separate each name with a space. Libraries are searched in the order listed.

Default: AOP_PAGEDEFLIB –> "sys1.pdeflib"

Example: `environment={AOP_PAGEDEFLIB –> "sys1.pdeflib inst.pdeflib"}`

AOP_PAGESEGLIB

The AFP system resource libraries that contain page segments. Specify from 1 to 8 data set names. Separate each name with a space.

Default: AOP_PAGESEGLIB –> "sys1.pseglib"

Example: `environment={AOP_PAGESEGLIB –> "sys1.pseglib inst.pseglib"}`

AOP_PAPER

The name of the paper that is typically installed in each AFP input tray. The transform formats the PDF output for the paper in the first AFP input tray ID the document selects.

The position (1 through 9) of each paper name represents the number of the AFP input tray. The 10th position represents any AFP input tray number greater than 9.

You can specify from 1 to 10 paper names. Separate each name with a space. If you specify fewer than 10 paper names, the transform uses the paper name in position 1.

For more information about the paper names you can specify, see "Paper names" on page 126.

Valid paper names and their sizes (width x height) are:

Paper Name	Size
auto	The transform uses the page size in the Page Descriptor (PGD) structured field.
a3	292.25 x 413.25 mm
a4	210 x 297 mm
a5	148.3 x 210 mm
b4	250 x 353 mm
b5	176 x 250 mm
c5	162 x 229 mm (6.48 x 9.16 in.)
com10	4.125 x 9.5 in. (104.8 x 241.3 mm)
dl	110 x 220 mm (4.4 x 8.8 in)
executive	7.25 x 10.5 in (185 x 267 mm)
ledger	11 x 17 in (279 x 432 mm)
legal	8.5 x 14.0 in (216 x 356 mm)
letter	8.5 x 11.0 in (216 x 279 mm)
monarch	3.875 x 7.5 in. (98.4 x 190.5 mm)

Default: AOP_PAPER –> "letter letter letter letter letter letter letter letter letter letter"

Example: The backslash in this example indicates that the text within the quotation marks continues on the next line:

```
environment={AOP_PAPER –> "letter legal letter letter \
letter letter letter letter letter letter"}
```

In this example, if the document to be transformed specifies:

- AFP input tray 1, the transform formats the output for `letter` size paper.
- AFP input tray 2, the transform formats the output for `legal` size paper.
- AFP input tray greater than 9, the transform formats the output for `letter` size paper.

AOP_PASSWORD_EXIT

The name of the Password exit and optional arguments. The transform calls the Password exit to obtain PDF owner and user passwords for encryption when a user identifier or owner identifier is specified.

Specify the full path name of the Password exit unless it is in a directory named in the LIBPATH environment variable. Also, specify any optional arguments that your Password exit accepts.

A sample Password exit is provided in **/usr/lpp/Printsrv/lib/aokpdfexit.dll**. This sample exit accepts the name of the password database as an optional argument (if none is specified, the sample exit uses **/etc/Printsrv/aokpdfexit.db**). For information about the sample Password exit, see "Writing a Password exit" on page 98.

Default: AOP_PASSWORD_EXIT –> "/usr/lpp/Printsrv/lib/aokpdfexit.dll"

Example: In this example, the argument is the name of the sample password database that the transform provides. The backslash indicates that the text within the quotation marks continues on the next line.

```
environment={AOP_PASSWORD_EXIT –> "/usr/lpp/Printsrv/lib/aokpdfexit.dll \
/usr/lpp/Printsrv/samples/aokpdfexit.db"}
```

AOP_PROTECT

The actions the transform is to restrict in all PDF documents when the transform job does not specify either a user or owner identifier.

The transform encrypts the PDF documents and restricts the specified actions. However, the encrypted PDF documents do not have user passwords. This means that anyone can read them without a password. The transform uses a low level of encryption (a 40-bit encryption key).

If a transform job specifies a user or owner identifier, the transform ignores this variable and encrypts the PDF document using the passwords associated with the identifiers. It restricts the actions specified in the **pdf-protect** job attribute or in the printer definition.

Valid values are:

Table 15. AOP_PROTECT values

Value:	Actions users cannot do:
select	- Copy or extract content to another document - Extract content for accessibility
print	- Print at low resolution (150 dpi) - Print at high resolution
modify	- Change the document - Assemble the document (insert, delete, rotate pages) - Create template pages

Default: None.

Example: `environment={AOP_PROTECT -> "select print modify"}`

AOP_ROTATE_PDF

Indicates how the transform is to rotate PDF documents. For example, some pages (such as those that contain tables) might require the PDF document to be turned sideways to be read. Valid values are:

no
: The rotation in the form definition is used (PRESENT keyword).

auto
: The rotation on each page is the same as the direction of the majority of the characters on the page.

0
: The PDF document is not rotated.

90
: The entire PDF document is rotated 90 degrees counterclockwise.

180
: The entire PDF document is rotated 180 degrees counterclockwise.

270
: The entire PDF document is rotated 270 degrees counterclockwise.

Tip: Rotating PDF documents can change the way the PDF documents print. If PDF documents do not print correctly using the **no** value, try the **0** value.

Default: AOP_ROTATE_PDF -> no

Example: `environment={AOP_ROTATE_PDF -> auto}`

AOP_TRAILER_ERROR_PAGE

Specifies whether the transform writes messages for transform informational warnings and data stream errors to a trailer error page. The trailer error page is the last page in the output document. Warnings can indicate degraded output.

Valid values are:

error
: The transform writes error messages, but not warning messages, to a trailer error page. This option does not apply when `AOP_FAIL_ON_ERROR-> error` or `AOP_FAIL_ON_ERROR->warning` because no output document is created when an error occurs.

no
: No trailer error page is produced.

warning
: The transform writes informational warning and error messages to a trailer error page. This option does not apply when `AOP_FAIL_ON_ERROR->warning` because no output document is created when an error or warning occurs. This is the default.

Tips:

1. The **trailer-transform-error-page** job attribute and the **Trailer error page** field in the printer definition override this value.

2. You can specify the value using lowercase or uppercase letters (for example, no or NO).

3. The **Trailer error page** printer definition attribute can also be set using the ISPF panel in the processing section.

Default: `AOP_TRAILER_ERROR_PAGE —> warning`

Example: `environment={AOP_TRAILER_ERROR_PAGE —> error}`

AOP_TRAYID

Indicates whether an AFP tray number is valid. The position (1 - 9) of each value corresponds to the AFP tray number. The 10th position corresponds to all AFP input tray numbers greater than 9. Valid values are:

1   The AFP tray number is valid.

0   The AFP tray number is not valid. If the AFP document requests this tray in position 2-10, the transform writes an error message and uses the tray ID in position 1. If the AFP document requests this tray in position 1, the transform changes the value to a 1, as it is used as the default value.

Tip: To avoid transform error messages, either omit this variable or specify the default value.

Default: AOP_TRAYID –> "1 1 1 1 1 1 1 1 1 1"

Example: `environment={AOP_TRAYID —> "1 1 1 1 1 1 1 1 1 1"}`

Examples -- Transform configuration file entries for the AFP to PDF transform

These examples show sample transform entries in the Infoprint Server transform configuration file (**aopxfd.conf**) for the AFP to PDF transform.

Enhance viewing of PDF documents

This transform entry enables transform options that enhance viewing of PDF documents. The environment variables to enable these functions are shown in **bold** text. For more information about these environment variables, see "Enhanced PDF options" on page 80.

```
transform afpxpdf
 start-command = afpxpdfd
 minimum-active = 1
 maximum-active = 2
 maximum-idle-time = 300 # 5 minutes
 environment = {
   _BPX_JOBNAME -> afpxpdfD
   AOP_CHARS -> 60D9
   AOP_CUTSHEET -> yes
   AOP_ENCRYPT -> no
   AOP_FLATE -> yes
   AOP_FONTLIB -> "sys1.font300 sys1.fontoln"
   AOP_FORMDEF -> F1CP0110
   AOP_FORMDEFLIB -> "sys1.fdeflib"
   AOP_INDEX -> yes
   AOP_INDEX_LANG -> 037
   AOP_MSGFORMDEF -> F1CP0110
   AOP_MSGPAGEDEF -> P1P08682
   AOP_OVERLAYLIB -> "sys1.overlib"
   AOP_PAGEDEF -> P1P08682
   AOP_PAPER ->
    "letter letter letter letter letter letter letter letter letter letter"
   AOP_ROTATE_PDF -> auto
   AOP_TRAYID -> "1 1 1 1 1 1 1 1 1 1"
  }
 ;
```

Encrypt PDF documents

This transform entry enables encryption and also restricts actions in all

PDF documents. The environment variables used for encryption are shown in **bold** text. For more information about these environment variables, see "PDF encryption options" on page 80.

This transform entry creates transform class "encrypt". To use this transform class, specify the class in the **-c** transform option as shown in these two examples:

- afpxpdf -c encrypt -o myfile.pdf myfile.afp
        lp -o "filter-options='-c encrypt'" -d myprinter myfile.afp

-
```
transform afpxpdf_encrypt
 start-command = afpxpdfd
 minimum-active = 1
 maximum-active = 2
 maximum-idle-time = 300 # 5 minutes
 environment = {
   _BPX_JOBNAME -> afpxpdfD
   AOP_CHARS -> 60D9
   AOP_CUTSHEET -> no
   AOP_ENCRYPT -> yes
   AOP_FLATE -> yes
   AOP_FONTLIB -> "sys1.font300 sys1.fontoln"
   AOP_FORMDEF -> F1CP0110
   AOP_FORMDEFLIB -> "sys1.fdeflib"
   AOP_INDEX -> yes
   AOP_INDEX_LANG -> 037
   AOP_MSGFORMDEF -> F1CP0110
   AOP_MSGPAGEDEF -> P1P08682
   AOP_OVERLAYLIB -> "sys1.overlib"
   AOP_PAGEDEF -> P1P08682
   AOP_PAGEDEFLIB -> "sys1.pdeflib"
   AOP_PAGESEGLIB -> "sys1.pseglib"
   AOP_PAPER ->
    "letter letter letter letter letter letter letter letter letter letter"
   AOP_PASSWORD_EXIT -> "/usr/lpp/Printsrv/lib/aokpdfexit.dll"
   AOP_PROTECT -> "modify print select"
   AOP_ROTATE_PDF -> no
   AOP_TRAYID -> "1 1 1 1 1 1 1 1 1 1 1"
 }
;
```

Writing a Password exit

To encrypt PDF documents with passwords, you must write a Password exit. The Password exit provides passwords to the AFP to PDF transform.

Tip: To encrypt PDF documents without passwords, you do not need to write a Password exit. For information, see "PDF encryption options" on page 80.

The types of PDF passwords are:

User password
Lets someone open an encrypted PDF document. A user password is optional. If a user password is not specified, anyone can open the encrypted PDF document.

Owner password
Lets you restrict actions in an encrypted PDF document. The owner password also lets someone open an encrypted PDF document and bypass restrictions. An owner password is optional. However, it is required to restrict actions.

The Password exit can do these functions:

- Provide user and owner passwords:

The AFP to PDF transform passes one or two identifiers to the Password exit as input -- a user identifier and an owner identifier. (The Password exit is called only when at least one identifier is specified.) Typically, job submitters specify these identifiers in job attributes. However, the administrator can also specify identifiers in printer definitions.

Your installation can decide what identifiers to use. For example, identifiers can be z/OS user IDs, email addresses, or a combination of different types of identifiers. See "Input to the Password exit" for rules pertaining to identifiers.

The Password exit must return a password for each identifier that is passed as input to the exit. See "Output from the Password exit" on page 100 for rules pertaining to passwords.

To map identifiers to passwords, your Password exit can use a password database in any format. For example, your Password exit can use a password database that already exists for other purposes. Or, you could create a password database that only your Password exit uses.

> **Tip:** Your Password exit can return a password even when an identifier is not specified as input. For example, your Password exit could provide a default owner password when no owner identifier is specified.

- (Optional) Specify restricted actions:

  The AFP to PDF transform passes a list of restricted actions to the Password exit as input. The job submitter specifies the restricted actions in a job attribute, or the administrator can specify them in the printer definition. If no restricted actions have been specified for a job, the default is not to restrict actions. This default is passed to the exit.

  Your Password exit can change the restricted actions. However, if your Password exit restricts actions, it must also return an owner password.

Programming considerations:

1. The Password exit must be program-controlled.
2. The Password exit runs with UID 0.
3. Do not send a long-term explicit or implied WAIT in the Password exit.
4. The Password exit runs in 31-bit addressing mode, in problem state.
5. Code the Password exit to be reentrant.
6. Programming exceptions cause Infoprint Server to abend so test your Password exit carefully. An ESTAE is in effect while the exit is running.
7. Future maintenance might require that you recompile the exit.

Input to the Password exit

- Arguments (optional): You can define arguments in the AOP_PASSWORD_EXIT environment variable in the transform configuration file. For example, you might want to pass the name of the password database as an argument to your Password exit.
- User identifier (optional): The user identifier. This identifier can be specified either in the **pdf-user-identifier** job attribute or in the **User identifier** field in the printer definition. Although the user identifier is optional, the transform calls the Password exit only if a user identifier or owner identifier is specified.
- Owner identifier (optional): The owner identifier. This identifier can be specified either in the **pdf-owner-identifier** job attribute or in the **Owner identifier** field in the printer definition. Although the owner identifier is optional, the transform calls the Password exit only if a user identifier or owner identifier is specified.

- Protected actions (optional): A list of actions that are to be restricted in the PDF document. These restricted actions can be specified either in the **pdf-protect** job attribute or in the **Protected actions** field in the printer definition. For information about the values in this list, see the description of the **pdf-protect** job attribute in "Job attributes for encrypting PDF documents" on page 39.

Rules for identifiers:

1. The identifier can contain any combination of 1-256 letters, numbers, blanks, and special characters.
2. The identifier is passed to the exit in EBCDIC representation (IBM-1047 code page).
3. The identifier is passed to the exit with the same case as it was specified. However, your password exit could ignore the identifier's case. The sample Password exit does not ignore the identifier's case.

Output from the Password exit

- User password (optional): The password for the user identifier.
- Owner password (optional): The password for the owner identifier.
- Protected actions: A list of actions that are to be restricted in the PDF document. For information about the actions that can be protected, see the description of the **pdf-protect** job attribute in "Job attributes for encrypting PDF documents" on page 39.

Rules for passwords:

1. Passwords can be 1 to 256 characters.
2. Adobe Reader allows passwords that contain blanks or special characters. However, if you use the sample Password exit, passwords cannot contain blanks or the pound sign (#).
3. If a user identifier or owner identifier is input to the Password exit, it must return a password for the identifier or the job fails.
4. If your Password exit returns a list of protected actions, it must also return an owner password or the job fails.
5. The user and owner passwords must not be the same.
6. Passwords must be in ASCII representation because PDF viewers expect ASCII passwords. For example, use ASCII code page ISO8859-1.

Sample Password exit

IBM provides a sample Password exit and sample password database:

/usr/lpp/Printsrv/lib/aokpdfexit.dll

This sample Password exit looks up passwords in the sample password database and returns a password for each identifier that is passed to it as input. It does not change the restricted actions.

The sample Password exit accepts the name of the password database as an argument. If no argument is specified for the sample exit in the AOP_PASSWORD_EXIT environment variable, the exit looks for the database in **/etc/Printsrv/aokpdfexit.db**.

/usr/lpp/Printsrv/samples/aokpdfexit.db

A sample password database that maps identifiers to passwords. To use the sample database with the sample exit, copy it to **/etc/Printsrv/aokpdfexit.db** because the sample exit looks for the password database in that location.

IBM provides the source code for the sample Password exit (**aokpdfexit.dll**) in these files:

/usr/lpp/Printsrv/samples/aokpdfexit.h:
> A header file that contains declarations and interface descriptions.
>
> **Rule:** Do not change the contents of this file.

/usr/lpp/Printsrv/samples/aokpdfexit.c
> The source code for the sample Password exit.

Steps for writing and installing a Password exit

1. Modify file **/usr/lpp/Printsrv/samples/aokpdfexit.c**, which contains the source code for the sample Password exit.

   File **/usr/lpp/Printsrv/samples/aokpdfexit.h** contains declarations and interface descriptions.

   _____

2. Link your Password exit as a dynamic link library (DLL). Follow instructions in **/usr/lpp/Printsrv/samples/aokpdfexit.h**.

   _____

3. Mark the UNIX file or MVS data set that contains your Password exit program-controlled. If the Password exit is in a UNIX file, use the z/OS UNIX **extattr** command to do this.

   Example: `exattr +p /etc/Printsrv/mypdfexit.dll`

   Tip: To use the **+p** option of the **extattr** command, you must have at least READ access to the BPX.FILEATTR.PROGCTL FACILITY class profile.

   _____

4. Set the permissions so that the file is owned and executable by UID 0 and with no group or other permissions.

   Example:
   ```
   su
   chown 0 /etc/Printsrv/mypdfexit.dll
   chmod 700 /etc/Printsrv/mypdfexit.dll
   ```

   Tip: To use the **chown** command, you must have an effective UID of 0. You can use the **su** command to switch to an effective UID of 0 if you are permitted to the BPX.SUPERUSER profile in the FACILITY class in RACF.

   _____

5. Specify the name of the Password exit and optional arguments in the AOP_PASSWORD_EXIT environment variable in the transform configuration file, **aopxfd.conf**. For information, see "Environment variables for the AFP to PDF transform" on page 85.

   Example:
   ```
   environment={AOP_PASSWORD_EXIT -> "/etc/Printsrv/mypdfexit.dll"}
   ```

   Tip: To edit the transform configuration file, you must have an effective UID of 0.

   _____

6. If you switched to an effective UID of 0 in step 4, switch back to your own user ID.

Example: `exit`

_____

7. Restart the Transform Manager to pick up the changes to the transform configuration file and to load your Password exit. For example, use the AOPSTOP and AOPSTART JCL procedures to stop and restart the Transform Manager:

```
START AOPSTOP,OPTIONS='-d xfd'
START AOPSTART
```

_____

Rule: If you modify the Password exit in the future, restart the Transform Manager to reload it.

Steps for writing a Password database

1. Create the password database. If you want to use the sample password database, copy it from **/usr/lpp/Printsrv/samples/aokpdfexit.db** to another directory and follow instructions in the sample database to add the user identifiers, owner identifiers, and passwords for your installation.

Example:

```
su
cp /usr/lpp/Printsrv/samples/aokpdfexit.db /etc/Printsrv/aokpdfexit.db
```

Tip: To copy the sample password database, you must have an effective UID of 0. You can use the **su** command to switch to an effective UID of 0 if you are permitted to the BPX.SUPERUSER profile in the FACILITY class in RACF.

_____

2. Set the z/OS UNIX permissions of the database so that it is owned by UID 0 and with no group or other permissions.

Example:

```
su
chown 0 /etc/Printsrv/mypdfexit.db
chmod 700 /etc/Printsrv/mypdfexit.db
```

Tip: To use the **chown** command, you must have an effective UID of 0. You can use the **su** command to switch to an effective UID of 0 if you are permitted to the BPX.SUPERUSER profile in the FACILITY class in RACF.

_____

3. (Optional) If your password exit accepts the name of the password database as an argument, specify the argument in the AOP_PASSWORD_EXIT environment variable in the transform configuration file, **aopxfd.conf**.

Example: The backslash in this example indicates that the text within the quotation marks continues on the next line:

```
environment={AOP_PASSWORD_EXIT -> "/etc/Printsrv/mypdfexit.dll \
/etc/Printsrv/mypdfexit.db"}
```

Tip: To edit the transform configuration file, you must have an effective UID of 0.

_____

4. If you switched to an effective UID of 0 in step 1 or step 2, switch back to your own user ID.

   Example: `exit`

_____

5. If you modified the transform configuration file, restart the Transform Manager to pick up the changes. For example, use the AOPSTOP and AOPSTART JCL procedures to stop and restart the Transform Manager:

```
START AOPSTOP,OPTIONS='-d xfd'
START AOPSTART
```

_____

Tip: If you modify the Password database without changing the transform configuration file, you do not need to restart the Transform Manager.

Customizing the AFP to PostScript transform

To customize the AFP to PostScript transform, do the tasks listed in Table 16. Required tasks are required by all installations. Optional tasks are required only if the listed condition applies to your installation.

Table 16. Tasks for customizing the AFP to PostScript transform

Task	Condition	See page
Specifying transform options	Required	103
Setting up security for AFP resource libraries	Required	119
Starting Infoprint Server with sufficient memory	Required	120
Installing and configuring the XML Toolkit	Optional: To transform XML input	121

Specifying transform options

You must create at least one transform entry in the Infoprint Server transform configuration file (**aopxfd.conf**) for the AFP to PostScript transform. In the transform entry, you can specify:

- Environment variables that control the transform
- Attributes that control how the Infoprint Server Transform Manager manages the transform.

For information about how to create and edit the Infoprint Server transform configuration file, see "Creating the transform configuration file (**aopxfd.conf**)" in _z/OS Infoprint Server Customization_. After you update the transform configuration file, you must restart the Infoprint Server Transform Manager.

Tip: After the Transform Manager starts, check for error messages in the transform's **stderr** file or in the Infoprint Server common message log if the common message log is enabled in Infoprint Server. If you find any error messages, fix the errors and restart the Transform Manager. For more information about how to find the transform message logs, see "Finding the transform stderr file" on page 152.

Transform classes

If you need to specify different transform options for different printers, you can create different classes of the AFP to PostScript transform. For example, you could create classes for printers that print on different paper sizes.

For each transform class, you must create a separate transform entry. You select a name for the transform class in the transform entry (see the **transform** attribute).

To use a transform class, job submitters must specify the class name as an option (**-c**) on the **afpxps** transform command or in the **filter-options** job attribute, and administrators must specify the class name as a filter option (**-c**) in the printer definition. For example, these z/OS UNIX commands use the "eu" transform class:

```
afpxps c eu -o myfile.ps myfile.afp
lp -d myprinter -o "filter-options='-c eu'" myfile.afp
```

Tip: The sample transform configuration file, **/usr/lpp/Printsrv/samples/ aopxfd.conf**, shows examples of transform entries with different transform classes. Also, see "Examples -- Transform configuration file entries for the AFP to PostScript transform" on page 118.

Default AFP resources

AFP resources are collections of data and control information that the transforms use to create PostScript documents. You can specify default AFP resources (such as a default font, form definition, and page definition) in the transform configuration file and in printer definitions. AFP resources specified in a printer definition override default resources specified in the transform entry. If only a few printers use different default AFP resources, you might want to specify these default AFP resources in the printer definitions.

In most situations, you should specify the same default AFP resources that your AFP printers use. These default resources are specified either in the PSF startup procedures (in the PRINTDEV statements) or, if PSF is configured to obtain PRINTDEV values from the Printer Inventory, in the PSF FSA definitions in the Printer Inventory.

Use these environment variables to specify default AFP resources in the transform configuration file:

- AOP_CHARS: The default font used for transform error messages and for line data and AFP data that does not specify another font.
- AOP_FORMDEF: The default form definition used when no other form definition is specified.
- AOP_PAGEDEF: The default page definition used when no other page definition is specified.

Search hierarchy for form definitions: The transform uses this hierarchy to select the name of the form definition:

1. The form definition specified in the **form-definition** job attribute or FORMDEF JCL parameter.
2. The form definition specified in the **Form definition** field in the printer definition.
3. The first inline form definition.
4. The form definition specified in the AOP_FORMDEF environment variable in the transform configuration file.
5. Form definition F1CP0111. This default is coded in the transform.

Tips:

1. If form definition name **dummy** is specified, the transform uses the first inline form definition.

2. After the transform determines the name of the form definition, the transform first searches for the form definition inline in the data set, and then searches in the user and system resource libraries.

Search hierarchy for page definitions: The transform uses this hierarchy to select the name of the page definition:

1. The page definition specified in the **page-definition** job attribute or the PAGEDEF or FCB JCL parameter. (The PAGEDEF parameter overrides the FCB parameter.)

2. The default page definition supplied by JES to IP PrintWay basic mode. (See Tips.)

3. The page definition specified in the **Page definition** field in the printer definition.

4. The first inline page definition.

5. The page definition specified in the AOP_PAGEDEF environment variable in the transform configuration file.

6. Page definition P1P08682. This default is coded in the transform.

Tips:

1. If page definition name **dummy** is specified, the transform uses the first inline page definition.

2. After the transform determines the name of the page definition, the transform first searches for the page definition inline in the data set, and then searches in the user and system resource libraries.

3. JES supplies a default page definition for batch jobs submitted to IP PrintWay basic mode with OUTPUT and DD JCL statements. If you want to use the default page definition specified in the transform configuration file, you can request that JES not supply a default page definition to the IP PrintWay basic mode FSA. For more information about the JES initialization parameters to do this, see *z/OS Infoprint Server Customization*.

Search hierarchy for fonts: The transform uses this hierarchy to select a font for line data and AFP data that does not specify a font:

1. The font named in the page definition.

2. The font specified in the **chars** job attribute or the CHARS or UCS JCL parameter. (The CHARS JCL parameter overrides the UCS parameter.)

3. The default font supplied by JES to IP PrintWay basic mode. (See Tip.)

4. The font specified in the **Character set** field in the printer definition.

5. The font specified in the AOP_CHARS environment variable in the transform configuration file. The transform prefixes X0 to the font named in the variable if you do not specify a prefix.

6. Font X060D9. This default is coded in the transform.

Tip: JES supplies a default font for jobs submitted to IP PrintWay basic mode with OUTPUT and DD JCL statements. If you want to use the default font specified in the transform configuration file, you can request that JES not supply a default font to the IP PrintWay basic mode FSA. For more information about the JES initialization parameters to do this, see *z/OS Infoprint Server Customization*.

Search hierarchy for the message font: The transform uses this hierarchy to select a font for transform error messages:

1. The font named in the page definition specified in the AOP_MSGPAGEDEF environment variable.

2. The font specified in the AOP_CHARS environment variable in the transform configuration file. The transform prefixes X0 to the font named in the variable if you do not specify a prefix.

3. Font X060D9. This default is coded in the transform.

AFP system resource libraries

In the transform entry, you can specify from 1 to 8 AFP system resource libraries for fonts, page definitions, form definitions, page segments, and overlays. You can specify from 1 to 8 AFP user resource libraries in printer definitions.

In most situations, you should specify the same AFP system resource libraries in the transform configuration file as you currently specify in your PSF startup procedures. If only a few printers require different resource libraries, you can specify those libraries in the printer definitions for the printers.

Use these environment variables to specify system resource libraries in the transform configuration file:

- AOP_FONTLIB: The names of 1 to 8 system font libraries.
- AOP_FORMDEFLIB: The names of 1 to 8 system form definition libraries.
- AOP_OVERLAYLIB: The names of 1 to 8 system overlay libraries.
- AOP_PAGEDEFLIB: The names of 1 to 8 system page definition libraries.
- AOP_PAGESEGLIB: The names of 1 to 8 system page segment libraries.

AFP user resource libraries can be specified in job attributes, JCL parameters, environment variables, and in the printer definition.

The transforms use this hierarchy when searching AFP resource libraries:

1. User resource libraries specified in the **resource-library** job attribute or USERLIB JCL parameter.

2. Default user resource libraries specified in the **Resource library** field in the printer definition. These libraries are searched only when the job submitter does not specify any user resource libraries (see step 1).

3. System resource libraries specified in environment variables in the transform configuration file.

4. Default system resource libraries that are hard-coded in the transform. These libraries are searched only if no system resource libraries are specified in the transform configuration file (see step 3).

AFP system resource directories

In the transform entry, you can specify from one to eight UNIX file resource path directories that contain TrueType, OpenType, and WorldType fonts. The directory path can be up to 255 characters. The fonts must be installed in each directory with a resource installer that builds a resource access table (RAT) to describe the fonts in that directory. You can also specify the resource directories in printer definitions.

In most situations, you should specify the same AFP resource directories in the transform configuration file as you currently specify in your PSF startup procedures. If only a few printers require different resource directories, you can specify those libraries in the printer definitions for the printers.

Use the AOP_FONTPATH environment variable to specify the resource directories in the transform configuration file:

AFP user resource directories can be specified in job attributes, JCL parameters, environment variables, and in the printer definition.

The transform uses this hierarchy when searching AFP resource directories:

1. User resource directories specified in the **resource-directories** job attribute or USERPATH JCL parameter.
2. Default user resource directories specified in the **Resource directories** field in the printer definition. These directories are searched only when the job submitter does not specify any user resource directories (see step 1).
3. Resource directories specified in the AOP_FONTPATH environment variable in the transform configuration file.
4. Default resource directory that is hard-coded in the transform (/usr/lpp/fonts/worldtype/V8.0). This directory is searched only if no resource directories are specified in the transform configuration file (see step 3).

Format of an AFP to PostScript transform entry

The format of an AFP to PostScript transform entry in the transform configuration file (**aopxfd.conf**) is:

```
transform afpxps[_transformclass]
    start-command = afpxpsd
    [ environment = {name -> value [ name -> value]... } ]
    [ maximum-active = number ]
    [ maximum-idle-time = seconds ]
    [ minimum-active = number ]
    ;
```

transform afpxps[_transformclass]
> This statement indicates the beginning of a transform entry.

> **afpxps**
>> The name of the transform.

> *transformclass*
>> The name of an optional transform class. Specify from 1 to 56 characters, including letters, numbers, or special characters. The name of the transform class is case-sensitive.

>> **Default:** No transform class.

>> **Example:** transform afpxps_us

start-command = afpxpsd
> The name of the transform daemon. If the transform daemon is not in a directory identified in the PATH environment variable specified in the **aopstart** EXEC, specify the full directory path name of the daemon. (The **afpxpsd** daemon is installed in **/usr/lpp/Printsrv/bin**.) This attribute is required.

> **Default:** None.

> **Example:** start-command=/usr/lpp/Printsrv/bin/afpxpsd

environment = {*name* -> *value* [*name* -> *value*]... }
> Environment variables that specify transform options. Enclose the entire set of environment variables in braces. The values in these environment

variables override environment variables with the same name that are set in the **aopstart** EXEC. If a value contains special characters or spaces, enclose the value in single or double quotation marks.

For information about the environment variables you can specify, see "Environment variables for the AFP to PostScript transform."

Default: None.

Example: `environment={AOP_FORMDEF -> F1CP0111}`

maximum-active = *number*
: The maximum number of transform daemons that the Transform Manager activates concurrently. Specify a number greater than 0 and greater than or equal to the number specified in the **minimum-active** attribute. For more information, see "Format of a transform entry" in *z/OS Infoprint Server Customization*.

Default: No maximum number. Transform daemons are started when needed.

maximum-idle-time = *seconds*
: The number of seconds before the Transform Manager shuts down an idle transform daemon and system resources are freed. Specify a number greater than 0. For more information, see "Format of a transform entry" in *z/OS Infoprint Server Customization*.

Default: Idle transform daemons are not shut down.

minimum-active = *number*
: The minimum number of transform daemons that the Transform Manager activates concurrently. Specify a number less than or equal to the number specified in the **maximum-active** attribute.For more information, see "Format of a transform entry" in *z/OS Infoprint Server Customization*.

Default: minimum-active = 0

Environment variables for the AFP to PostScript transform

You can specify environment variables to:
- Specify default AFP resources, such as the default form definition and page definition.
- Specify AFP system resource libraries.
- Select transform functions, such as whether to create color output.
- Name the paper sizes in AFP input trays, and map AFP input tray IDs to PostScript input trays.

You can optionally specify these environment variables:

__AOPXFORM_DAEMON_DEBUG

Note: There are two underscores at the beginning of this environment variable.

Indicates whether the transform front-end dll code is traced.

The front-end dll code is responsible for parsing environment variables and options. No other options are needed for this trace.

This trace includes information about the transform configuration and job data that is processed and errors that occur.

The output for this trace is always directed to the transform **stderr** file and cannot be redirected. For more information about the **stderr** file, see "Finding the transform stderr file" on page 152.

Valid values are:

yes   The transform front-end dll code is traced.

no   The transform front-end dll code is not traced.

Default: __AOPXFORM_DAEMON_DEBUG –> no

Example: environment={ __AOPXFORM_DAEMON_DEBUG –> yes}

Note: For another method to trace front-end dll code, see "Trace options" on page 153.

_BPX_JOBNAME

The job name for this transform. When you assign a different job name to each class of transform, the operator can manage the transform daemons more effectively. Specify a job name of 1 to 8 alphanumeric characters. Incorrect job names are ignored. For more information about the _BPX_JOBNAME variable, see *z/OS UNIX System Services Planning*.

Default: The job name is AOPXFD.

Example: environment={_BPX_JOBNAME –> afpxpsD}

AOP_ASSUME_RIDIC_UNPAD

Indicates whether all G4 MMR (Modified Modified READ (ITU-TSS T.6 Group 4 two-dimensional coding standard for facsimile)) images are unpadded RIDIC. In some IOCA images the RECID incorrectly states that the encoding is RIDIC when it is actually unpadded RIDIC. If the RECID for the G4 MMR image specifies RIDIC, but the width of the image is not padded with zeros, set AOP_ASSUME_RIDIC_UNPAD-> yes.

Valid values are:

yes   Ignore the G4 MMR RECID setting and process all G4 MMR images as unpadded.

no   Decode G4 MMR images as specified in the RECID.

Default: AOP_ASSUME_RIDIC_UNPAD –> no

Example: environment={AOP_ASSUME_RIDIC_UNPAD –> yes}

AOP_CHARS

The default coded font. The transforms use this font to format error messages unless the page definition specified in the AOP_MSGPAGEDEF variable names a font. The transforms also use this font for (1) line data when no other font is specified in the page definition used to print the document and (2) AFP data when no other font is specified in the AFP data stream.

If this environment variable is not specified, the default font is X060D9. The default font you specify, or font X060D9, must exist in one of the AFP font libraries so that the transform can write error messages in the output.

Specify the 1 to 4 character coded font name. You can specify the X0 or XZ prefix of the coded font name. If you do not specify a prefix, the transform adds an X0 prefix. Some coded fonts have 6-character names, not counting the

X0 or XZ prefix. For these fonts, use the 4-character alternate coded font name. For font names and alternate font names, see *IBM AFP Fonts: Font Summary for AFP Font Collection*.

Rules:
1. Specify only one default coded font in this environment variable.
2. The font you specify, or default font X060D9, must exist in one of the AFP font libraries so that the transform can write error messages in the output. The coded font member for a raster font, for example X060D9, must exist in an AFP font library specified to the transform.
3. The code page associated with this coded font must be an EBCDIC code page.

Tips:
1. You might want to specify the same font as the resident font in the AFP printer to which output is typically printed.
2. Specify an outline font because outline fonts provide higher quality output for printing and viewing.

Default: AOP_CHARS –> 60d9 (This is font X060D9 because the transform adds prefix X0.)

Example: environment={AOP_CHARS –> 60d8}

AOP_COLOR

Indicates whether the transform is to produce color output. The transform supports the MO:DCA OCA color commands. Specify **yes** if the printer supports color. Valid values are:

yes   The transform produces color output.

no   The transform does color simulation.

Default: AOP_COLOR –> no

Example: environment={AOP_COLOR –> yes}

AOP_CUTSHEET

Indicates whether the transform is to prepare the output for printing on a cutsheet printer. Valid values are:

yes   The output is to be printed on a cutsheet printer. Therefore, the transform uses the cutsheet and N_UP specifications in the form definition to determine whether to send medium orientation information to the printer. For more information, see the description of the CUTSHEET and N_UP commands in *Page Printer Formatting Aid: User's Guide*.

           Tip: Select this option if your output is incorrectly printing in the down direction on a cutsheet printer.

no   The output is not to be printed on a cutsheet printer. Therefore, the transform always sends medium orientation information to the printer.

Table 13 on page 69 shows how the value of the AOP_CUTSHEET environment variable and values set in the form definition determine the orientation of the output. The shaded row is the only scenario where the orientation specified in the form definition results in a different output orientation.

Default: AOP_CUTSHEET –> no

Example: `environment={AOP_CUTSHEET –> yes}`

AOP_EMBED_OUTLINES

Indicates whether the transform includes outline fonts in the PostScript output. Valid values are:

yes The transform includes outline fonts in the PostScript output. This option provides improved output fidelity; however, each typeface increases the size of the PostScript output file by approximately 175 KB.

no The transform converts outline fonts to equivalent raster fonts and includes them in the PostScript data stream. This option produces smaller output files than when outline fonts are included in the PostScript output.

Default: AOP_EMBED_OUTLINES –> yes

Example: `environment={AOP_EMBED_OUTLINES –> no}`

AOP_FAIL_ON_ERROR

Specifies whether the transform stops processing when a warning or data stream error occurs during the transform. Warnings can indicate degraded output.

Valid values are:

error The transform fails when a data stream error occurs and does not create an output document. However, the transform continues if warnings occur. This is the default.

no The transform attempts to continue processing and create an output document when a warning or data stream error occurs.

warning
The transform fails when a warning or data stream error occurs and does not create an output document.

Tips:

1. The **fail-on-transform-error** job attribute and the **Fail on error** field in the printer definition override this value.
2. You can specify the value using lowercase or uppercase letters (for example, no or NO).
3. The **Fail on error** printer definition attribute can also be set using the ISPF panel in the processing section.

Default: AOP_FAIL_ON_ERROR –> error

Example: `environment={AOP_FAIL_ON_ERROR –> no}`

AOP_FAIL_ON_IMAGE_ERROR

Indicates whether the transform continues to process the document when the transform cannot decode an IOCA image because of certain compression padding errors. Some compression algorithms cause unpadded RIDIC images to be read as padded RIDIC by the transform.

Valid values are:

yes   If the transform cannot decode an IOCA image, it issues a message and stops processing the document.

no   If the transform cannot decode an IOCA image, it issues a message, stops processing the image, and continues 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 proceeds one of two ways:

- If the RECID indicates RIDIC and the transform fails to decode it as RIDIC, it tries to decode it again as unpadded RIDIC.
- If the RECID indicates unpadded RIDIC, and the transform fails to decode the image that way, it tries to decode it again as RIDIC.

If the transform still cannot decode the G4 MMR image, or if the image is not a G4 MMR image, the transform issues an error message, stops processing the image, and continues 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 proceeds one of two ways:

- If the RECID indicates RIDIC and the transform fails to decode it as RIDIC, it tries to decode it again as unpadded RIDIC.
- If the RECID indicates unpadded RIDIC, and the transform fails to decode the image that way, it tries to decode it again as RIDIC.

If the transform still cannot decode the G4 MMR image, or if the image is not a G4 MMR image, the transform issues a message and stops processing the document.

Default: AOP_FAIL_ON_IMAGE_ERROR –> yes

Example: `environment={AOP_FAIL_ON_IMAGE_ERROR –> no}`

AOP_FONTLIB

The AFP system resource libraries that contain fonts. Specify 1 to 8 data set names. Separate each name with a space. Libraries are searched in the order listed.

Specify the AFP 240-pel or300-pel raster and outline font libraries used by your installation:

- Specify AFP 240-pel or300-pel raster font libraries if either (1) you specify a raster font in the AOP_CHARS environment variable or (2) documents to be transformed reference raster fonts.
- Specify AFP outline font libraries if data to be transformed references outline fonts.

Default: AOP_FONTLIB –> "sys1.font300 sys1.fontoln"

Examples:

1. `environment={AOP_FONTLIB –> "sys1.font300"}`
2. The backslash in this example indicates that the text within the quotation marks continues on the next line:

   ```
   environment={AOP_FONTLIB –> "sys1.font300 \
     sys1.fontoln inst.font300"}
   ```

AOP_FONTMAP_TABLE
The full path name of a UNIX file that contains a font-mapping table.

Default: No file path.

Example:

```
environment={AOP_FONTMAP_TABLE -> /usr/lpp/Printsrv/samples/aokfontmap.samp}
```

AOP_FONTPATH
The directories that contain TrueType, OpenType, and WorldType fonts that the transform uses to process data sets. The directory path can be up to 255 characters and you can specify from one to eight UNIX file resource path directories. The transform searches for fonts in the directories in the order they are specified. The fonts must be installed in each directory with a resource installer that builds a resource access table (RAT) to describe the fonts in that directory. To find out how to install fonts, see "Using TrueType, OpenType, and WoldType fonts" on page 125.

Default: AOP_FONTPATH –> "/usr/lpp/fonts/worldtype/v8.0"

Examples:
1. Single directory specified:
   ```
   environment={AOP_FONTPATH -> "/usr/lpp/fonts/collections"}
   ```
2. Multiple directories specified with a blank between the paths:
   ```
   environment={AOP_FONTPATH -> "/usr/lpp/fonts/myfonts /jdoe/fonts/truetype"}
   ```

   Tip: Separate directory paths with a space. Spaces are not allowed within the directory path name.
3. The backslash in this example indicates that the text within the quotation marks continues on the next line:
   ```
   environment={AOP_FONTPATH -> "/usr/lpp/fonts/collections \
   /usr/lpp/fonts/wt_ttf"}
   ```

AOP_FORMDEF
The default form definition used to format the input data stream. Specify the 1 to 8 character form definition name, with or without the F1 prefix. If you omit the F1 prefix, the transform adds it.

The transform uses this form definition only if no other form definition is specified.

Default: AOP_FORMDEF –> F1CP0110

Example: `environment={AOP_FORMDEF -> F1CP0111}`

AOP_FORMDEFLIB
The AFP system resource libraries that contain form definitions. Specify from 1 to 8 data set names. Separate each name with a space. Libraries are searched in the order listed.

Default: AOP_FORMDEFLIB –> "sys1.fdeflib"

Example: `environment={AOP_FORMDEFLIB -> "sys1.fdeflib inst.fdeflib"}`

AOP_MAX_RECORD_LENGTH
This value is used internally for data transfer. If transforming output to an MVS data set, specify a value that represents the smallest record length for

MVS data sets that will be used for transform output. A larger value will result in better transform throughput and performance. Specify MAX if not transforming output to MVS data sets.

Valid values are:

696 - 32756
> Specify the record length of the MVS data set used to receive transform output.

MAX   The maximum record length of 32756 will be used.

Tips:

1. A record length of 32756 for the MVS data set is recommended.
2. If 32756 is specified, use MAX for this environment variable.

Default: AOP_MAX_RECORD_LENGTH ->1024

Example: `environment={AOP_MAX_RECORD_LENGTH–> MAX}`

AOP_MSGFORMDEF
> The form definition used to format transform error messages. Specify the 1 to 8 character form definition name, with or without the F1 prefix. If you omit the F1 prefix, the transform adds it. This form definition must be located in one of the libraries specified in the AOP_FORMDEFLIB variable.

Default: AOP_MSGFORMDEF –> F1CP0110

Example: `environment={AOP_MSGFORMDEF –> F1CP0111}`

AOP_MSGPAGEDEF
> The page definition used to format transform error messages. Specify the 1 to 8 character page definition name, with or without the P1 prefix. If you omit the P1 prefix, the transform adds it. This page definition must be located in one of the libraries specified in the AOP_PAGEDEFLIB variable. The transform formats messages for the first paper size defined in the AOP_PAPER variable.

> **Recommendation:** Use page definition P1P08682 for letter size paper, and page definition P1Q09182 for A4 paper.

Default: AOP_MSGPAGEDEF –> P1P08682

Example: `environment={AOP_MSGPAGEDEF –> P1P06362}`

AOP_OFFSET_JOGGING
> Indicates how the transform supports offset stacking (also called jogging). Offset stacking is requested in the form definition (medium map). If the form definition requests offset stacking, the transform can offset, shift, or rotate each subset in the output depending on the printer support. The printer must support PJL commands.

> Valid values are:

no   The transform ignores offset stacking requested in the form definition.

rotate
> The transform rotates the output by creating a new printer job for each subset and specifying the PJL DEFAULT JOBOFFSET=ROTATE command for the job. Printers that support this PJL command include some Ricoh printers.

shift The transform shifts the output by creating a new printer job for each subset and specifying the PJL DEFAULT JOBOFFSET=SHIFT command for the job. Printers that support this PJL command include some Ricoh printers.

yes | on
The transform offsets the output by creating a new printer job for each subset and specifying the PJL DEFAULT JOBOFFSET=ON command for the job. (Value "yes" is the same as "on".)

Rule: If you specify rotate, shift, yes, or on, the printer must support PJL commands. In addition, you must specify the AOP_PJL -> yes environment variable.

If you specify AOP_PJL -> yes and use the IP PrintWay extended mode Direct Sockets protocol to send documents to the printer, do not select the "Record pages printed for accounting" and "Restart printing after last successful page" options in the printer definition for the printer. This is because a PJL JOB command in the document can conflict with the PJL JOB command that IP PrintWay adds to the document to track the number of pages that print successfully.

Default: AOP_OFFSET_JOGGING –> no

Example: `environment={AOP_OFFSET_JOGGING –> yes}`

Note: If you specify rotate, shift, yes, or on, fonts are sent to the printer again for each new printer job, which can adversely affect performance. In addition, other documents might print between the printer jobs.

AOP_OVERLAYLIB
The AFP system resource libraries that contain overlays. Specify from 1 to 8 data set names. Separate each name with a space. Libraries are searched in the order listed.

Default: AOP_OVERLAYLIB –> "sys1.overlib"

Example: `environment={AOP_OVERLAYLIB –> "sys1.overlib inst.overlib"}`

AOP_PAGEDEF
The default page definition used to format line data. Specify the 1 to 8 character page definition name, with or without the P1 prefix. If you omit the P1 prefix, the transform adds it. The transform uses this page definition only if no other page definition is specified.

Recommendation: Use page definition P1P08682 for letter size paper, and page definition P1Q09182 for A4 paper.

Default: AOP_PAGEDEF –> P1P08682

Example: `environment={AOP_PAGEDEF –> P1Q09182}`

AOP_PAGEDEFLIB
The AFP system resource libraries that contain page definitions. Specify from 1 to 8 data set names. Separate each name with a space. Libraries are searched in the order listed.

Default: AOP_PAGEDEFLIB –> "sys1.pdeflib"

Example: `environment={AOP_PAGEDEFLIB —> "sys1.pdeflib inst.pdeflib"}`

AOP_PAGESEGLIB

> The AFP system resource libraries that contain page segments. Specify from 1 to 8 data set names. Separate each name with a space.
>
> **Default:** AOP_PAGESEGLIB —> "sys1.pseglib"
>
> **Example:** `environment={AOP_PAGESEGLIB —> "sys1.pseglib inst.pseglib"}`

AOP_PAPER

> The name of the paper that is typically installed in each AFP input tray. The transform formats the PostScript output for the paper in the AFP input tray ID the document selects.
>
> The position (1 through 9) of each paper name represents the number of the AFP input tray. The 10th position represents any AFP input tray number greater than 9.
>
> You can specify from 1 to 10 paper names. Separate each name with a space. If you specify fewer than 10 paper names, the transform uses the paper name in position 1.
>
> For more information about the paper names you can specify, see "Paper names" on page 126.
>
> Valid paper names and their sizes (width x height) are:

Paper Name	Size
auto	The transform uses the page size in the Page Descriptor (PGD) structured field.
a3	292.25 x 413.25 mm
a4	210 x 297 mm
a5	148.3 x 210 mm
b4	250 x 353 mm
b5	176 x 250 mm
c5	162 x 229 mm (6.48 x 9.16 in.)
com10	4.125 x 9.5 in. (104.8 x 241.3 mm)
dl	110 x 220 mm (4.4 x 8.8 in)
executive	7.25 x 10.5 in (185 x 267 mm)
ledger	11 x 17 in (279 x 432 mm)
legal	8.5 x 14.0 in (216 x 356 mm)
letter	8.5 x 11.0 in (216 x 279 mm)
monarch	3.875 x 7.5 in. (98.4 x 190.5 mm)

> **Default:** AOP_PAPER —> "letter letter letter letter letter letter letter letter letter letter"
>
> **Example:** The backslash in this example indicates that the text within the quotation marks continues on the next line:
>
> ```
> environment={AOP_PAPER —> "letter legal letter letter \
> letter letter letter letter letter letter"}
> ```
>
> In this example, if the document to be transformed specifies:
>
> - AFP input tray 1, the transform formats the output for `letter` size paper.
> - AFP input tray 2, the transform formats the output for `legal` size paper.

- AFP input tray greater than 9, the transform formats the output for `letter` size paper.

AOP_PJL

Indicates whether the printer accepts all PCL 5 commands, including PJL commands. All printers that support PCL 5 support PJL commands. Some printers that support only PCL 4 do not support PJL commands. Sometimes, a printer that does not support PJL commands prints a smiley face where a PJL command occurs in the data stream or prints the PJL command on the first page. Valid values are:

yes The printer accepts PJL commands.

no The printer does not accept PJL commands. Therefore, the AFP to PostScript transform does not create PJL commands.

Default: AOP_PJL –> no

Example: `environment={AOP_PJL –> yes}`

Tip: If you use IP PrintWay extended mode, specify AOP_PJL -> no because a PJL JOB command in the document can conflict with the PJL JOB command that IP PrintWay adds to the document to track the number of pages that print successfully.

AOP_TRAILER_ERROR_PAGE

Specifies whether the transform writes messages for transform warnings and data stream errors to a trailer error page. The trailer error page is the last page in the output document. Warnings can indicate degraded output.

Valid values are:

error The transform writes error messages, but not warning messages, to a trailer error page. This option does not apply when `AOP_FAIL_ON_ERROR–>` error or `AOP_FAIL_ON_ERROR–>warning` because no output document is created when an error occurs.

no No trailer error page is produced.

warning

The transform writes warning and error messages to a trailer error page. This option does not apply when `AOP_FAIL_ON_ERROR–>warning` because no output document is created when an error or warning occurs. This is the default.

Tips:

1. The **trailer-transform-error-page** job attribute and the **Trailer error page** field in the printer definition override this value.

2. You can specify the value using lowercase or uppercase letters (for example, `no` or `NO`).

3. The **Trailer error page** printer definition attribute can also be set using the ISPF panel in the processing section.

Default: AOP_TRAILER_ERROR_PAGE –> warning

Example: `environment={AOP_TRAILER_ERROR_PAGE –> error}`

AOP_TRAYID

A mapping of AFP input tray numbers to PostScript tray IDs. The position (1 -

9) of each PostScript tray ID corresponds to the AFP tray number. The 10th position corresponds to all AFP input tray numbers greater than 9.

Specify 1 to 10 PostScript tray numbers, separating each number with a space. Number 0 (zero) indicates that an input tray is not installed in the printer. A value of **M** indicates the manual input tray. If the input document requests an input tray that is not installed, the transform writes an error message in the output file and uses the tray ID in position 1.

Tip: Specify the ID used by the PostScript printer to select each tray. This value, minus 1, corresponds to an entry in the **Priority** array in the **InputAttributes** dictionary for the PostScript printer. Printer-specific values are described in the PostScript PPD file for the printer.

Default: AOP_TRAYID –> "1 2 0 0 0 0 0 0 0 0 M"

Example: environment={AOP_TRAYID –> "1 4 1 1 1 1 1 1 1 M"}

In this example, if the AFP document specifies:
- AFP input tray 1, the transform uses PostScript tray 1.
- AFP input tray 2, the transform uses PostScript tray 4.
- AFP input tray 3 through 9, the transform uses PostScript tray ID 1.
- AFP input tray greater than 9, the transform uses the manual input tray.

Examples -- Transform configuration file entries for the AFP to PostScript transform

This section shows sample transform entries in the Infoprint Server transform configuration file (**aopxfd.conf**) for the AFP to PostScript transform.

Print on letter and legal size paper
This transform entry can be used for printers that print on letter and legal size paper. To use this entry, do not specify a transform class.

```
transform afpxps
 start-command = afpxpsd
 minimum-active = 1
 maximum-active = 2
 maximum-idle-time = 300 # 5 minutes
 environment = {
  _BPX_JOBNAME -> afpxpsD
  AOP_CHARS -> 60d9
  AOP_FONTLIB -> "sys1.font300"
  AOP_FORMDEF -> F1CP0110
  AOP_FORMDEFLIB -> "sys1.fdeflib"
  AOP_MSGFORMDEF -> F1CP0110
  AOP_MSGPAGEDEF -> P1P08682
  AOP_OVERLAYLIB -> "sys1.overlib"
  AOP_PAGEDEF -> P1P08682
  AOP_PAGEDEFLIB -> "sys1.pdeflib"
  AOP_PAGESEGLIB -> "sys1.pseglib"
  AOP_PAPER ->
   "letter legal letter letter letter letter letter letter letter letter"
  AOP_TRAYID -> "1 4 1 1 1 1 1 1 1 2"

  }
 ;
```

Print on A3, A4, and C5 paper
This transform entry can be used for printers that print on A3, A4, and C5

paper. This transform entry creates transform class "eu". To use this transform class, specify the class in the -c transform option as shown in these two examples:

- `afpxps -c eu -o myfile.ps myfile.afp`
  `lp -o "filter-options='-c eu'" -d myprinter myfile.afp`
- ```
  transform afpxps_eu
    start-command = afpxpsd
    minimum-active = 1
    maximum-active = 2
    maximum-idle-time = 300 # 5 minutes
    environment = {
      _BPX_JOBNAME -> afpxpsD
      AOP_CHARS -> 60d9
      AOP_FONTLIB -> "sys1.font300"
      AOP_FORMDEF -> F1CP0110
      AOP_FORMDEFLIB -> "sys1.fdeflib"
      AOP_MSGFORMDEF -> F1CP0110
      AOP_MSGPAGEDEF -> P1P08682
      AOP_OVERLAYLIB -> "sys1.overlib"
      AOP_PAGEDEF -> P1P08682
      AOP_PAGEDEFLIB -> "sys1.pdeflib"
      AOP_PAGESEGLIB -> "sys1.pseglib"
      AOP_PAPER -> "a4 a3 a4 a4 a4 a4 a4 a4 a4 c5"
      AOP_TRAYID -> "1 4 1 1 1 1 1 1 1 2"
    }
  ;
  ```

Setting up security for AFP resource libraries

This section describes the RACF access that is required for AFP *system resource libraries* and *user resource libraries*.

- System resource libraries are libraries specified in the transform configuration file.
- User resource libraries are libraries specified in the (1) **Resource libraries** field in the printer definition, (2) USERLIB parameter of the OUTPUT JCL statement, or (3) **resource-library** job attribute.

This RACF access is required:

- The user ID that starts Infoprint Server must have RACF READ access to all system resource libraries and user resource libraries that the transform uses.

  Users who start Infoprint Server must be members of the AOPOPER RACF group, or have a UID of 0. (AOPOPER is the default group name for Infoprint Server operators. However, your installation can assign a different name to this group.) Therefore, you should give the AOPOPER group READ access to the resource libraries. If someone with a user ID of 0 who is not a member of the AOPOPER group can start Infoprint Server (for example, using the **aopstart** command), you must also give this user READ access to the resource libraries.

- Job submitters must have RACF READ access to all user AFP resource libraries that are specified in the printer definition, JCL statements, or job attributes.

  In addition, job submitters must use a job submission method that authenticates their z/OS user IDs so that Infoprint Server can use the user ID to check RACF access to the resource libraries. Job submission methods that can authenticate z/OS user IDs include:

  - **lp**, **afpxpcl**, **afpxpdf**, and **afpxps** commands
  - Windows SMB protocol
  - AOPPRINT and AOPBATCH JCL procedures
  - z/OS JCL that submits a print job to the Infoprint Server subsystem

– z/OS JCL that submits a print job to IP PrintWay extended mode

Job submitters who use other job submission methods, such as the Infoprint Port Monitor for Windows, can only use user AFP resource libraries that have universal READ access.

Tips:

1. To limit access to AFP resources, your installation should use the AOPSTART JCL procedure (instead of the **aopstart** command) to start Infoprint Server. This is because you can associate one user ID with the AOPSTART JCL procedure, and this user ID can be the sole member of the AOPOPER group.

2. Specify the RACF NOTIFY parameter in the RACF profiles for AFP resource libraries so that you can receive RACF messages when a user does not have READ access to an AFP resource library. Infoprint Server writes a message (AOP092E) to the common message log and job submitter (if the job submission method allows messages to be returned) when the user does not have READ access to the AFP resource libraries. However, Infoprint Server suppresses RACF messages for failed access checks if you do not request RACF notification in the RACF NOTIFY parameter (on the RDEFINE or RALTER command).

Setting up security for AFP user path directories

The transform must have read permissions set for each user path directory and file it is accessing. If the permissions for each directory or file are not set correctly, the transform cannot access the path directory or file.

The user or system administrator uses z/OS UNIX System Services to set access permissions to path directories and files specified in:

- **resource-directories** job attribute
- **Resource directories** field in the printer definition
- USERPATH parameter of the OUTPUT JCL statement

For more information about z/OS UNIX System Services, see *z/OS UNIX System Services Command Reference*.

Starting Infoprint Server with sufficient memory

When you use the print transforms, the amount of available memory for Infoprint Server must be at least 256 megabytes. To make sure that sufficient memory is available:

- In the Infoprint Server AOPSTART JCL procedure, specify a region size of at least 256 megabytes in the REGION parameter on the EXEC statement. If the REGION parameter is not specified, the default region size defined for your installation is used.

- Make sure that the maximum address space size for Infoprint Server is at least 256 megabytes.

  You can set the system-wide maximum address space size in the BPXPRMxx member or with the SETOMVS command.

  Examples:

  1. This statement in the BPXPRMxx member sets the maximum address space size to 256 megabytes:

     ```
     MAXASSIZE(268435456)  /* 256*1024*1024 = 256MB   */
     ```

  2. This command sets the maximum address space size to 256 megabytes:

```
SETOMVS MAXASSIZE=268435456
```

3. This command checks the MAXASSIZE value from the operator console:

```
d omvs,o
```

You can set the maximum address space for Infoprint Server higher than the system-wide maximum in the ASSIZEMAX parameter of the RACF ADDUSER and ALTUSER command for the user that starts Infoprint Server. The ASSIZEMAX value overrides the MAXASSIZE value.

If you enter the Infoprint Server **aopstart** command from the z/OS UNIX command line during a TSO session, the SIZE parameter on the TSO/E LOGON panel determines the maximum region size for an address space. Specify a SIZE parameter of at least 256 megabytes.

If you start Infoprint Server using the **aopstart** command, the z/OS UNIX **ulimit** command can limit the maximum size of the Infoprint Server address space.

- The z/OS IEFUSI user exit can modify the region size of an address space. IBM strongly discourages you from altering the region size of address spaces in the OMVS subsystem category.

Related information:

1. For information about how to edit the AOPSTART JCL procedure, see "Editing the AOPSTART startup procedure" in *z/OS Infoprint Server Customization*.
2. For information about the IEFUSI exit, see *z/OS MVS Installation Exits*.

Installing and configuring the XML Toolkit

When transforming XML files, you must install and configure the IBM XML Toolkit for z/OS, C++ edition, V1.10. For information about the XML Toolkit, including installation instructions and the Program Directory, see the Toolkit home page, http://www.ibm.com/servers/eserver/zseries/software/xml.

To configure the XML toolkit, add the path to locate the XML DLLs to the LIBPATH environment variable in the **aopstart** EXEC. Add the IBM XML Toolkit for z/OS, C++ edition, V1.10 and Infoprint Server libraries before any existing values in LIBPATH. For example:

```
LIBPATH=/usr/lpp/ixm/IBM/xml4c-5_7/lib:/usr/lpp/ixm/IBM/xslt4c-1_11/lib:...
```

After editing the **aopstart** EXEC, stop and restart Infoprint Server.

For information about how to edit the **aopstart** EXEC, see *z/OS Infoprint Server Customization*.

Mapping raster fonts to outline fonts

The AFP to PCL transform includes all raster fonts in the output data stream. This transform rasterizes outline fonts to 300-dpi raster fonts and includes them in the output data stream.

The AFP to PDF transform includes all outline and raster fonts in the output data stream to make sure they are available. You can use the AOP_OUTLINES environment variable to control which fonts are included in PDF output.

The AFP to PostScript transform includes all outline fonts in the PostScript output when the AOP_EMBED_OUTLINES environment variable is set to **yes**, which is the default. When AOP_EMBED_OUTLINES is set to **no**, the transform rasterizes outline fonts to 300-dpi raster fonts and includes them in the output data stream.

When the transform includes outline fonts in the PostScript output, the output fidelity is improved; however, each typeface increases the size of the PostScript output file by approximately 175 KB. When the transform includes raster fonts in the output data stream, the output files are smaller than when outline fonts are included.

Because the transforms include all required fonts in the data streams or the output, there is typically no need for font mapping. However, the AOP_FONTMAP_TABLE environment variable lets you improve the output quality of the AFP to PDF transform by mapping raster fonts to outline fonts. Mapping raster fonts to outline fonts provides sharper characters when viewing PDFs on a monitor or printing on a high resolution printer. You can specify the AOP_FONTMAP_TABLE environment variable to point to the location of a file that contains a font-mapping table.

Limitations to font-mapping:
1. Double byte outline fonts are not supported.
2. Only Type 1 outline fonts are supported.

Font-mapping table format

The font-mapping table is a UNIX text file that can be stored anywhere in the z/OS file system. The font-mapping table has this syntax:

```
MAPFONT RFONT=raster charset, OFONT=outline charset, [VSIZE=point size,] [HSCALE=width %];
```

raster charset
> The name of the raster font character set resource name. If the input AFP print file specifies this character set name, the transform uses the outline font specified in the OFONT parameter. The raster font name is typically prefixed with the characters C0.
>
> You can use a wildcard (*) in the name of the raster font to map a typeface family of raster fonts to a corresponding typeface family of outline fonts.
>
> **Note:** Be sure you understand character set names and font mapping before you use the wildcard because the transform does not check for mapping consistency.
>
> **Examples:**
> 1. To map the raster AFP font "normal typeface Helvetica 11 point" to the corresponding outline AFP font "normal typeface Helvetica", specify:
>    ```
>    MAPFONT RFONT=C0H200A0, OFONT=CZH200;
>    ```
> 2. To map all raster Helvetica bold typeface to the corresponding outline Helvetica bold typeface:
>    ```
>    MAPFONT RFONT=C0H40*, OFONT=CZH400;
>    ```

outline charset
> The name of the outline font character set that you want to use in place of the font specified in RFONT. File names for outline font character set names typically begin with the letters CZ.
>
> **Example:** To map a raster font to the outline AFP font Helvetica Normal, specify OFONT=CZH200.

point size
> The size, in points, that the outline font is to be rendered at. Specify a number with up to three decimal points.

Default: The point size extracted from the font specified by the RFONT parameter.

Example: To indicate that the outline font is to be rendered at 17 and one half points, specify VSIZE=17.5.

width %
> How the transform scales the widths of the characters, specified as a percentage.

Default: 100 (normal width)

Example: To produce outline fonts at half their regular width, specify HSCALE=50. Similarly, to produce output that is twice the normal width, specify HSCALE=200.

For best font substitutions, match a raster font with an outline font of the same font family, and then use HSCALE and VSIZE as necessary to fine-tune any differences that might occur. For information about matching raster and outline fonts, see *IBM AFP Fonts: Font Summary for AFP Font Collection*.

Notes:
1. Code the VSIZE parameter when the RFONT parameter specifies a fixed metric AFP raster font.
2. If HSCALE is used incorrectly it can produce incorrect output. Too large a value could cause character overlap.
3. If you want the outline font characters to have the same appearance as the raster font characters, use the same font family for the RFONT and OFONT character sets. If you are using fonts from an installed AFP library, positions 3-6 of the character set name are identical for both the raster and outline font. For example, C0B20C** is the Bookmaster raster font character set name (first six characters), and CZB20C is the character set name for the Bookmaster outline font.
4. Code a MAPFONT statement for each font that you want to map. If duplicate RFONT statements exist, the first statement found is used.
5. Specify a comma between the parameters, and end each MAPFONT statement with a semicolon.
6. Start comments with a semicolon in column 1, for example:
   ```
   ;This is a comment
   ```

Sample font-mapping table

Figure 4 on page 124 shows an example of a font-mapping table. Also, see the font-mapping sample provided in **/usr/lpp/Printsrv/samples/aokfontmap.samp**.

```
;********************
;   Sample Mappings  *
;********************
; All are just normal typeface except for the BOLDFACE font.
;
; Map Specials Bookmaster 12 point normal raster to Bookmaster outline font.
 mapfont RFONT=C0B20CB0, OFONT=CZB20C;
;
; Map Latin1 Bookmaster 12 point normal raster to Bookmaster outline font.
 mapfont RFONT=C0B200B0, OFONT=CZB200;
;
; Map Latin1 Helvetica 12 point normal raster to Helvetica outline font.
 mapfont RFONT=C0H200B0, OFONT=CZH200;
;
; Map Cyrillic Greek Helvetica 12 point normal raster to Helvetica outline font.
 mapfont RFONT=C0H203B0, OFONT=CZH203;
;
; Map ITC BOUTROS MODERN ROKAA ARABIC 12 point normal raster to ITC BOUTROS MODERN ROKAA ARABIC outline
 mapfont RFONT=C0H204B0, OFONT=CZH204;
;
; Map IBM Logo 12 point normal raster to IBM Logo outline font
 mapfont RFONT=C0IBM0B0, OFONT=CZIBM0;
;
; Map Latin1 Times New Roman 12 point normal raster to Latin1 Times New Roman outline font.
 mapfont RFONT=C0N200B0, OFONT=CZN200;
 .
 .
 .
;**********************************
;   Sample Mappings with Wildcards  *
;**********************************
; BookMaster Special Normal
 mapfont  RFONT=C0B20C* OFONT=CZB20C;
; BookMaster Special Bold
 mapfont  RFONT=C0B40C* OFONT=CZB40C;
; BookMaster Special Italic
 mapfont  RFONT=C0B30C* OFONT=CZB30C;
; BookMaster Special Italic Bold
 mapfont  RFONT=C0B50C* OFONT=CZB50C;
; BookMaster Special Reverse
 mapfont  RFONT=C0B60C* OFONT=CZB60C;
; Courier Normal
 mapfont  RFONT=C04200* OFONT=CZ4200;
; Courier Italic
 mapfont  RFONT=C04300* OFONT=CZ4300;
; Gothic Text Normal
 mapfont  RFONT=C06200* OFONT=CZ6200;
; Helvetica Normal
 mapfont  RFONT=C0H200* OFONT=CZH200;
; Helvetica Bold
 mapfont  RFONT=C0H400* OFONT=CZH400;
; Helvetica Italic
 mapfont  RFONT=C0H300* OFONT=CZH300;
; Helvetica Italic Bold
 mapfont  RFONT=C0H500* OFONT=CZH500;
; Latin1 BookMaster Normal
 mapfont  RFONT=C0B200* OFONT=CZB200;
; Latin1 BookMaster Italic
 mapfont  RFONT=C0B300* OFONT=CZB300;
 .
 .
 .
```

Figure 4. Sample font-mapping table

Creating a font-mapping table

To create a font-mapping table:

1. Edit the font-mapping entries in the sample font-mapping table provided in **/usr/lpp/Printsrv/samples/aokfontmap.samp**.

   Tip: Before editing, copy the sample font-mapping table to another directory.

   _____

2. In the font-mapping table, specify as many MAPFONT statements as there are raster fonts you want to map to outline fonts. See "Font-mapping table format" on page 122 for the format of the MAPFONT statement.

   _____

3. Set the file permissions so that the font-mapping table is readable by everyone.

4. Set the AOP_FONTMAP_TABLE environment variable in the Infoprint Server transform configuration file (aopxfd.conf) to the file path for the font-mapping table.

   Note: Set AOP_FONTMAP_TABLE for each transform class that uses font mapping.

   _____

5. Restart the Infoprint Server Transform Manager. For example, use the AOPSTOP and AOPSTART JCL procedures to stop and restart the Transform Manager:

   ```
   START AOPSTOP,OPTIONS='-d xfd'
   START AOPSTART
   ```

   _____

6. Check for error messages in the transform's **stderr** file or in the Infoprint Server common message log. If you find any error messages, fix the errors and restart the Transform Manager. For more information about how to find the transform message logs, see "Finding the transform stderr file" on page 152.

   _____

Using TrueType, OpenType, and WoldType fonts

TrueType, OpenType, and WorldType fonts are stored in UNIX files (HFS or zFS files). These fonts can reside in the printer, inline in the print data set, in user path directories, or in system font path directories. TrueType, OpenType, and WorldType fonts are referenced in the print data set by using the Map Data Resource (MDR) structured field.

To use TrueType, OpenType, and WorldType fonts with a transform, you or the system administrator must perform these steps:

1. Install IBM's WorldType Fonts for AFP Print Servers optional feature of Infoprint Fonts for Multiplatforms (Program Number 5648-E77) or a TrueType, OpenType, and WorldType font package from a company such as Agfa, Monotype, or Linotype. See *IBM Infoprint Fonts: Font Summary* for more information about Infoprint Fonts for Multiplatforms.

2. Use a resource installer program, such as the Font Installer for AFP Systems (an optional feature of Infoprint Fonts for Multiplatforms) or the InfoPrint AFP Resource Installer (Program Number 5639-EE2), to install and build resource access tables (RATs) for the TrueType, OpenType, and WorldType fonts from

step 1 on page 125 and install the fonts in path directories (linked fonts are not supported). Be sure the resource installer is set up with the correct permissions to access the path directories.

Attention: The transform can successfully process RATs that are created with either the Font Installer for AFP Systems or the InfoPrint AFP Resource Installer. However, a RAT created with the Font Installer for AFP Systems is not compatible with a RAT created with the AFP Resource Installer. Though the AFP Resource Installer can process a RAT created with the Font Installer for AFP Systems and migrate it into the new format, the opposite is not true. When the Font Installer for AFP Systems processes a RAT created with the AFP Resource Installer, it might lose the RAT information or an error might occur. Therefore, IBM recommends that you do not use the Font Installer for AFP Systems after you have created a RAT with the AFP Resource Installer.

3. Identify the path directories where the fonts are found:
   - Identify the resource font path directories in the transform configuration file with the AOP_FONTPATH environment variable.
   - Identify user path directories with the USERPATH parameter on the OUTPUT JCL statement. See the USERPATH parameter on page 56.

4. Use z/OS UNIX System Services to set access permissions to the directories and files in the user path and font path directories. The transform must have read permissions set for each path directory and file it is accessing. If the permissions for each directory or file are not set correctly, the transform cannot access the path directories. For more information about z/OS UNIX System Services, see *z/OS UNIX System Services Command Reference*.

For more information about TrueType and OpenType fonts, see *Using OpenType Fonts in an AFP System*.

Paper names

Table 17 on page 127 summarizes the paper names and sizes that all the transforms support. You can specify these paper names in the AOP_PAPER environment variable in the transform configuration file.

Note: If the AOP_PAPER environment variable is set to AUTO, the transform uses the page size in the Page Descriptor (PGD) structured field.

Most values in the table are expressed in 300 dots per inch (dpi). (To convert values to inches, divide the values by 300.) The origin of the X (width) and Y (height) coordinates is the top, left corner of the page.

The columns in the table are:

Paper name
> The paper name, which you specify in the AOP_PAPER environment variable.

Paper size (in or mm)
> The size in inches or millimeters of the entire media. The transforms use this value as the logical page to determine the area of the page that can be toned or printed.

Paper size (300 dpi)
> The size in 300 dots per inch (dpi) of the entire media. The transforms use this value as the logical page to determine the area of the page that can be toned or printed.

Printable area origin (dpi)
>The X (width) and Y (height) coordinates of the top left corner of the printable area in relation to the physical medium.

Printable area size (dpi)
>The area of the page that can be toned or printed.

Logical page origin (dpi)
>The X (width) and Y (height) coordinates of the top left corner of the logical page in relation to the physical medium.

Logical page size (300 dpi)
>The area of the page that can be addressed (positioned by the printer). The AFP to PCL transform uses this value.

PCL paper type ID
>The paper type identifier assigned by PCL and used to select this paper name.

Table 17. Paper names and dimensions

Paper name	Paper size (in or mm)	Paper size (300 dpi)	Printable area origin (300 dpi)	Printable area size (300 dpi)	Logical page origin (300 dpi)	Logical page size (300 dpi)	PCL paper type ID
a3	292.25 x 413.25 mm	3507,4960	50,50	3407,4860	71,0	3365,4960	27
a4	210 x 297 mm	2480,3507	50,50	2380,3407	71,0	2338,3507	26
a5	148.3 x 210 mm	1748,2480	50,50	1648,2380	71,0	1606,2480	25
b4	250 x 353 mm	3035,4299	50,50	2935,4199	71,0	2893,4299	46
b5	176 x 250 mm	2149,3035	50,50	2049,2935	71,0	2007,3035	45
c5	162 x 229 mm (6.48 x 9.16 in.)	1913,2704	50,50	1813,2604	71,0	1771,2704	91
com10	4.125 x 9.5 in. (104.8 x 241.3 mm)	1237,2850	50,50	1137,2750	75,0	1087,2850	81
dl	110 x 220 mm (4.4 x 8.8 in)	1299,2598	50,50	1199,2498	71,0	1157,2598	90
executive	7.25 x 10.5 in (185 x 267 mm)	2175,3150	50,50	2075,3050	75,0	2025,3150	1
ledger	11 x 17 in (279 x 432 mm)	3300,1500	50,50	3200,5000	75,0	3150,5100	6
legal	8.5 x 14.0 in (216 x 356 mm)	2550,4200	50,50	2450,4100	75,0	2400,4200	3
letter	8.5 x 11.0 in (216 x 279 mm)	2550,3300	50,50	2450,3200	75,0	2400,3300	2
monarch	3.87 x 7.5 in (98.4 x 190.5 mm)	1162,2250	50,50	1062,2150	75,0	1012,2250	80

Tips:

1. When you customize the AFP to PCL transform, set the AOP_EDGETOEDGE
   environment variable to YES if the printer is configured for edge-to-edge
   printing. However, if the printer does not support edge-to-edge printing,
   documents created for edge-to-edge printing have the outside 50 pels,
   approximately 4 millimeters, of output cut off. Edge-to-edge printing is only
   valid when transforming to PCL.

2. If the job submitter specifies logical-page dimensions that are different from the
   paper dimensions, the transforms use the user-specified logical-page
   dimensions. Therefore, the transforms can create output that attempts to print
   outside of the paper dimensions. In this case, loss of output data and
   unpredictable formatting results can occur. Job submitters can specify the size
   of the logical page in the AFP input data stream and in a page definition (for
   line data and XML input).

Chapter 4. Administering transforms

This chapter describes how Infoprint Server administrators can set up printer definitions in the Infoprint Server Printer Inventory so that Infoprint Server automatically transforms documents from AFP format to other data formats before sending the documents to printers or email destinations.

Do the tasks listed in Table 18. Required tasks are required by all installations that want to use the transform. Optional tasks are required only if the listed condition applies to your installation.

Table 18. Tasks for administering transforms

Task	Condition	See page
Requesting the AFP to PCL transform	Required	129
Requesting the AFP to PDF transform	Required	133
Requesting the AFP to PostScript transform	Required	142
Specifying AFP resources and resource libraries	Optional: To specify AFP attributes	146

Requesting the AFP to PCL transform

This section describes how to set up printer definitions for PCL printers so that Infoprint Server automatically calls the AFP to PCL transform.

AFP to PCL transform filter

In the printer definitions for PCL printers, you can specify the AFP to PCL transform filter and associate it with the line-data, MO:DCA-P data formats, and XML data formats. (A filter is a program that modifies the input data before it is sent to the printer or email destination.) When you associate the transform filter with these data formats, Infoprint Server automatically calls the AFP to PCL transform when it processes documents with these formats.

Tip: If you run IP PrintWay basic mode, you must also select the resubmit for filtering function in the printer definition. IP PrintWay basic mode calls transform filters only when you select the IP PrintWay resubmit for filtering function.

Table 19 shows the filter name and filter options that you can specify in the **Filter** field of a printer definition.

Table 19. AFP to PCL filter name and filter options

Field name (PIDU attribute)	Filter name	Filter options
Filter (filters)	afpxpcl.dll	[%filter-options] [-c *transformclass*] [-i *inputcodepage*] [-F *tracefile*] [-T *traceoptions*]

The filter options mean:

%filter-options

Causes options that are specified in the **filter-options** job attribute to be passed to the transform.

You can type the **%filter-options** option in any position relative to the other filter options. If you specify filter options to the right of **%filter-options**, those options override the same options specified in the **filter-options** job attribute.

-c *transformclass*

Specifies the name of a transform class that is defined in the transform configuration file, **aopxfd.conf**. The name is case-sensitive. The job submitter can also specify this option in the **filter-options** job attribute.

-i *inputcodepage*

This option applies only to the **Line data** data format. If you specify this option for any other data formats, it is ignored.

This option identifies the code page to which line data is converted before it is transformed. Specify a code page that corresponds to the coded fonts that the transform uses to transform the line data. (Coded fonts can be specified in the page definition, in the **chars** job attribute or CHARS JCL parameter, and in the **Character sets** field of the printer definition.)

To transform line data that is already encoded in the code page that corresponds to the coded fonts, do *not* specify this option. When this option is not specified, line data is not converted from one code page to another before it is transformed. For example, to transform line-data documents that specify coded fonts (for example, in the CHARS JCL parameter) and currently print correctly on an AFP printer, do *not* specify this option.

You *must* specify this option to correctly transform documents that are encoded in code pages that do not correspond to the code page for the coded fonts. This is most likely to occur when the Print Interface LPD receives print requests with a print command of **r** in the LPD control file. Print command **r** indicates that the file contains ANSI carriage control characters (FORTRAN carriage control) and is, therefore, line data.

To determine the code page to specify, first determine the AFP code page for each character set. For AFP code pages, see *IBM AFP Fonts: Font Summary for AFP Font Collection*. Then determine the name of the corresponding code page that IBM provides and that the iconv utility supports. For valid code page names, see *z/OS XL C/C++ Programming Guide*.

The AFP code page and the name of the code pages that iconv uses are different. For example, if the coded fonts in Table 9 on page 22 are specified (for example, in the CHARS JCL parameter), specify the IBM-500 code page in the **-i** option: -i IBM-500.

When you specify this option, also make sure that the code page specified in the **Document code page** field of the printer definition identifies the code page in which input documents are encoded. (See the ISPF help for information about the **Document code page** field.) A job submitter can also specify a document code page for a specific print job in the **document-codepage** job attribute.

> **Tip:** When you specify this option, you might need to create a separate printer definition for use only by those applications that require the **-i** option and code page conversion.

-F *tracefile* **-T** *traceoptions*

These options trace the transforms. Your IBM service representative might ask you to specify these options to help IBM diagnose problems. These options can also be specified in the **filter-options** job attribute. For an explanation of these options, see "Finding the transform stderr file" on page 152.

Steps for editing printer definitions for the AFP to PCL transform

To edit printer definitions, you can use either Infoprint Server ISPF panels or the Printer Inventory Definition Utility (PIDU) program. This section describes how to use the ISPF panels. For information about the PIDU program, see "Using the PIDU program to manage the Printer Inventory" in *z/OS Infoprint Server Operation and Administration*.

Before you begin: To edit the Printer Inventory, you must have UPDATE access to the AOP.ADMINISTRATOR profile in the RACF PRINTSRV class.

To edit printer definitions:

1. (Optional) Create a Processing component. If you need to specify the AFP to PCL transform in a large number of printer definitions, a component can simplify administration. If you need to change your transform filter in the future, you can make the change in your Processing component.

   _____

2. On the Processing panel of either the printer definition or the component, select the **Line data**, **MO:DCA-P** , and **XML** data formats.

   _____

3. Next to these data formats, specify the **afpxpcl.dll** filter and filter options in the **Filter** field. Type the absolute path name if the filter is not in a directory named in the LIBPATH environment variable. For filter options, see "AFP to PCL transform filter" on page 129.

   _____

4. If you run IP PrintWay basic mode, select the **Resubmit for filtering** field. IP PrintWay extended mode ignores this field because it calls transforms directly. For more information about this field, see "Resubmitting documents to Print Interface for filtering" in *z/OS Infoprint Server Operation and Administration*.

   _____

5. (Optional) In the **Fail on error** field, select whether you want the transform to fail when a transform warning or data stream error occurs during the transform. When a transform fails, the transform does not produce an output document.

   The Infoprint Server **fail-on-transform-error** job attribute overrides this field.

   If you do not select an option in this field and **fail-on-transform-error** is not specified, the AOP_FAIL_ON_ERROR environment variable determines when the transform fails. Otherwise, the default is to fail on error.

   _____

6. (Optional) In the **Trailer error page** field, select the type of messages you want the transform to write on a page at the end of the AFP output (called the **trailer error page**).

   The Infoprint Server **trailer-transform-error-page** job attribute overrides this value.

   If you do not select an option in this field, the AOP_TRAILER_ERROR_PAGE environment variable determines the type of messages the transform writes. Otherwise, the default action is to place informational, warning, or error messages on the trailer page as part of the output document.

   _____

7. (Optional) If you created a Processing component, specify the name of the Processing component in the **Component name** field on the IP PrintWay printer definition panel. Do this in all printer definitions to which the transform applies.

   After you include a Processing component, check the Processing panel in the printer definition to make sure the transform is specified correctly. You might need to remove (space over) any filters that are specified on the Processing panel of the printer definition itself. If any filters are specified in the printer definition, the filters specified in the component are not used.

   Tip: If you remove the **aopfiltr.so** or **lpd_compat.so** filter for the **Text** data format from the **Filter** field of the printer definition, be sure to specify the same filter in the Processing component. (Print Interface uses these filters.)

   _____

Example -- ISPF Processing panel for the AFP to PCL transform

Figure 5 on page 133 shows the ISPF panel that you use to specify the AFP to PCL transform in a printer definition. Only a portion of the Processing panel is shown. This example uses the afpxpcl_eu transform class from the aopxfd.conf file.

```
┌─────────────────────────────────────────────────────────────────────────┐
│  Edit                                Processing                          │
│  Command ==> _____   │
│                                                                          │
│  Printer definition name . pcl1_____                               │
│  :                                                                       │
│  :                                                                       │
│                                                                          │
│  Supported data formats and associated filters:                         │
│  Data format:  Filter:                                                   │
│                                                                          │
│  / Line data  afpxpcl.dll -c eu %filter-options                (extend)  │
│  / MO:DCA-P   afpxpcl.dll -c eu %filter-options_____ (extend)  │
│  _ PostScript _____ (extend)  │
│  / Text       aopfiltr.so_____ (extend)  │
│  / PCL        _____ (extend)  │
│  _ PDF        _____ (extend)  │
│  _ SAP        _____ (extend)  │
│  / XML        afpxpcl.dll -c eu %filter-options_____ (extend)  │
│  _ TIFF       _____ (extend)  │
│  _ JPEG       _____ (extend)  │
│  _ Other      _____ (extend)  │
│                                                                          │
│  / Resubmit for filtering                                                │
│                                                                          │
│  Transforms:                                                             │
│     Fail on error . . . .  2  1. No  2. Error  3. Warning                │
│     Trailer error page. .  1  1. No  2. Error  3. Warning                │
│  :                                                                       │
│  :                                                                       │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 5. Example of the ISPF Processing panel for the AFP to PCL transform

Explanation of fields:

- The **Line data**, **MO:DCA-P**, and **XML** data formats are selected because the **afpxpcl.dll** filter can transform these data formats to PCL format. The transform options are:
  - The **-c** filter option causes the transform to use the **eu** transform class, which is defined in the transform configuration file.
  - The **%filter-options** filter option lets the job submitter override the transform class because it is specified to the right of the **-c** filter option.
- The **Text** and **PCL** data formats are selected because the printer can accept these data formats without any transform. The **aopfiltr.so** filter is specified for **Text** data because Print Interface uses this filter.
- The **Resubmit for filtering** field is selected so that IP PrintWay basic mode calls Print Interface to transform documents submitted from batch applications.
- In the **Fail on error** field, option **Error** is selected. If a data stream error occurs during the transform, the transform fails and does not create an output document.
- In the **Trailer error page** field, option **No** is selected. The transform does not write any warning or error messages to a trailer error page.

Requesting the AFP to PDF transform

This section describes how to set up printer definitions for email destinations so that Infoprint Server automatically calls the AFP to PDF transform.

AFP to PDF transform filter

In the printer definitions for PDF printers or email destinations, you can specify the AFP to PDF transform filter and associate it with the line-data, MO:DCA-P, and XML data formats. (A filter is a program that modifies the input data before it is sent to the printer or email destination.) When you associate the transform filter

with these data formats, Infoprint Server automatically calls the AFP to PDF transform when it processes documents with these data formats.

Tip: If you run IP PrintWay basic mode, you must also select the resubmit for filtering function in the printer definition. IP PrintWay basic mode calls transform filters only when you select the IP PrintWay resubmit for filtering function.

Table 20 shows the filter name and filter options that you can specify in the **Filter** field of a printer definition.

Table 20. AFP to PDF filter name and filter options

Field name (PIDU attribute)	Filter name	Filter options
Filter (filters)	afpxpdf.dll	[%filter-options] [-c *transformclass*] [-i *inputcodepage*] [-F *tracefile*] [-T *traceoptions*]

The filter options mean:

%filter-options

Causes options that are specified in the **filter-options** job attribute to be passed to the transform.

You can type the **%filter-options** option in any position relative to the other filter options. If you specify filter options to the right of **%filter-options**, those options override the same options specified in the **filter-options** job attribute.

-c *transformclass*

Specifies the name of a transform class that is defined in the transform configuration file, **aopxfd.conf**. The name is case-sensitive. The job submitter can also specify this option in the **filter-options** job attribute.

-i *inputcodepage*

This option applies only to the **Line data** data format. If you specify this option for any other data formats, it is ignored.

This option identifies the code page to which line data is converted before it is transformed. Specify a code page that corresponds to the coded fonts that the transform uses to transform the line data. (Coded fonts can be specified in the page definition, in the **chars** job attribute or CHARS JCL parameter, and in the **Character sets** field of the printer definition.)

To transform line data that is already encoded in the code page that corresponds to the coded fonts, do *not* specify this option. When this option is not specified, line data is not converted from one code page to another before it is transformed. For example, to transform line-data documents that specify coded fonts (for example, in the CHARS JCL parameter) and currently print correctly on an AFP printer, do *not* specify this option.

You *must* specify this option to correctly transform documents that are encoded in code pages that do not correspond to the code page for the coded fonts. This is most likely to occur when the Print Interface LPD receives print requests with a print command of **r** in the LPD control file. Print command **r** indicates that the file contains ANSI carriage control characters (FORTRAN carriage control) and is, therefore, line data.

To determine the code page to specify, first determine the AFP code page for each character set. For AFP code pages, see *IBM AFP Fonts: Font Summary for AFP Font Collection*. Then determine the name of the corresponding code page that IBM provides and that the iconv utility supports. For valid code page names, see *z/OS XL C/C++ Programming Guide*.

The AFP code page and the name of the code pages that iconv uses are different. For example, if the coded fonts in Table 9 on page 22 are specified (for example, in the CHARS JCL parameter), specify the IBM-500 code page in the **-i** option: `-i IBM-500`.

When you specify this option, also make sure that the code page specified in the **Document code page** field of the printer definition identifies the code page in which input documents are encoded. (See the ISPF help for information about the **Document code page** field.) A job submitter can also specify a document code page for a specific print job in the **document-codepage** job attribute.

Tip: When you specify this option, you might need to create a separate printer definition for use only by those applications that require the **-i** option and code page conversion.

-F *tracefile* **-T** *traceoptions*
These options trace the transforms. Your IBM service representative might ask you to specify these options to help IBM diagnose problems. These options can also be specified in the **filter-options** job attribute. For an explanation of these options, see "Finding the transform stderr file" on page 152.

PDF encryption options

In the printer definition, you can specify options that the AFP to PDF transform uses when it encrypts PDF documents with passwords. The transform encrypts PDF documents with passwords when you specify a user identifier or owner identifier in the printer definition or when the job submitter specifies one of these identifiers in job attributes.

Tip: If no user identifier or owner identifier is specified, the transform does not use any of the other encryption options in the printer definition.

Values specified in job attributes override the same values in the printer definition. For example, the **pdf-user-identifier** job attribute overrides the **User identifier** field in the printer definition.

Table 21 on page 136 describes the printer definition fields (and the corresponding PIDU attributes) that let you specify encryption options. For a description of the PIDU attributes, see "Printer attributes for encrypting PDF documents" on page 137.

Table 21. PDF encryption fields in the printer definition

Field name (PIDU attribute)	Description	Default

Encryption level (pdf-encryption-level)	The level of encryption used to encrypt PDF documents. A high level of encryption provides enhanced security and lets you restrict more actions on PDF documents. However, some users might not be able to open PDF documents that use a high level of encryption. You can select:
	
	Low (40-bit key)
	    A low level of encryption (a 40-bit encryption key) is used. Select this value if you send PDF documents in an email to countries that do not use 128-bit encryption, or for users with Adobe Reader 3.0 - 4.x.
	
	High (128-bit key)
	    A high level of encryption (a 128-bit encryption key) is used. Select this value for sensitive PDF documents.
		High (128-bit key).

Owner identifier (pdf-owner-identifier)	The identifier of the owner of an encrypted PDF document. The owner identifier is associated with a password that is stored in a separate database. An owner password is required to restrict actions in the **Protected actions** field. You can enter from 1 - 256 characters, with any combination of letters, numbers, blanks, and special characters that the Password exit allows. This text string might be case-sensitive, depending on the Password exit. **Tip:** The user and owner identifiers should be different because the user and owner passwords must be different.	None.

Protected actions (pdf-protect)	The actions that are restricted in encrypted PDF documents:
	
	Copy Users cannot:
	    • Copy or extract content to another document
	    • Extract content for accessibility
	
	Print Users cannot:
	    • Print at low resolution (150 dpi)
	    • Print at high resolution
	
	Update Users cannot:
	    • Change the document
	    • Assemble (insert, rotate, and delete pages)
	    • Add comments
	    • Fill in form fields or sign
	    • Create template pages
		No actions are restricted.

User identifier (pdf-user-identifier)	The identifier of the user of an encrypted PDF document. The user identifier is associated with a password that is stored in a separate database. The user password is required to open encrypted PDF documents. You can enter from 1 - 256 characters, with any combination of letters, numbers, blanks, and special characters that the Password exit allows. This text string might be case-sensitive, depending on the Password exit. **Tip:** The user and owner identifiers should be different because the user and owner passwords must be different.	None. Anyone can open the PDF documents without a password.

Printer attributes for encrypting PDF documents

This section describes the printer attributes related to encryption that you can specify in the **processing** and **printer** object classes when you use the Printer Inventory Definition Utility (PIDU) to create or edit printer definitions. For information about PIDU and the other Infoprint Server printer attributes you can specify, see "Using the PIDU program to manage the Printer Inventory" in *z/OS Infoprint Server Operation and Administration*.

pdf-encryption-level

This **single-valued** attribute specifies the level of encryption used to encrypt PDF documents. A high level of encryption provides enhanced security. However, some users might not be able to open PDF documents that use a high level of encryption.

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

bits40 A low level of encryption (a 40-bit encryption key) is used. Select this value if you send PDF documents in an email to countries that do not use 128-bit encryption, or for users with Adobe Reader 3.0 - 4.x.

bits128
A high level of encryption (a 128-bit encryption key) is used. Select this value for sensitive PDF documents.

Default value: bits128

pdf-owner-identifier

This **single-valued** attribute specifies the identifier of the owner of an encrypted PDF document. The owner identifier is associated with a password that is stored in a separate database. An owner password is required to restrict actions with the **pdf-protect** attribute.

Allowed values: You can enter a text string of 1 - 256 characters. You can enter any combination of letters, numbers, blanks, and special characters that the Password exit allows. This text string might be case-sensitive, depending on the Password exit. If the text string you specify contains blanks or special characters (such as @ $ & ( ) > < | ' " #), enclose the text string in single or double quotation marks. For example:

```
pdf-owner-identifier='Nurse-Lee@hospital.com'
```

If the string contains double quotation marks, enclose the string in single quotation marks.

Default value: None.

Usage guidelines:

- The transform encrypts a PDF document when you specify a user identifier, an owner identifier, or both. Encrypting a PDF document protects it from unauthorized access.
- The user and owner identifiers should be different because the user and owner passwords must be different.

pdf-protect

This **multi-valued** attribute specifies one or more actions that users cannot do on encrypted PDF documents.

Allowed values: You can enter one or more fixed values to restrict actions (see Table 22). If you specify more than one value, separate the values with spaces and enclose the list of values in braces {}. For example:

```
-j "pdf-protect=all"
-j "pdf-protect={copy update}"
```

Table 22. pdf-protect values

Value:	Actions users cannot do:
all	• All actions (copy, print, update)
copy	• Copy or extract content to another document • Extract content for accessibility
print	• Print at low resolution (150 dpi) • Print at high resolution
update	• Change the document • Assemble the document (insert, delete, rotate pages) • Add comments • Fill in form fields or sign • Create template pages

Default value: None.

pdf-user-identifier

This **single-valued** attribute specifies the identifier of the user of an encrypted PDF document. The user identifier is associated with a password that is stored in a separate database. The user enters the user password when opening the encrypted PDF document.

Allowed values: You can enter a text string of 1 - 256 characters. You can enter any combination of letters, numbers, blanks, and special characters that the Password exit allows. This text string might be case-sensitive, depending on the Password exit. If the text string you specify contains blanks or special characters (such as **@ $ & ( ) > < | ' " #**), enclose the text string in single or double quotation marks. For example:

```
pdf-user-identifier='Dr-Smith@hospital.com'
```

If the string contains double quotation marks, enclose the string in single quotation marks.

Default value: None.

Usage guidelines:

• The transform encrypts a PDF document when you specify a user identifier, an owner identifier, or both. Encrypting a PDF document protects it from unauthorized access.

• The user and owner identifiers should be different because the user and owner passwords must be different.

Steps for editing printer definitions for the AFP to PDF transform

To edit printer definitions, you can use either Infoprint Server ISPF panels or the Printer Inventory Definition Utility (PIDU) program. This section describes how to

use the ISPF panels. For information about the PIDU program, see "Using the PIDU program to manage the Printer Inventory" in *z/OS Infoprint Server Operation and Administration*.

Before you begin: To edit the Printer Inventory, you must have UPDATE access to the AOP.ADMINISTRATOR profile in the RACF PRINTSRV class.

To edit printer defintions:

1. (Optional) Create a Processing component. If you need to specify the AFP to PDF transform in a large number of printer definitions, a component can simplify administration. If you need to change your transform filter in the future, you can make the change in your Processing component.

   _____

2. On the Processing panel of either the printer definition or the component, select the **Line data**, **MO:DCA-P**, and **XML** data formats.

   _____

3. Next to these data formats, specify the **afpxpdf.dll** filter and filter options in the **Filter** field. Type the absolute path name if the filter is not in a directory named in the LIBPATH environment variable. For filter options, see "AFP to PDF transform filter" on page 133.

   _____

4. If you run IP PrintWay basic mode, select the **Resubmit for filtering** field. IP PrintWay extended mode ignores this field because it calls transforms directly. For more information about this field, see "Resubmitting documents to Print Interface for filtering" in *z/OS Infoprint Server Operation and Administration*.

   _____

5. (Optional) On the Processing panel, specify any of these fields used for encrypting PDF documents:
   - **User identifier**
   - **Owner identifier**
   - **Encryption level**
   - **Protected actions**

   For information about these fields, see "PDF encryption options" on page 135.

   _____

6. (Optional) In the **Fail on error** field, select whether you want the transform to fail when a transform warning or data stream error occurs during the transform. When a transform fails, the transform does not produce an output document.

   The Infoprint Server **fail-on-transform-error** job attribute overrides this field.

   If you do not select an option in this field and **fail-on-transform-error** is not specified, the AOP_FAIL_ON_ERROR environment variable determines when the transform fails. Otherwise, the default is to fail on error.

   _____

7. (Optional) In the **Trailer error page** field, select the type of messages you want the transform to write on a page at the end of the AFP output (called the **trailer error page**).

The Infoprint Server **trailer-transform-error-page** job attribute overrides this value.

If you do not select an option in this field, the AOP_TRAILER_ERROR_PAGE environment variable determines the type of messages the transform writes. Otherwise, the default action is to place informational, warning, or error messages on the trailer page as part of the output document.

_____

8. (Optional) If you created a Processing component, specify the name of the Processing component in the **Component name** field on the IP PrintWay printer definition panel. Do this in all printer definitions to which the transform applies.

After you include a Processing component, check the Processing panel in the printer definition to make sure the transform is specified correctly. You might need to remove (space over) any filters that are specified on the Processing panel of the printer definition itself. If any filters are specified in the printer definition, the filters specified in the component are not used.

Tip: If you remove the **aopfiltr.so** or **lpd_compat.so** filter for the **Text** data format from the **Filter** field of the printer definition, be sure to specify the same filter in the Processing component. (Print Interface uses these filters.)

_____

Example -- ISPF Processing panel for the AFP to PDF transform

Figure 6 on page 141 shows the ISPF panel that you use to specify the AFP to PDF transform in a printer definition. Only a portion of the Processing panel is shown. This example uses the afpxpdf_encrypt transform class from the aopxfd.conf file.

```
 Edit                                 Processing
 Command ==> _____

 Printer definition name . mail_____
 :
 :

 Supported data formats and associated filters:
 Data format:  Filter:

 / Line data  afpxpdf.dll -c encrypt %filter-options_____      (extend)
 / MO:DCA-P   afpxpdf.dll -c encrypt %filter-options_____      (extend)
 _ PostScript _____      (extend)
 / Text       aopfiltr.so_____   (extend)
 _ PCL        _____      (extend)
 / PDF        _____      (extend)
 _ SAP        _____      (extend)
 / XML        afpxpdf.dll -c encrypt %filter-options_____      (extend)
 _ TIFF       _____      (extend)
 _ JPEG       _____      (extend)
 _ Other      _____      (extend)

 / Resubmit for filtering

 Transforms:
    Fail on error . . . .  2   1. No  2. Error  3. Warning
    Trailer error page. .  1   1. No  2. Error  3. Warning
 :
 AFP to PDF Transform Encryption:
    User identifier . Dr-Smith@hospital.com_____         (extend)
    Owner identifier. Nurse-Lee@hospital.com_____         (extend)
    Encryption level  2  1. Low (40-bit key) 2. High (128-bit key)
    Protected actions:
       Restrict print. . . 2  1. Yes  2. No
       Restrict copy . . . 1  1. Yes  2. No
       Restrict update . . 1  1. Yes  2. No
 :
 :
```

Figure 6. Example of the ISPF Processing panel for the AFP to PDF transform

Explanation of fields:

- The **Line data**, **MO:DCA-P**, and **XML** data formats are selected because the **afpxpdf.dll** filter can transform these data formats to PDF format. The transform options are:
  - The **-c** filter option causes the transform to use the **encrypt** transform class, which is defined in the transform configuration file.
  - The **%filter-options** filter option lets the job submitter override the transform class because it is specified to the right of the **-c** filter option.
- The **Text** and **PDF** data formats are selected because the email destination can accept these data formats. The **aopfiltr.so** filter is specified for **Text** data because Print Interface uses this filter.
- The **Resubmit for filtering** field is selected so that IP PrintWay basic mode calls Print Interface to transform documents submitted from batch applications.
- In the **Fail on error** field, option **Error** is selected. If a data stream error occurs during the transform, the transform fails and does not create an output document.
- In the **Trailer error page** field, option **No** is selected. The transform does not write any warning or error messages to a trailer error page.
- The **User identifier** and **Owner identifier** fields specify user and owner identifiers for the PDF encryption function.
- The **Encryption level** field selects the high encryption option.

- The **Protected actions** field restricts all actions except for printing in encrypted PDF documents.

Requesting the AFP to PostScript transform

This section describes how to set up printer definitions for PostScript printers so that Infoprint Server automatically calls the AFP to PostScript transform.

AFP to PostScript transform filter

In the printer definitions for PostScript printers, you can specify the AFP to PostScript transform filter and associate it with the line-data, MO:DCA-P, and XML data formats. (A filter is a program that modifies the input data before it is sent to the printer or email destination.) When you associate the transform filter with these data formats, Infoprint Server automatically calls the AFP to PostScript transform when it processes documents with these data formats.

Tip: If you run IP PrintWay basic mode, you must also select the resubmit for filtering function in the printer definition. IP PrintWay basic mode calls transform filters only when you select the IP PrintWay resubmit for filtering function.

Table 23 shows the filter name and filter options that you can specify in the **Filter** field of a printer definition.

Table 23. AFP to PostScript filter name and filter options

Field name (PIDU attribute)	Filter name	Filter options
Filter (filters)	afpxps.dll	[%filter-options] [-c *transformclass*] [-i *inputcodepage*] [-F *tracefile*] [-T *traceoptions*]

The filter options mean:

%filter-options
Causes options that are specified in the **filter-options** job attribute to be passed to the transform.

You can type the **%filter-options** option in any position relative to the other filter options. If you specify filter options to the right of **%filter-options**, those options override the same options specified in the **filter-options** job attribute.

-c *transformclass*
Specifies the name of a transform class that is defined in the transform configuration file, **aopxfd.conf**. The name is case-sensitive. The job submitter can also specify this option in the **filter-options** job attribute.

-i *inputcodepage*
This option applies only to the **Line data** data format. If you specify this option for any other data formats, it is ignored.

This option identifies the code page to which line data is converted before it is transformed. Specify a code page that corresponds to the coded fonts that the transform uses to transform the line data. (Coded fonts can be specified in the page definition, in the **chars** job attribute or CHARS JCL parameter, and in the **Character sets** field of the printer definition.)

To transform line data that is already encoded in the code page that corresponds to the coded fonts, do *not* specify this option. When this option is not specified, line data is not converted from one code page to another before it is transformed. For example, to transform line-data documents that specify coded fonts (for example, in the CHARS JCL parameter) and currently print correctly on an AFP printer, do *not* specify this option.

You *must* specify this option to correctly transform documents that are encoded in code pages that do not correspond to the code page for the coded fonts. This is most likely to occur when the Print Interface LPD receives print requests with a print command of **r** in the LPD control file. Print command **r** indicates that the file contains ANSI carriage control characters (FORTRAN carriage control) and is, therefore, line data.

To determine the code page to specify, first determine the AFP code page for each character set. For AFP code pages, see *IBM AFP Fonts: Font Summary for AFP Font Collection*. Then determine the name of the corresponding code page that IBM provides and that the iconv utility supports. For valid code page names, see *z/OS XL C/C++ Programming Guide*.

The AFP code page and the name of the code pages that iconv uses are different. For example, if the coded fonts in Table 9 on page 22 are specified (for example, in the CHARS JCL parameter), specify the IBM-500 code page in the **-i** option: `-i IBM-500`.

When you specify this option, also make sure that the code page specified in the **Document code page** field of the printer definition identifies the code page in which input documents are encoded. (See the ISPF help for information about the **Document code page** field.) A job submitter can also specify a document code page for a specific print job in the **document-codepage** job attribute.

> **Tip:** When you specify this option, you might need to create a separate printer definition for use only by those applications that require the **-i** option and code page conversion.

-F *tracefile* **-T** *traceoptions*
These options trace the transforms. Your IBM service representative might ask you to specify these options to help IBM diagnose problems. These options can also be specified in the **filter-options** job attribute. For an explanation of these options, see "Finding the transform stderr file" on page 152.

Steps for editing printer definitions for the AFP to PostScript transform

To edit printer definitions, you can use either Infoprint Server ISPF panels or the Printer Inventory Definition Utility (PIDU) program. This section describes how to use the ISPF panels. For information about the PIDU program, see "Using the PIDU program to manage the Printer Inventory" in *z/OS Infoprint Server Operation and Administration*.

Before you begin: To edit the Printer Inventory, you must have UPDATE access to the AOP.ADMINISTRATOR profile in the RACF PRINTSRV class.

To edit printer defintions:

1. (Optional) Create a Processing component. If you need to specify the AFP to PostScript transform in a large number of printer definitions, a component can simplify administration. If you need to change your transform filter in the future, you can make the change in your Processing component.

   _____

2. On the Processing panel of either the printer definition or the component, select the **Line data**, **MO:DCA-P**, and **XML** data formats.

   _____

3. Next to these data formats, specify the **afpxps.dll** filter and filter options in the **Filter** field. Type the absolute path name if the filter is not in a directory named in the LIBPATH environment variable. For filter options, see "AFP to PostScript transform filter" on page 142.

   _____

4. If you run IP PrintWay basic mode, select the **Resubmit for filtering** field. IP PrintWay extended mode ignores this field because it calls transforms directly. For more information about this field, see "Resubmitting documents to Print Interface for filtering" in *z/OS Infoprint Server Operation and Administration*.

   _____

5. (Optional) In the **Fail on error** field, select whether you want the transform to fail when a transform warning or data stream error occurs during the transform. When a transform fails, the transform does not produce an output document.

   The Infoprint Server **fail-on-transform-error** job attribute overrides this field.

   If you do not select an option in this field and **fail-on-transform-error** is not specified, the AOP_FAIL_ON_ERROR environment variable determines when the transform fails. Otherwise, the default is to fail on error.

   _____

6. (Optional) In the **Trailer error page** field, select the type of messages you want the transform to write on a page at the end of the AFP output (called the **trailer error page**).

   The Infoprint Server **trailer-transform-error-page** job attribute overrides this value.

   If you do not select an option in this field, the AOP_TRAILER_ERROR_PAGE environment variable determines the type of messages the transform writes. Otherwise, the default action is to place informational, warning, or error messages on the trailer page as part of the output document.

   _____

7. (Optional) If you created a Processing component, specify the name of the Processing component in the **Component name** field on the IP PrintWay printer definition panel. Do this in all printer definitions to which the transform applies.

   After you include a Processing component, check the Processing panel in the printer definition to make sure the transform is specified correctly. You might need to remove (space over) any filters that are specified on the Processing panel of the printer definition itself. If any filters are specified in the printer definition, the filters specified in the component are not used.

Tip: If you remove the **aopfiltr.so** or **lpd_compat.so** filter for the **Text** data format from the **Filter** field of the printer definition, be sure to specify the same filter in the Processing component. (Print Interface uses these filters.)

Example -- ISPF Processing panel for the AFP to PostScript transform

Figure 7 shows the ISPF panel that you use to specify the AFP to PostScript transform in a printer definition. Only a portion of the Processing panel is shown. This example uses the afpxps_eu transform class from the aopxfd.conf file.

```
Edit                              Processing
Command ==> _____

Printer definition name . postscript1_____
:

Supported data formats and associated filters:
Data format:  Filter:

/ Line data   afpxps.dll -c eu %filter-options_____   (extend)
/ MO:DCA-P    afpxps.dll -c eu %filter-options_____   (extend)
/ PostScript  _____   (extend)
/ Text        aopfiltr.so_____   (extend)
_ PCL         _____   (extend)
_ PDF         _____   (extend)
_ SAP         _____   (extend)
/ XML         afpxps.dll -c eu %filter-options_____   (extend)
_ TIFF        _____   (extend)
_ JPEG        _____   (extend)
_ Other       _____   (extend)

/ Resubmit for filtering
:

Transforms:
   Fail on error . . . .  2   1. No  2. Error  3. Warning
   Trailer error page. .  1   1. No  2. Error  3. Warning
:
```

Figure 7. Example of the ISPF Processing panel for the AFP to PostScript transform

Explanation of fields:

- The **Line data**, **MO:DCA-P**, and **XML** data formats are selected because the **afpxps.dll** filter can transform these data formats to PostScript format. The transform options are:
  - The **-c** filter option causes the transform to use the **eu** transform class, which is defined in the transform configuration file.
  - The **%filter-options** filter option lets the job submitter override the transform class because it is specified to the right of the **-c** filter option.
- The **Text** and **PostScript** data formats are selected because the printer can accept these data formats. The **aopfiltr.so** filter is specified for **Text** data because Print Interface uses this filter.
- The **Resubmit for filtering** field is selected so that IP PrintWay basic mode calls Print Interface to transform documents submitted from batch applications.

- In the **Fail on error** field, option **Error** is selected. If a data stream error occurs during the transform, the transform fails and does not create an output document.
- In the **Trailer error page** field, option **No** is selected. The transform does not write any warning or error messages to a trailer error page.

Specifying AFP resources and resource libraries

In the printer definition, you can specify AFP resources (such as the form definition, page definition, and font) and AFP user resource libraries. In addition, you can specify other AFP options (such as the type of duplexing).

AFP resources, resource libraries, and AFP options can be specified in other ways:

- You can specify AFP resources, AFP user resource libraries, and other AFP options in Infoprint Server job attributes and OUTPUT statement (JCL) parameters. Values specified in job attributes and OUTPUT parameters override the same values in the printer definition. For example, the **form-definition** job attribute and the FORMDEF JCL parameter override the the **Form definition** field in the printer definition.
- You can specify AFP resources in the transform configuration file. The AFP resources specified in the printer definition override the same resources specified in the transform configuration file.
- You can specify AFP system resource libraries in the transform configuration file. The transform searches the AFP user resource libraries specified in the printer definition before searching the AFP system resource libraries specified in the transform configuration file.

Table 24 describes the printer definition fields (and the corresponding PIDU attributes). For a description of the PIDU attributes, see *z/OS Infoprint Server Operation and Administration*.

Table 24. AFP fields in the printer definition

Field name (PIDU attribute)	Description	Default
Carriage control type (carriage-control-type)	The type of carriage controls in the document (none, ANSI, machine).	Infoprint Server automatically detects the type of carriage controls. Therefore, in most cases, leave this field blank.
Character sets ((chars))	One to four coded font names. The transforms use this font for line data when no font is specified in the page definition. X0 is prefixed to the font.	The font in the transform configuration file or the system default font X060D9. (See Note 2.)
Duplex (duplex)	The duplexing option (simplex, normal, tumble) used to format output and control printing on PCL and PostScript printers. (See Note 1.) **Tip:** Also select the duplex option in the **Duplex supported** field.	The duplex value in the form definition.
Form definition (form-definition)	The form definition used to format line-data and AFP documents. If **dummy** is specified, the last inline form definition or the default for your printer if no inline form definition is specified.	The first inline form definition. If none exists, the form definition in the transform configuration file or F1CP0110.

Table 24. AFP fields in the printer definition (continued)

Field name (PIDU attribute)	Description	Default
Image shift x-direction back (x-image-shift-back)	The offset in the x direction for the back side of a page. (See Note 1.)	The offset value in the form definition.
Image shift x-direction front (x-image-shift-front)	The offset in the x direction for the front side of a page. (See Note 1.)	The offset value in the form definition.
Image shift y-direction back (x-image-shift-back)	The offset in the y direction for the back side of a page. (See Note 1.)	The offset value in the form definition.
Image shift y-direction front (y-image-shift-front)	The offset in the y direction for the front side of a page. (See Note 1.)	The offset value in the form definition.
Input tray (input-tray-number)	The input tray number on the AFP printer. The transforms map this number to the printer tray number by using mapping values specified in the AOP_TRAYID environment variable in the transform configuration file. (See Note 1.)	The offset value in the form definition.
Output bin (output-bin-number)	The output bin number on the AFP printer. This attribute does not apply to the AFP to PDF transform. (See Note 1.)	The offset value in the form definition.
Overlay back (overlay-back)	The overlay for the back side of each page, used in addition to overlays named in the form definition.	None.
Overlay front (overlay-front)	The overlay for the front side of each page, used in addition to overlays named in the form definition.	None.
Page definition (page-definition)	The default page definition for line-data documents. If **dummy** is specified, the first inline page definition.	The first inline page definition. If none exists, the page definition in the transform configuration file or P1P08682. (See Note 2.)
PRMODE (process-mode)	Specifies the type of data in the print data set and whether these transforms must do optional processing of the data. **Note:** The transforms only support SOSI1, SOSI2, SOSI3 and SOSI4; all other values are ignored.	• If the Print Interface subsystem processes the data set, the value in the printer definition is used. If none is specified in the printer definition, JES provides a default value. However, the transforms do not use the JES default value. • If the Print Interface subsystem does not process the data set, JES provides a default value.
Resource directories (resource-directories)	The directories that contain TrueType, WorldType, and OpenType fonts that the transforms use to process data sets. The transforms search these directories before searching resource directories named in the transform configuration file. **Tip:** The transform must have read access to these directories and files. See "Setting up security for AFP user path directories" on page 120.	None

Table 24. AFP fields in the printer definition (continued)

Field name (PIDU attribute)	Description	Default
Resource library (resource-library)	Libraries that contain AFP resources, such as fonts, page segments, form definitions, and page definitions. The transforms search these libraries before searching resource libraries named in the transform configuration file. **Tip:** The user ID that starts Infoprint Server daemons must have read access to these libraries. See "Setting up security for AFP resource libraries" on page 119.	None.
Table reference characters (table-reference-characters)	Specifies whether the document contains table reference characters (TRCs).	No TRCs.

Notes:

1. Some values, such as duplex, can be specified in the form definition. The value in the printer definition overrides the value in the form definition even if the form definition was specified by the job submitter. Therefore, if you want the transform to use the value specified in a user-specified form definition, leave the field in the printer definition blank and specify a form definition that contains the desired value.

   For example, if you want to specify duplex as the default, but do not want the duplex default to override the value in a user-specified form definition, do this:

   - Leave the **Duplex** field blank.
   - Specify a form definition that contains the duplex option, such as F1CP0111, in the **Form definition** field.

2. If JES provides a default font and page definition to IP PrintWay basic mode, the font and page definition specified in the printer definition or transform configuration file are not used. When you define the IP PrintWay basic mode functional subsystem (FSS), you can request that JES not provide a default font and page definition. For more information, see *z/OS Infoprint Server Customization*.

Editing printer definitions to specify AFP options

To edit printer definitions, you can use either Infoprint Server ISPF panels or the Printer Inventory Definition Utility (PIDU) program. This section describes how to use the ISPF panels. For information about the PIDU program, see "Using the PIDU program to manage the Printer Inventory" in *z/OS Infoprint Server Operation and Administration*.

Before you begin: You must be authorized to edit the Printer Inventory: For information, see *z/OS Infoprint Server Customization*.

Use the Infoprint Server ISPF panels to edit the printer definition for a printer or email destination. On the Allocation panel, specify any of these fields:

- Carriage control type
- Character sets
- Duplex
- Form definition
- Image shift x-direction back, Image shift x-direction front, Image shift y-direction back, Image shift y-direction front
- Input tray
- Output bin
- Overlay back, Overlay front
- Page definition
- Resource directories

- Resource library
- Table reference characters

For information about the Allocation fields, see "Specifying AFP resources and resource libraries" on page 146.

Example -- ISPF Allocation panel for AFP transforms

Figure 8 shows the ISPF panel that you use to specify AFP resources in a printer definition. This example applies to all the AFP transforms. Only a portion of the Allocation panel is shown.

```
                          Allocation

Printer definition name . pcl1_____
  :
  :
Resource Related Values:
   Form definition . F1CP0111
   Character sets  . ____   ____   ____   ____
   Overlay front . . _____     Back . . _____
   Input tray  . . . ___
   Output bin  . . . _____
   Page definition . P1P06362
   Resource library. _____  (extend)

  :
  :
   Image shift x-direction front . . _____     Back . . _____
               y-direction front . . _____     Back . . _____
  :
Other Values:

  :
  :
   Duplex . . . . . . . _   1. Simplex  2. Duplex  3. Tumble
  :
  :
   _ Table reference characters
  :
  :
```

Figure 8. Example of the ISPF Allocation panel for AFP transforms

Explanation of fields:
- The transforms use default form definition F1CP0111.
- The transforms use default page definition P1P06362.

Chapter 5. Diagnosing errors

This chapter describes the diagnostic facilities that the transforms provide.

Submitting APARs

Report any difficulties using the transforms to your IBM Support Center. If an APAR is required, the Support Center can tell you where to send the required diagnostic information.

When submitting an APAR, use the component ID **5655TFX00**.

Using error messages

The transforms write error messages to these locations:

Trailer error page
> The trailer error page is a page that the transforms add to the end of the output when a warning or data stream error occurs during the transform. The trailer error page contains warning and error messages from the transform to help you diagnose problems.
>
> To print output without transform messages, you can suppress all messages on the trailer error page. Or, you can choose to suppress only transform warning messages. The transform always writes warning and error messages to the Infoprint Server common message log and the transform's **stderr** file so that you can find messages even if the transform does not write a trailer error page.
>
> You can use these methods to suppress messages on a trailer error page:
> - Specify the Infoprint Server **trailer-transform-error-page** job attribute with the print request.
> - Set the **Trailer error page** field to NO by using PIDU, the ISPF panel, or in the printer definition used to print the document.
> - Set the **AOP_TRAILER_ERROR_PAGE** environment variable in the Infoprint Server transform configuration file, **aopxfd.conf**.

Infoprint Server common message log
> The transforms write some warning and error messages to the Infoprint Server common message log if the common message log is enabled in Infoprint Server. For information about how to use the **aoplogu** command to see messages in the common message log, see *z/OS Infoprint Server Operation and Administration*.

Transform stderr file
> The transform's **stderr** file is a file that Infoprint Server administrators can access. In general, the transforms write messages in both the **stderr** file and the Infoprint Server common message log.
>
> For some error conditions, the transforms write more detailed error messages to the **stderr** file when tracing is turned on. If you have trouble diagnosing a problem, you can turn tracing on and look for additional messages in the **stderr** file.

Finding the transform stderr file

You can find a transform's **stderr** file in the directory named *base-directory*/**xfd**, where *base-directory* is determined by the value of the **base-directory** attribute in the Infoprint Server configuration file, **aopd.conf**. The default base directory is named **/var/Printsrv**.

The **stderr** file-naming convention is:

transform[*_class*]*.#.*stderr

transform	Specifies the transform name, which is defined in the Infoprint Server Transform Manager configuration file, **aopxfd.conf**. For example, **afpxpcl**.
class	Specifies the transform class, which is specified in the **-c** option when the transform is called. Transform classes are defined in the Infoprint Server Transform Manager configuration file, **aopxfd.conf**.
#	A unique number that the transform assigns. This number is incremented each time a new transform is started.

Tip: To read the transform's **stderr** file, you must be a member of the AOPADMIN group. For information about how to establish security for Infoprint Server administrators, see *z/OS Infoprint Server Customization*.

Running traces

This section describes how to run a trace of a transform. The service representative in the IBM Support Center might ask you to run a trace to aid in diagnosing a problem. If so, the representative will tell you how and where to send the trace information. You do not have to interpret the trace. Send it to your service representative.

You can run a trace of a transform in these ways:

In a printer definition:
Use the **Filter** field in a printer definition.

Run the job that you want to trace, and then either remove the trace options or specify a different trace file name in the **-F** option before you run the next job. A different trace file name should be used or the transform will overwrite the old trace data. For more information about the **-F** option, see "Trace options" on page 153.

In the filter-options job attribute:
Use the **filter-options** job attribute specified with the **lp** command, or use any other job-submission method that lets you specify Infoprint Server job attributes (such as when you submit a job by using the Infoprint Port Monitor).

On the transform command:
Use the **afpxpcl**, **afpxpdf**, or **afpxps** command.

With each of these methods, you can use the trace options that are explained in "Trace options" on page 153.

For examples, see "Examples of running traces" on page 154.

Trace options

These trace options let you run a trace of a transform and specify where you want the trace information written:

-F *tracefile*

Specifies the name of the file where the transform writes all messages and trace information when the **-T trans** or **-T all** trace option is specified.

The file name can contain up to 120 characters and can include an extension.

The *tracefile* is created in a directory with the format:

```
base-directory/xfd/transform[_class].#.d
```

where:

base-directory
Specifies the Infoprint Server base directory, which is determined by the value of the **base-directory** attribute in the Infoprint Server configuration file, **aopd.conf**. The default base directory is **/var/Printsrv**.

transform
Specifies the transform name, which is defined in the Infoprint Server Transform Manager configuration file, **aopxfd.conf**.

class
Specifies the transform class, which is specified in the **-c** option when the transform is called. Transform classes are defined in the Infoprint Server Transform Manager configuration file, **aopxfd.conf**.

A unique number that the transform assigns. This number is incremented each time a new transform is started.

Tips:

- If the file specified already exists, the transform overwrites the old trace data.
- To write the trace file to a location other than the base directory, specify the trace file name with a fully qualified path name. For example, /u/mydocs/myfile.trace. This file is not deleted when the **aopxfd** daemon is stopped and restarted.
- To read the trace file in the base directory or a user supplied directory, you must be a member of the AOPADMIN group. For information about how to establish security for Infoprint Server administrators, see *z/OS Infoprint Server Customization*.
- When the Infoprint Server transform daemon (**aopxfd**) is stopped and restarted, all subdirectories of **xfd** are deleted.

Default: The trace is written to the **stderr** file.

Example: -F myfile.trace

-T *traceoptions*

Specifies the type of trace you want. To request more than one type of trace, specify the **-T** option multiple times. Allowed values are:

all   All trace options (generates a lot of output).

| This also includes file and memory allocations and input output trace.

trans File and memory allocations

| By default, the trace is written to the standard error (**stderr**) file, which contains everything needed for debugging any problems with the transform request. When **-T all** is specified, the transform also logs additional information in the **stderr** file, even when the **-F** option specifies that the trace output is sent to a user supplied file name. Therefore, if you use the **-F** option, you need to use the trace information in the user supplied file name and the trace information in the **stderr** file to debug any problems with the transform request.

Default: No tracing is done.

Example: `-T all`

Examples of running traces

In a printer definition:

Figure 9 shows how to run a trace of the AFP to PCL transform in the Processing section of a printer definition. Only a portion of the ISPF panel is shown. The trace is written to file **/var/Printsrv/xfd/afpxpcl.*n*.d/ myfile.trace**.

```
                           Processing
:
:

Supported data formats and associated filters:
Data format:  Filter:

/ Line data  afpxpcl.dll %filter-options -F myfile.trace -T all (extend)
/ MO:DCA-P   afpxpcl.dll %filter-options -F myfile.trace -T all (extend)
_ PostScript _____ (extend)
/ Text       _____ (extend)
/ PCL        _____ (extend)
_ PDF        _____ (extend)
_ SAP        _____ (extend)
/ XML        afpxpcl.dll %filter-options -F myfile.trace -T all (extend)
_ TIFF       _____ (extend)
_ JPEG       _____ (extend)
_ Other      _____ (extend)
:
:
```

Figure 9. Example of Processing panel for running traces

In the filter-options job attribute:

This example shows how to run a trace by using the **lp** command.

In this example, printer definition `myprinter` specifies the AFP to PCL transform (**afpxpcl**). The transform writes the trace and **stderr** output to file **/var/Printsrv/xfd/afpxpcl.*n*.d/myfile.trace**.

```
lp -d myprinter -o "filter-options='-T all -F myfile.trace'" myfile.afp
```

On the transform command:

This example shows how to run a trace on a transform command.

In this example, the AFP to PostScript transform (**afpxps**) writes a full trace and **stderr** output for file **myfile.afp** to file **/var/Printsrv/xfd/afpxps.***n***.d/ myfile.trace**.

```
afpxps -d myprinter -T all -F myfile.trace myfile.afp
```

Finding the current level of support

You can use the **amblist** command to find the current level of support for a transform. For example, to find the level of support for the AFP to PDF transform, enter this on the z/OS UNIX command line:

```
su
echo " LISTIDR" | amblist /usr/lpp/Printsrv/lib/afpxpdfd.dll | grep -i Build_Id
```

The **amblist** output looks like this:

```
10/16/2011  OA35704 BUILD_ID=3470 20111016
```

If the transforms are installed in the default directories, specify these paths to find the support levels for the transforms:

- /usr/lpp/Printsrv/lib/afpxpdfd.dll
- /usr/lpp/Printsrv/lib/afpxpcld.dll
- /usr/lpp/Printsrv/lib/afpxpsd.dll
- /usr/lpp/Printsrv/lib/afpxxml.dll
- /usr/lpp/Printsrv/bin/afpxpcld
- /usr/lpp/Printsrv/bin/afpxpdfd
- /usr/lpp/Printsrv/bin/afpxpsd

Note: If you run the **amblist** command from the **lib** or **bin** directory where the transform is installed, you only need to specify the file name.

Chapter 6. Messages

This chapter describes the messages related to the transforms that come from Infoprint Server and from the transforms.

For information about all the messages from Infoprint Server, see *z/OS Infoprint Server Messages and Diagnosis*

Message format

The messages have this format:

AO*xnnnnt message_text*

where:

AO*x*   Identifies transform messages, where:

    AOK   Identifies messages from the transforms.

    AOP   Identifies messages from Infoprint Server.

nnnn   Four- or five-digit message number.

t   One-character type code:

Type code	Meaning
E	An error occurred.
I	An information message.
W	A warning situation occurred.

message_text
    The text of the message.

Messages

AOK00002E Cannot open file *file* **error code** (*error_number*, *message*)

Explanation: The file could not be opened because it does not exist or it cannot be accessed.

In the message text:

file
    The name and path of the file.

error_number
    The operating system code that describes the error that occurred.

message
    The operating system message describing the error that occurred.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail**

on error field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify the file name and reenter the command.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00003W File *file* **is not a recognizable font file.**

Explanation: The AFP input file, *file*, could not be opened because of an unsupported font. The file might have been corrupted during font installation.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify that the font file is in the correct format.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00004E Error reading file *file error_details*

Explanation: The transform could not read the AFP data file. The message might display the file name and a description of the error. In the message text:

file
    The name of the file being read.

error_details
    A description of the error.

System action: The transform stops processing and the job ends.

User response: If the message includes the file name and error description, verify that the file is a valid AFP file and is not corrupted. If it is valid and complete and you cannot find the error, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

AOK00005E Unable to write file

Explanation: The transform could not write to the output file because an error occurred.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the subdirectory exists, the file system is not full or write-protected, and you are authorized to access the subdirectory. If you cannot find the error, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00006E Error writing file.

Explanation: An I/O error occurred while the transform was attempting to write a temporary file. The error might be due to insufficient space in the file system or insufficient permission to write to the file system. If using the default product installation options, temporary files are written to the `/var/Printsrv/xfd` subdirectories.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Review the SYSLOG for messages relating to a full file system or RACF permission exceptions, or contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00006W Error writing file.

Explanation: An I/O error occurred while the transform was attempting to write a temporary file. The error might be due to insufficient space in the file system or insufficient permission to write to the file system. If using the default product installation options, temporary files are written to the

/var/Printsrv/xfd subdirectories.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Review the SYSLOG for messages relating to a full file system or RACF permission exceptions, or contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00007W Seek error *bytes_read*, **offset=** *offset*, **whence=** *where*

Explanation: An error occurred during the file seek.

In the message text:

bytes_read
  The number of bytes read.

offset
  The number of bytes that the seek is to offset in the file.

where
  A code that specifies where in the file the seek begins.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Run the transform again. If the problem persists, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00008E Memory allocation failed for *buffer*

Explanation: A memory allocation failed due to insufficient heap memory. In the message text, *buffer* is a memory control block that is being allocated.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Increase the size of the virtual storage region available to the transform.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00008W Memory allocation failed for *buffer*

Explanation: A memory allocation failed due to insufficient heap memory. In the message text, *buffer* is a memory control block that is being allocated.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Increase the size of the virtual storage region available to the transform.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00013E Unexpected NULL memory address encountered

Explanation: The transform encountered an unexpected NULL memory address.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00013W Unexpected NULL memory address encountered

Explanation: The transform encountered an unexpected NULL memory address.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00014E Open or fldata call failed for file *file*, **mode** *mode*, **with return code** *LE_error_number*:*LE_message_text*. **An attempt was made to open a nonexistent file for read.**

Explanation: The transform was unable to open or query the primary or secondary input file. In the message text:

file
   The name of the file.

mode
   The file mode–either read or write.

LE_error_number
   The error number returned from Language Environment.

LE_message_text
   The error message text returned from Language Environment.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS

Module: Not applicable

Routing code: Not applicable

Descriptor code: Not applicable

Automation: Not applicable

AOK00017W I/O block size is less than maximum AFP structured field size of *blksize*, **resetting to** *blksize*

Explanation: The block size specified is not valid. In the message text, *blksize* is the required minimum block size for AFP structured fields.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: None.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00024E Error occurred while adding text data to the infrastructure**

| **Explanation:** An internal error occurred while adding text data to the infrastructure.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00025E Failed to find font resource with matching ID**

| **Explanation:** The transform could not find a font resource with the matching ID.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00026E Font id not found in MCF**

| **Explanation:** The transform could not find the font ID listed in the Map Coded Font structured field.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00027E Character set not found**

| **Explanation:** The transform could not find the character set for the font ID.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00028E Code page not found**

| **Explanation:** The transform could not find the code page for the font ID.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail**

on error field in the printer definition, or the fail-on-transform-error job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS

Module: Not applicable

Routing code: Not applicable

Descriptor code: Not applicable

Automation: Not applicable

AOK00029E   Error adding font to infrastructure

Explanation: An internal error occurred while adding font object to the infrastructure.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in aopxfd.conf, the Fail on error field in the printer definition, or the fail-on-transform-error job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00030E   Error calling non-IOCA image interpreter from infrastructure

Explanation: An internal error occurred while calling the non-IOCA image interpreter from the infrastructure.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in aopxfd.conf, the Fail on error field in the printer definition, or the fail-on-transform-error job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS

Module: Not applicable

Routing code: Not applicable

Descriptor code: Not applicable

Automation: Not applicable

AOK00031E   Invalid AFP structured field (*sfid*)

Explanation: The transform did not recognize the internal format of the structured field in the AFP file. In the message text, *sfid* is a hexadecimal value for the structured field identifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in aopxfd.conf, the Fail on error field in the printer definition, or the fail-on-transform-error job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: Contact your system programmer.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00032E   Error adding bar code to infrastructure

Explanation: An internal error occurred while adding a bar code object to the infrastructure.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in aopxfd.conf, the Fail on error field in the printer definition, or the fail-on-transform-error job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00033E Error occurred while adding TLE indexing data to the infrastructure

Explanation: An internal error occurred while adding TLE indexing data to the infrastructure.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00034E Error adding AFP structured field ids to array. Array is full

Explanation: An internal error occurred while adding AFP structured field IDs to an array.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00035E Error occurred while adding AFP structured field to the infrastructure

Explanation: An internal error occurred while adding an AFP structured field to the infrastructure.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00036E Error occurred while buffering one or more AFP structured fields.

Explanation: An internal error occurred while buffering one or more AFP structured fields.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00037E Data Map does not exist in memory

Explanation: An internal logic error occurred while processing an AFP Data Map. An unexpected combination of internal data was found when the

transform tried to load the AFP Data Map to the memory.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00038E Unsupported non- MO:DCA line data feature

Explanation: A non- MO:DCA line data feature is currently unsupported.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00039E Error processing TIFF image

Explanation: A TIFF image contains an error.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00041E Error adding form to infrastructure

Explanation: An internal error occurred while adding an overlay object to the infrastructure.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00043W Error opening *file*, **error number=***error_code*, **reason=***LE_error_number*, **message=***LE_message_text***.**

Explanation: An error occurred while opening the AFP file. The transform could not open the AFP data file or data set. In the message text:

file
    The name of the file or data set.

error_code
    The internal transform error code.

LE_error_number
    The error number returned from Language Environment.

LE_message_text
The error message text returned from Language Environment.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: If the input is a hierarchical file system (HFS) file, ensure that you entered the correct file name and directory path and check the file and directory permissions. If the input is a data set, ensure that you entered the correct data set name and have the appropriate RACF permissions to read it. Verify that the file is a valid AFP file and is not truncated. If the file is valid and complete, contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00044E Unexpected EOF

Explanation: An error occurred due to an early and unexpected end of file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00045W Unknown or unsupported AFP command (*sfid***) in** *file***.**

Explanation: An error occurred while processing an AFP structured field. The transform did not recognize the structured field. An unrecognized structured field can occur for these reasons:

- Bad AFP syntax. The application that created the AFP might have specified a structured field incorrectly.
- A truncated or otherwise damaged AFP data file; for example, character translation during the transfer altered the file.
- The transform does not support the AFP structured field.

The message might display **(***sfid***) in** *file*. In the message text:

file
The name of the input file the transform is processing.

sfid
A three-byte, hexadecimal structured field identifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00047W Resolution format error *error_code***, defaulting to 300 dpi**

Explanation: The resolution parameter in the image header is invalid. In the message text, *error_code* is the error code of the resolution format error:
1   Invalid IMG header.
2   Improper Short_Seq length.
3   Denominator that is zero or negative.
4   Denominator that is greater than the numerator.

System action: The transform ends or attempts to

continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: If the output is invalid, correct the bad image file and submit the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00049E   IM1/IOCA resource does not exist in memory

Explanation: An internal logic error occurred. The transform found an unexpected combination of internal data while it attempted to load the IM1/IOCA resource to memory.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00050E   Page Segment does not exist in memory

Explanation: An internal logic error occurred. An unexpected combination of internal data was found when the transform tried to load the AFP Page Segment to the memory.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the

fail-on-transform-error job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00051E   Channel code does not exist in Data Map.

Explanation: Channel code could not be found in an AFP Data Map. A Data Map exists within the page definition.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the problem and run the transform again. If you cannot correct the problem, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00052E   LND structured field specifies a CCPID that does not exist in Data Map

Explanation: A conditional processing control (CCP) could not be found in an AFP Data Map. A Data Map exists within the page definition.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the correct page definition

has been specified. If the page definition is correct, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00053E   CCPID comparison string mismatch

Explanation: For a conditional processing control (CCP) to take effect, a comparison must occur. However, the length of the data in the data record does not match the length of the comparison string in the CCP.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the problem and run the transform again. If you cannot correct the problem, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00054E   Error adding image to infrastructure

Explanation: An internal error occurred while adding an image object to the infrastructure.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00055E   Error calling image from infrastructure

Explanation: An internal error occurred while calling an image object from the infrastructure.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00056E   Error calling form from infrastructure

Explanation: An internal error occurred while calling an overlay object from the infrastructure.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00058E AEG overflow

Explanation: An error occurred while processing the AFP data file. The Active Environment Group (AEG) stack has overflowed. This typically indicates that the AEG structured fields format is invalid.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in aopxfd.conf, the Fail on error field in the printer definition, or the fail-on-transform-error job attribute that is in effect.

User response: Ensure that the correct page definition and form definition are specified. If they are correct, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00059E Error adding comment to infrastructure

Explanation: An internal error occurred while adding a comment object to the infrastructure. The comment might have been extracted from a No Operation structured field record before being added to the infrastructure.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in aopxfd.conf, the Fail on error field in the printer definition, or the fail-on-transform-error job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00060E Error adding shading pattern to infrastructure

Explanation: An internal error occurred while adding the shading pattern to the infrastructure.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in aopxfd.conf, the Fail on error field in the printer definition, or the fail-on-transform-error job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00061E Error adding vector graphic to infrastructure

Explanation: An internal error occurred while adding a vector graphic object to the infrastructure.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in aopxfd.conf, the Fail on error field in the printer definition, or the fail-on-transform-error job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00062E Medium Map does not exist in memory

Explanation: An internal logic error occurred while processing an AFP medium map. An unexpected combination of internal data was found when the transform tried to load the AFP medium map to memory.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00063E Unsupported line data feature

Explanation: A record data feature is currently unsupported.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00064E Missing resource name

Explanation: A resource in a resource group does not have a name.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the correct page definition and form definition are specified. If they are correct, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00065E Unable to find entry in font RAT file

Explanation: A font entry was not found in the resource access table (RAT).

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the required TrueType, OpenType, and WorldType fonts are installed. If they are installed, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00066E Unable to decompress IOCA Image.

Explanation: An error occurred while extracting an IOCA object in the AFP file. The AFP data file contains a compressed IOCA object that cannot be extracted by the transform.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00101W Missing BDT

Explanation: An error occurred while processing the AFP file. The specified AFP data file contains an invalid Begin Document (BDT) structured field, the field is missing, or the field is incorrectly formatted.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00102W Unexpected BDT

Explanation: An error occurred while processing the AFP file. An unexpected Begin Document (BDT) structured field was found when the transform tried to process the AFP data file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00103W Too many BAG

Explanation: An error occurred while processing the AFP file. More than one Begin Active Environment Group (BAG) structured field was found when the transform was processing an AFP object in the AFP data file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

| Automation: Not applicable.

AOK00104W Too many PGD

| **Explanation:** An error occurred while processing the AFP file. More than one Page Descriptor (PGD) structured field was found when the transform was processing an AFP object in the AFP data file.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00105W Too many PTD

| **Explanation:** An error occurred while processing the AFP file. More than one Presentation Text Descriptor (PTD) structured field was found when the transform was processing an AFP object in the AFP data file.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00106W Too many OBD

| **Explanation:** An error occurred while processing the AFP file. More than one Object Area Descriptor (OBD) structured field was found when the transform was processing an AFP object in the AFP data file.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00107W Too many OBP

| **Explanation:** An error occurred while processing the AFP file. More than one Object Area Position (OBP) structured field was found when the transform was processing an AFP object in the AFP data file.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| Routing code: Not applicable.

| Descriptor code: Not applicable.

| Automation: Not applicable.

AOK00108W Too many IOC

| Explanation: An error occurred while processing the
| AFP file. More than one Image Output Control (IOC)
| structured field was found when the transform was
| processing an AFP object in the AFP data file.

| System action: The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| User response: Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| System programmer response: Contact an IBM service
| representative.

| Operator response: Not applicable.

| Problem determination: Not applicable.

| Source: Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| Module: Not applicable.

| Routing code: Not applicable.

| Descriptor code: Not applicable.

| Automation: Not applicable.

AOK00109W Too many IID

| Explanation: An error occurred while processing the
| AFP file. More than one Image Input Descriptor (IID)
| structured field was found when the transform was
| processing an AFP object in the AFP data file.

| System action: The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| User response: Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| System programmer response: Contact an IBM service
| representative.

| Operator response: Not applicable.

| Problem determination: Not applicable.

| Source: Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| Module: Not applicable.

| Routing code: Not applicable.

| Descriptor code: Not applicable.

| Automation: Not applicable.

AOK00110W Too many BOG

| Explanation: An error occurred while processing the
| AFP file. More than one Begin Object Environment
| Group (BOG) structured field was found when the
| transform was processing an AFP object in the AFP
| data file.

| System action: The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| User response: Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| System programmer response: Contact an IBM service
| representative.

| Operator response: Not applicable.

| Problem determination: Not applicable.

| Source: Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| Module: Not applicable.

| Routing code: Not applicable.

| Descriptor code: Not applicable.

| Automation: Not applicable.

AOK00111W Too many MIO

| Explanation: An error occurred while processing the
| AFP file. More than one MAP IO Image Object (MIO)
| structured field was found when the transform was
| processing an AFP object in the AFP data file.

| System action: The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| User response: Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| System programmer response: Contact an IBM service
| representative.

| Operator response: Not applicable.

| Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00112W Too many IDD

Explanation: An error occurred while processing the AFP file. More than one Image Data Descriptor (IDD) structured field was found when the transform was processing an AFP object in the AFP data file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00113W Unknown PTX control sequence

Explanation: An error occurred while processing the AFP file. An incorrect control sequence in the Presentation Text (PTX) structured field was encountered when the transform was processing the AFP data file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00114W Unsupported PTX control sequence

Explanation: An error occurred while processing the AFP file. An incorrect control sequence in the Presentation Text (PTX) structured field was encountered when the transform was processing the AFP data file. Incorrect PTX control sequences can occur for these reasons:

- A bad PTX control sequence syntax.
- A truncated AFP data file.
- The PTX control sequence is not supported.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00115W Error getting triplet

Explanation: An error occurred while processing the triplet from an AFP object in the AFP data file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a

valid AFP file. If the file is not valid or it is truncated
or corrupted, get a new copy of the AFP file.
Otherwise, contact your system programmer.

System programmer response: Contact an IBM service
representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or
PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00117W Invalid triplet data

Explanation: An error occurred while processing the
AFP file. An incorrect value for triplet data was
encountered when the transform was processing the
AFP data file..

System action: The transform ends or attempts to
continue based on the AOP_FAIL_ON_ERROR
environment variable setting in **aopxfd.conf**, the **Fail
on error** field in the printer definition, or the
fail-on-transform-error job attribute that is in effect.

User response: Make sure that the AFP data file is a
valid AFP file. If the file is not valid or it is truncated
or corrupted, get a new copy of the AFP file.
Otherwise, contact your system programmer.

System programmer response: Contact an IBM service
representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or
PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00118W Unsupported triplet data

Explanation: An error occurred while processing the
AFP file. An unsupported value for triplet data was
encountered when the transform was processing the
AFP data file. Unsupported triplet data values can
occur for these reasons:

- Invalid format for triplet data.
- A truncated AFP data file.

- A control sequence in the Presentation Text (PTX)
  structured field is not supported.

System action: The transform ends or attempts to
continue based on the AOP_FAIL_ON_ERROR
environment variable setting in **aopxfd.conf**, the **Fail
on error** field in the printer definition, or the
fail-on-transform-error job attribute that is in effect.

User response: Make sure that the AFP data file is a
valid AFP file. If the file is not valid or it is truncated
or corrupted, get a new copy of the AFP file.
Otherwise, contact your system programmer.

System programmer response: Contact an IBM service
representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or
PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00119W Invalid triplet

Explanation: An error occurred while processing the
AFP file. An incorrect value for the triplet type was
encountered when the transform was processing the
AFP data file.

System action: The transform ends or attempts to
continue based on the AOP_FAIL_ON_ERROR
environment variable setting in **aopxfd.conf**, the **Fail
on error** field in the printer definition, or the
fail-on-transform-error job attribute that is in effect.

User response: Make sure that the AFP data file is a
valid AFP file. If the file is not valid or it is truncated
or corrupted, get a new copy of the AFP file.
Otherwise, contact your system programmer.

System programmer response: Contact an IBM service
representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or
PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00120W Unsupported triplet

Explanation: An error occurred while processing the AFP file. An unsupported value in the triplet type was encountered when the transform was processing the AFP data file. Unsupported triplet type values can occur for these reasons:

- Invalid format for triplet type.
- A truncated AFP data file.
- The control sequence is not supported.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00121W Error getting repeating group

Explanation: An error occurred while processing the AFP file. An error in the repeating group structure was encountered when the transform was processing the AFP data file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00122E Error occurred while processing *file*

Explanation: An error occurred while the transform was processing a file named *file*.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Look for one or more messages that give details about the processing error.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00123W Field data is invalid or unsupported

Explanation: An error occurred while processing the AFP file. Unsupported or invalid data in a structured field was encountered when the transform was processing the AFP data file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00124W Size of field data is invalid

| **Explanation:** An error occurred while processing the
| AFP file. Excessive or insufficient data in a structured
| field was encountered when the transform was
| processing the AFP data file.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00125W Field data is invalid

| **Explanation:** An error occurred while processing the
| AFP file. Invalid data in a structured field was
| encountered when the transform was processing the
| AFP data file.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00126W Missing PGD

| **Explanation:** An error occurred while processing the
| AFP file. The specified AFP data file contains an invalid
| Page Descriptor (PGD) structured field, the field is
| missing, or the field is incorrectly formatted.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00127W Missing PTD

| **Explanation:** An error occurred while processing the
| AFP file. The specified AFP data file contains an invalid
| Presentation Text Descriptor (PTD) structured field, the
| field is missing, or the field is incorrectly formatted.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00128W Page size not supported

| **Explanation:** An error occurred while processing the AFP file. The specified AFP data file contains a page size that is not supported.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00130W No support for double-byte code pages

| **Explanation:** An error occurred while processing the AFP file. Double-byte code pages are not supported.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Apply the PTF for the latest APAR. If the problem persists, contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00131W Page segment requires MPS structured field

| **Explanation:** An error occurred while processing the AFP file. The specified AFP data file contains an invalid Map Page Segment (MPS) structured field, the field is missing, or the field is incorrectly formatted.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00132W Too many MGO

| **Explanation:** An error occurred while processing the AFP file. More than one Map Graphic Object (MGO) structured field was found when the transform was processing an AFP object in the AFP data file.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

Automation: Not applicable.

AOK00133W Too many GDD

Explanation: An error occurred while processing the AFP file. More than one Graphic Data Descriptor (GDD) structured field was found when the transform was processing an AFP object in the AFP data file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00134W Unsupported GOCA

Explanation: An error occurred while processing the AFP file. Graphics Object Content Architecture (GOCA) objects are not supported in page segments.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00135W Too many MBC

Explanation: An error occurred while processing the AFP file. More than one Map Bar Code (MBC) structured field was found when the transform was processing an AFP object in the AFP data file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00136W Too many BDD

Explanation: An error occurred while processing the AFP file. More than one Bar Code Data Descriptor (BDD) structured field was found when the transform was processing an AFP object in the AFP data file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00137W Unknown IOCA function set

Explanation: An error occurred while processing the AFP file. The specified AFP data file contains unknown Image Object Content Architecture (IOCA) function sets.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00138W Unknown IOCA compression, image ignored

Explanation: An error occurred while processing the AFP file. The specified AFP data file contains a method for compressing the Image Object Content Architecture (IOCA) object that is not supported.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00139W Unknown IOCA self-defining field for FS10

Explanation: An error occurred while processing the AFP file. The specified AFP data file contains an Image Object Content Architecture (IOCA) function set, FS10, that is not supported.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00140W Unsupported BCOCA

Explanation: An error occurred while processing the AFP data file. Bar Code Object Content Architecture (BCOCA) objects are not supported in page segments.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS

| Module: Not applicable

| Routing code: Not applicable

| Descriptor code: Not applicable

| Automation: Not applicable

| **AOK00141W Too many X'43' Triplets**

| **Explanation:** An error occurred while processing the
| AFP file. More than one X'43' triplet in a structured
| field was found when the transform was processing an
| AFP object in the AFP data file.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00142W Too many X'4B' Triplet**

| **Explanation:** An error occurred while processing the
| AFP file. More than one X'4B' triplet in a structured
| field was found when the transform was processing an
| AFP object in the AFP data file.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or

| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00143W Too many X'4C' Triplets**

| **Explanation:** An error occurred while processing the
| AFP file. The transform found more than one X'4C'
| triplet in a structured field. This is not permitted.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00144W Too many X'04' Triplet**

| **Explanation:** An error occurred while processing the
| AFP file. The transform found more than one X'04'
| triplet in a structured field while processing an AFP
| object in the AFP data file.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00145W Overlay size not supported

Explanation: An error occurred while processing the AFP file. The size of the overlay object is not valid or is not supported.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00146W Unsupported GOCA command

Explanation: An error occurred while processing the AFP file. The AFP data file contains a Graphics Object Content Architecture (GOCA) command that is not supported.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00147W Invalid GOCA command

Explanation: An error occurred while processing the AFP file. An unknown Graphics Object content Architecture (GOCA) command or a GOCA command with an incorrect specification or format was found.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00148W GOCA command is missing data

Explanation: An error occurred while processing the AFP file. The required data for processing a Graphics Object content Architecture (GOCA) command is missing or incorrectly formatted.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or

PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00149W Unsupported GOCA parameter

Explanation: An error occurred while processing the AFP file. The transform found an incorrect or unsupported Graphics Object content Architecture (GOCA) parameter for the invoked GOCA command.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00150W Too many MCF2

Explanation: An error occurred while processing the AFP file. More than one Medium Finishing Control (MFC) structured field was found when the transform was processing an AFP object in the AFP data file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00151W Missing Medium Map

Explanation: An error occurred while processing the AFP file. The specified AFP data file does not contain a valid medium map, the medium map is missing, or it is incorrectly formatted.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00152W IOCA mapping option not supported, image ignored

Explanation: An error occurred while processing the AFP file. The AFP data file contains an Image Object Content Architecture (IOCA) mapping option that is not supported.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00153W IOCA decompression failed, image ignored**

| **Explanation:** An error occurred while extracting the Image Object Content Architecture (IOCA) object in the AFP file. The specified AFP data file contains a method of compressing the IOCA object that is not supported.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00154W IOCA function set not supported**

| **Explanation:** An error occurred while processing the AFP file. The specified AFP data file contains Image Object Content Architecture (IOCA) function sets that are not supported.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00155W MMC code not supported**

| **Explanation:** An error occurred while processing the AFP file. The AFP data file contains Medium Modification Control code that is not supported.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00156W MMC value not supported**

| **Explanation:** An error occurred while processing the AFP file. The AFP data file contains a Medium Modification Control value that is not supported.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00157W Number of MMC overlay ids exceed limit

Explanation: An error occurred while processing the AFP file. The number of MMC overlay IDs exceeds the maximum number the transform allows.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00158W Number of MMC text suppressions exceeds limit

Explanation: An error occurred while processing the AFP file. The number of MMC text suppressions exceeds the maximum number the transform allows.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00159W Character rotation metrics do not exist

Explanation: An error occurred while processing the AFP file. The AFP data file does not contain character rotation metrics.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00161W Unsupported IOCA self-defining field for FS11

Explanation: An error occurred while processing the AFP file. The function set 11 self-defining field in the AFP data file is not supported.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00162W IM1 image rotation unsupported

| **Explanation:** An error occurred while processing the
| AFP file. The image rotation value found in the IM1
| object is not supported.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00163W GOCA coordinate system unsupported

| **Explanation:** An error occurred while processing the
| AFP file. The coordinate system used in the Graphics
| Object Content Architecture (GOCA) object is not
| supported.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

**AOK00164W Unsupported IOCA self-defining field
for FS10**

| **Explanation:** An error occurred while processing the
| AFP file. The function set 10 self-defining field in the
| AFP data file is not supported.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00165W Character set rotation not supported

| **Explanation:** An error occurred while processing the
| AFP file. The value of the character set rotation is not
| supported.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00166W Overlay rotation unsupported

| **Explanation:** An error occurred while processing the
| AFP file. The value of the overlay object rotation is not
| supported.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00167W character set is missing data in FNN

| **Explanation:** An error occurred while processing the
| AFP file. The AFP data file does not contain valid
| character set data in the Font Name Map (FNN)
| structure, the character set data is missing, or it is
| incorrectly formatted.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00168W PFB fontname parameter is missing in FNG

| **Explanation:** An error occurred while processing the
| AFP file. The AFP data file does not contain a valid
| Printer Font Binary (PFB) font name parameter in the
| Font Patterns (FNG) structured field, the PFB font
| name parameter is missing, or it is incorrectly
| formatted.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00169W Unsupported IOCA self-defining field for FS45

| **Explanation:** An error occurred while processing the
| AFP file. The function set 45 self-defining field in the
| AFP data file is not supported.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00170W Error occurred while processing FS45 JPEG image data

| **Explanation:** An error occurred while compressing or
| extracting FS45 JPEG image data.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00171W PFB fontname parameter is missing in FNG

| **Explanation:** An error occurred while processing the
| AFP file. The AFP data file does not contain a valid
| Print Font Binary (PFB) encoding parameter in the Font
| Patterns (FNG) structured field, the PFB encoding
| parameter is missing, or it is incorrectly formatted.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or

| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00172W Missing Data Map

| **Explanation:** An error occurred while processing the
| AFP file. The specified AFP data file does not contain a
| valid Data Map, the Data Map is missing, or it is
| incorrectly formatted.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Ensure that the correct page definition
| has been specified. If the page definition is correct,
| contact an IBM service representative.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00173W Error with outline font data in FNG

| **Explanation:** An error occurred while processing the
| data for an outline character set in the Font Patterns
| (FNG) structured field.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a
| valid AFP file. If the file is not valid or it is truncated
| or corrupted, get a new copy of the AFP file.
| Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00174W IOCA unitbase not supported, image ignored**

| **Explanation:** An error occurred while processing the AFP file. The unit base value used to compress Image Object Content Architecture (IOCA) objects in the AFP data file is not supported.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Make sure that the AFP data file is a valid AFP file. If the file is not valid or it is truncated or corrupted, get a new copy of the AFP file. Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00197I Preceding error occurred in/after** *afpcmd* **at offset** *doc_offset* **(page =** *pagenum***) in** *afpfile*

| **Explanation:** This message provides information about the location of the error in the document.

| *afpcmd*
| The AFP command being interpreted. This might be an AFP structured field such as "Begin Page" or, if no specific structured field is applicable, a logical description such as "Record Data".

| *afpfile*
| The external file name of the data being processed when the error occurred.

| *doc_offset*
| The byte offset within the input document where the error occurred (this might be a resource).

| *pagenum*
| The logical page number within the input document where the error occurred.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Refer to the preceding error description for the appropriate action to take.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00198I Preceding AFP error occurred within** *afpcmd*

| **Explanation:** This message provides additional information about the location of the error in the document's logical structure. If the error occurred in a logically nested AFP sequence, this message provides information about the structured fields. You might see this message more than once. In the message text:

| *afpcmd*
| The AFP command being interpreted. This might be an AFP structured field such as "Begin Page" or, if no specific structured field is applicable, a logical description such as "Record Data".

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Refer to the preceding error description for the appropriate action to take.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00199E   S370 Packed Decimal field error (S0C7) field length *length* **value** *field*

Explanation: An S370 Packed Decimal error occurred in a data field (also called an S0C7 abend), where:

length
>   Length of the Packed Decimal field.

field
>   Contents of the Packed Decimal field in hexadecimal.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify the data field contents and length.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00202E   Invalid option - *option_value*

Explanation: The command you are running has an invalid parameter, too many parameters, or not enough parameters. In the message text, *option_value* is the value of the parameter that is not valid.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: See Chapter 2, "Using transforms," on page 21 for information about the command parameter. Select the correct parameters and run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00204E   Unable to open *filetype* file for read *filename* **error(***error_number***,***reason***,***message***).**

Explanation: The transform cannot open an input or resource file. The message might display **error(***error_number***,***reason***,***message***)**. In the message text:

error_number
>   The number of the error.

filename
>   The name of the file.

filetype
>   The type of file: input or resource.

message
>   A description of the error.

reason
>   The error reason code.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: If provided, use the error information to determine the problem. See Chapter 5, "Diagnosing errors," on page 151 for more information.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00204W Unable to open *filetype* file for read *filename* **error(***error_number***,***reason***,***message***).**

Explanation: The transform cannot open an input or resource file. The message might display **error(***error_number***,***reason***,***message***)**. In the message text:

error_number
>   The number of the error.

filename
>   The name of the file.

filetype
>   The type of file: input or resource.

message
>   A description of the error.

reason
    The error reason code.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: If provided, use the error information to determine the problem. See Chapter 5, "Diagnosing errors," on page 151 for more information.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00215E **The** *parameter* **parameter required on** *command* **statement**

Explanation: A required parameter is missing from the command statement. In the message text:

command
    The name of the command statement.

parameter
    The name of the missing parameter.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Reissue the command statement with the missing parameter.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00215W **The** *parameter* **parameter required on** *command* **statement**

Explanation: A required parameter is missing from the command statement. In the message text:

command
    The name of the command statement.

parameter
    The name of the missing parameter.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00216E ****CRITICAL ERROR Cannot Open converted substituted font file** *file*

Explanation: An internal error prevented the transform from opening the default font file, *file*, for the converted font.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the error message from the called functions for more information about the failure. Ensure that the default converted font file is not corrupted or deleted. If it is, obtain a new copy of the file and run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00220E Unable to open output pcl file *filename* **error(***error_number***,***reason***,***message***).**

Explanation: The transform cannot open an output PCL file. In the message text:

error_number
> The number of the error.

filename
> The name of the PCL output file.

message
> A description of the error.

reason
> The error reason code.

System action: The transform ends without creating an output file.

User response: Use the error information to determine the problem. See Chapter 5, "Diagnosing errors," on page 151 for more information.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00237E Error *error_number***,** *message* **while closing output file** *file*

Explanation: An error occurred while the transform was closing the output file. In the message text:

error_number
> The error reason code.

file
> The name of the output file.

message
> A description of the error.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Use the error descriptor message and the reason code to determine the problem.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00237W Error *error_number***,** *message* **while closing output file** *file*

Explanation: An error occurred while the transform was closing the output file. In the message text:

error_number
> The error reason code.

file
> The name of the output file.

message
> A description of the error.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Use the error descriptor message and the reason code to determine the problem.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00242E Error parsing RAT file, corrupt data detected

Explanation: The transform cannot parse the resource access table (RAT) file because it is corrupt.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Confirm that the

required RAT file is installed and valid. If it is not, contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00300E **"***message***"**

Explanation: The message text, *message*, describes the error that occurred.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the message number or message description to determine the problem or contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00300W **"***message***"**

Explanation: The message text, *message*, describes the error that occurred.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the message number or message description to determine the problem or contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00307W Cannot dump records with record delimiter *record_delim* **from file** *file*

Explanation: The file records could not be dumped because of an incorrect record delimiter. In the message text:

file
The name of the file.

record_delim
The type of record delimiter in the file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: See Chapter 5, "Diagnosing errors," on page 151 for more information.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00321E Image compression error *error_code*

Explanation: An error occurred during compression of output. In the message text, *error_code* is the number of the error code.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Use the error code to determine the problem.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00321W Image compression error *error_code*

Explanation: An error occurred during compression of output. In the message text, *error_code* is the number of the error code.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Use the error code to determine the problem.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00326W The TrueType file *file* **was not found for font** *font*

Explanation: The font file for a TrueType font could not be found in the TTFONTLIB subdirectory. In the message text:

file
 The name of the TrueType font file.

font
 The name of the TrueType font.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure the file name and path are correct and the font name is valid. Make sure a FILENAME is specified on the TTFONT statement in the font table. The file name is the base file name for the TrueType font files for the font. Correct the font table entry if needed and run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00327W The TrueType file *file* **open failed**

Explanation: The TrueType font file, *file*, could not be opened. The file might be missing, in the wrong location, or have incorrect security permissions.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Determine why the file cannot be opened and correct the error.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00328W Error returned from Scalar Font subsystem API in file *file_module* **line** *scrline***: ERROR[***error_number***] -** *message***.**

Explanation: The TrueType subsystem API returned an error. In the message text:

error_number
 The hexadecimal error code from the TrueType subsystem.

file_module
 The name of the module where the error occurred.

message
 The description of the error from the TrueType subsystem.

scrline
 The line number in the module where the error occurred.

System action: The transform ends or attempts to

continue based on the AOP_FAIL_ON_ERROR
environment variable setting in **aopxfd.conf**, the **Fail
on error** field in the printer definition, or the
fail-on-transform-error job attribute that is in effect.

User response: Use the information in the message to
determine the problem. See Chapter 5, "Diagnosing
errors," on page 151 for more information. If a resource
is missing, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or
PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00329W Multiply defined code point *codepoint* **in
scaleable font** *font*

Explanation: The code point in the font has already
been defined. In the message text:

codepoint
    The code point of the font being redefined.

font
    The name of the font.

System action: The transform ends or attempts to
continue based on the AOP_FAIL_ON_ERROR
environment variable setting in **aopxfd.conf**, the **Fail
on error** field in the printer definition, or the
fail-on-transform-error job attribute that is in effect.

User response: Verify that the output looks correct. If
it does not, contact your system programmer.

System programmer response: Contact an IBM service
representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or
PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00330E In font *font*, **glyph** *glyphname* **has an
invalid path**

Explanation: The glyph in the specified font has an
incorrect path. In the message text:

font
    The name of the font.

glyphname
    The name of the glyph.

System action: The transform ends or attempts to
continue based on the AOP_FAIL_ON_ERROR
environment variable setting in **aopxfd.conf**, the **Fail
on error** field in the printer definition, or the
fail-on-transform-error job attribute that is in effect.

User response: Verify that the font file is valid and
then run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or
PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00330W In font *font*, **glyph** *glyphname* **has an
invalid path**

Explanation: The glyph in the specified font has an
incorrect path. In the message text:

font
    The name of the font.

glyphname
    The name of the glyph.

System action: The transform ends or attempts to
continue based on the AOP_FAIL_ON_ERROR
environment variable setting in **aopxfd.conf**, the **Fail
on error** field in the printer definition, or the
fail-on-transform-error job attribute that is in effect.

User response: Verify that the font file is valid and
then run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or
PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00331W In font *font*, **glyph** *glyphname* **has a bad width** *old_width*, **reset to** *new_width*

Explanation: The glyph in the specified font has a bad width. The bad width has been reset to a new width. In the message text:

font
The name of the font.

glyphname
The name of the glyph.

new_width
The new width that the glyph is set to.

old_width
The old width of the glyph, which is bad.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify that the output looks correct. If it does not, verify that the font file is valid and then run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00332W Error loading glyph for (*font***) at index** *index*, **skipped.**

Explanation: An error occurred while the transform was loading a glyph. The scaleable font format subsystem API returned a warning, where:

font
The name of the font file.

index
The glyph index number.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the expected glyphs

appear correctly in the output. If they do not, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00333W Guessing italic angle *italic_angle* **for font** *font*.

Explanation: The specified font appears to be italic, so the transform assigns an italic angle to the font and overrides the font header information. In the message text:

font
The name of the font.

italic_angle
The italic angle that the transform guesses the font should be.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the font appears correctly in the output. If is does not, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00334W Error parsing glyph *glyphname* **information in font** *font*.

Explanation: An error was encountered parsing the information for the glyph in the specified font. In the message text:

font
    The name of the font.

glyphname
    The name of the glyph.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify that the font file is valid and then run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00335E Error writing charstring information for font *font* to *embedded_file*.

Explanation: An error was encountered when writing character string information for the specified font to an embedded font file. In the message text:

embedded_file
    The name of the embedded font file.

font
    The name of the font.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify that the font file is valid and then run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00337E Failed to read the expected amount of compressed record specified

Explanation: The expected amount of compressed data was not read.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify that the AFP file is valid and run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00338E Error loading glyph for [*font*] at index *index*: character code out of range (256), skipped.

Explanation: An error occurred while the transform was loading a glyph for the specified font. Only glyphs with a character code between 0 and 255 are supported. The scaleable font format subsystem API returned a warning, where:

font
    The name of the font.

index
    The glyph index number.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure the expected glyphs appear correctly in the output. If they do not, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00339E Error loading glyph for [*font*] at index *index*: unsupported format, skipped.

Explanation: An error occurred while the transform was loading a glyph for the specified font. Glyph data contains unsupported data. The scaleable font format subsystem API returned a warning, where:

font
> The name of the font.

index
> The glyph index number.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure the expected glyphs appear correctly in the output. If they do not, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00340W Error loading scalable font [*font*], appears to be corrupt: *reason*.

Explanation: An error occurred because the specified font could not be loaded. A warning was returned from the scaleable font format subsystem API, where:

font
> The name of the font.

reason
> An explanation of the error that was encountered.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00344W Invalid image property: *property*.

Explanation: An error occurred when the transform was processing an image property. In the message text, *property* is the image property.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00346W *device_type* failed to open file *file*.

Explanation: The transform driver was not able to open the specified file.

device_type
> The name of the device.

file
> The name of the file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify that you entered the correct file name and directory path and check the file and directory permissions. If the file is valid, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00347W *device_type* **failed to write file** *file***.**

Explanation: The transform driver was not able to write to the specified file.

device_type
    The name of the device.

file
    The name of the file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify that you entered the correct file name and directory path and check the file and directory permissions. If the file is valid, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00348W No output device driver initialized.

Explanation: No output driver is specified.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Specify an output driver.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00349W No glyphs initialized in font *font***.**

Explanation: The specified font, *font*, does not have any glyphs defined.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify that the correct font is specified and make sure all glyphs are defined. If the font is correct and all glyphs are defined, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00350W Call failed during Canonical Font base information initialization.

Explanation: The font specified has invalid or missing properties.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify that the font is correct. If it is, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00351W Raster image processing transformation failed.**

| **Explanation:** The transform was not able to process a raster image.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Verify that the raster image is correct. If it is, contact an IBM service representative.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00352E **ERROR** Page log is using** *buffer_count* **TLDL buffers, exceeding maximum allowed of** *buffer_max*

| **Explanation:** The internal page buffer is greater than the maximum number of allowed TLDL buffers. This error might occur when attempting to transform a very complex page or when an underlying error condition prevents the transform from ejecting a page. If a page eject cannot be done, all the document contents accumulate on a single page. In the message text:

| *buffer_count*
| The number of drawing orders that have been queued to the current page.

| *buffer_max*
| The maximum number of drawing orders that can be queued to a single page.

| **System action:** The transform ends with a non-zero completion code.

| **User response:** Contact an IBM service representative.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or

| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00410W Unable to process AFP command.**

| **Explanation:** The AFP command is recognized but there is no code to processs it.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK00414W Error reading AFP soft font format.**

| **Explanation:** The transform does not support this soft font format.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK00418W Soft font called but not available.

Explanation: A downloaded soft font was called but the font does not exist in the file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00432I   Formdef resource not specified in config file.

Explanation: A form definition has not been specified by the user or the transform configuration. This might cause an undesirable output.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: If the output is undesirable, specify a form definition by using either the form-definition job attribute or the AOP_FORMDEF environment variable in aopxfd.conf.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00432W *Resource_specific_warning_message*.

Explanation: The transform could not locate or successfully interpret the AFP resource name and type specified in the message text. Output fidelity might be affected.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the resource is valid and that the resource library for external resources is accessible to the transform. Otherwise, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00434I   An IOCA G4 MMR image decompression error occurred, successfully switched to unpadded processing.

Explanation: An Image Object Content Architecture (IOCA) G4 MMR image extraction error occurred.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: The warning might indicate an undesirable output. If the output is undesirable, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Infoprint Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00435W Input data contains a skip_to_channel
number carriage control byte, but that
channel is not mapped by data map
dmapname

Explanation: The line mode input data contains a record with a skip_to_channel_*number* carriage control byte, but channel *number* has not been mapped by any Line Descriptor (LND) structured field in the currently active data map. The record is processed as if it had a space_one_line carriage control byte. This might cause output to be incorrectly positioned. In the message text:

number
>   The channel number of the skip_to_channel carriage control byte.

dmapname
>   The name of the current data map in the active page definition.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Do one of these:

- Correct the current page definition to correctly map the carriage control byte.
- Specify a different page definition that correctly maps the carriage control byte.
- Correct the input data and remove instances of the unsupported carriage control byte.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Infoprint Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00436W In data map _dmapname_, the new LND
(id=_lndno_) attempts to set a 'relative
baseline position' but its orientation
does not match the current reference
orientation

Explanation: While processing line-mode input, the transform encountered a Line Descriptor (LND) structured field in the current data map. The LND specifies relative baseline positioning; however, the text orientation does not match the orientation of the reference LND it is being positioned relative to, which is not permitted. The text is printed at the current location and is not repositioned, which might result in

incorrect output. In the message text:

dmapname
>   The name of the current data map in the active page definition.

lndno
>   The identifier of the LND where the orientation mismatch was detected.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the page definition and then run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Infoprint Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00437W Input record with recordid '_record_id_'
cannot be matched to an RCD in
datamap _dmapname_. The input record
will be ignored.

Explanation: While processing record-mode input, the transform encountered an input record whose record ID could not be matched to a Record Descriptor (RCD) in the active data map. The input record is dropped and processing continues with the next input record. In the message text:

dmapname
>   The name of the data map in the active page definition.

record_id
>   The record identifier of the record in error.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the page definition by adding an appropriate LAYOUT definition or correct the input data by eliminating the unmatched records. Then, run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Infoprint Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK00601W PDF file contains an invalid indirect object reference in record *bad_record*

Explanation: The PDF parser detected an error in the input PDF file. An indirect object reference does not have an object number field. In the message text:

bad_record
    The record text that has a bad indirect reference.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: The PDF file might be corrupt, so recreate the PDF file, look at it in a viewer, and then see if you can find the error.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Infoprint Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK01999E Driver *driver* **requested abnormal shutdown on page** *pagenum* *error_code***,***reason*

Explanation: A shutdown was requested because an error occurred in one of the output drivers on a page in the document. In the message text:

driver
    The name of the driver that encountered the error.

error_code
    The error return code for the error that occurred.

pagenum
    The page number in the document where the error occurred.

reason
    An explanation of the error and why the driver requested the shutdown.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Look in the error log for previous messages that might provide more information about the error.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK01999W Driver *driver* **requested abnormal shutdown on page** *pagenum* *error_code***,***reason*

Explanation: A shutdown was requested because an error occurred in one of the output drivers on a page in the document. In the message text:

driver
    The name of the driver (PCL, PDF, or PS) that encountered the error.

error_code
    The error return code for the error that occurred.

pagenum
    The page number in the document where the error occurred.

reason
    An explanation of the error and why the driver requested the shutdown.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Look in the error log for previous messages that might provide more information about the error.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK02344W **The font character** *bad_char* **for PSFONT font** *psfont* **mapped from font** *source_font* **character** *source_char* **has no AFM entry**

Explanation: An error occurred because a character in the output has not been defined in the Adobe Font Metrics (AFM) file. The font tables are most likely in error. In the message text:

bad_char
     The hexadecimal code of the missing character.

psfont
     The PostScript font for which the AFM file is missing a character.

source_char
     The hexadecimal code of the character in the file that is being mapped.

source_font
     The source font that is being mapped to the PostScript font.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: In the symbol set or Unicode font tables for *psfont* and *source_font*, look at the entries for *bad_char* and *source_char* to determine why the character is not defined in the AFM file for the PostScript font. Then correct the table entries and run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Infoprint Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK02500E **A critical font error occurred. This is an internal program error.**

Explanation: An internal error occurred with a font.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK02501W **Codepoint** *codepoint* **has not been mapped for font:** *font***.**

Explanation: An error occurred because a requested code point has not been defined for the specified font. In the message text:

codepoint
          The name of the requested code point.

font   The name of the font.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Review the data stream and compare it with the output to see what characters are missing. If you cannot correct the error, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK02502W Glyph names are not available for *font*

Explanation: The font named *font* does not contain glyph names, which might effect character lookups and mappings.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK02503E Unable to associate data with compound font *font*.

Explanation: An internal error has occurred while processing the font named *font*. Binary data that was mapped or embedded in the data stream could not be correctly associated with a font specified within the data stream.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK02504E Unable to find data metrics for node associated with current font metrics for compound font *font*.

Explanation: An internal error has occurred while processing the font named *font*. Font metrics specified in the data stream could not be correctly associated with a font instance.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK02900E No Device Unit Control Block for device *device* **or default** *default*.

Explanation: The device unit control block is unavailable. In the message text:

default   The default name for the device unit control block.

device   The name of the device unit control block.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK02901E BARR S/370 Header invalid
HB1HB2HB3HB4

Explanation: The BAR S/370 Header is not valid. The message displays the 4-byte hexadecimal header.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK02902E Append is only supported for MEMFILEs

Explanation: The append is only valid for MEMFILEs.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03002E Unable to find *dict_key* **in dictionary for object** *object_number*.

Explanation: The transform could not find the dictionary key for an object in a PDF file. The PDF file might be invalid or corrupted. In the message text:

dict_key
      The missing dictionary key.

object_number
      The number of the object in the PDF file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify that the PDF file is valid. If it is not, rerun the transform with a valid PDF file. Otherwise, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03003E Invalid Indirect Reference in PDF file.

Explanation: The transform found an error while reading a PDF object container in the AFP file. The PDF file might be invalid or corrupted.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify that the PDF file is valid. If it is not, rerun the transform with a valid PDF file. Otherwise, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03004E Invalid command *command* **in a PDF file.**

Explanation: The transform found an error while reading a PDF object container in the AFP file. The PDF file might be invalid or corrupted. In the message text, *command* is the name of the invalid command.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify that the PDF file is valid. If it is not, rerun the transform with a valid PDF file. Otherwise, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03005W PDF xref table is invalid or missing

Explanation: The transform found an error while reading a PDF object container in the AFP file. The PDF file might be invalid or corrupted.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify that the PDF file is valid. If it is not, rerun the transform with a valid PDF file. Otherwise, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03006W PDF page CropBox is not equal to MediaBox

Explanation: The transform found an unsupported configuration while reading a PDF object container in the AFP file: the CropBox was not equal to the MediaBox. The document contents might not appear the same as those provided by other viewing applications.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: None.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03007W PPI Warning *error_type*, *error_detail*

Explanation: While the transform was reading a PDF object container in the AFP file, a problem occurred with PDF parsing or interpretation. The PDF file might be corrupted. In the message text:

error_detail
    Details about the warning.

error_type
    The type of warning, such as "syntaxerror" or "typecheck".

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify that the PDF file is valid. If it is not, rerun the transform with a valid PDF file. Otherwise, contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03201E *LE_message_text*

Explanation: The transform was unable to successfully read input from the connected socket session. *LE_message_text* is the error message text provided by Language Environment runtime.

Error code 140, (EPIPE), described as "Broken Pipe" in the message, can occur when communication has been lost with the application requesting the transform. This is not a problem with the transform; instead, the application might have timed out or been cancelled by an operator or the system.

System action: The transform ends.

User response: Contact your system programmer.

System programmer response: See *z/OS UNIX System Services Messages and Codes* for a description of socket errors.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03202E *LE_message_text*

Explanation: The transform was unable to successfully write output to the connected socket session. *LE_message_text* is the error message text provided by Language Environment runtime.

Error code 140, (EPIPE), described as "Broken Pipe" in the message, can occur when communication has been lost with the application requesting the transform. This is not a problem with the transform; instead, the application might have timed out or been cancelled by an operator or the system.

System action: The transform ends.

User response: See *z/OS UNIX System Services Messages and Codes* for a description of socket errors.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03203E **Password exit,** *dll_name*, **did not load correctly. The dlopen function failed with error** *LE_message_text*

Explanation: The transform was unable to successfully load the PDF Password Exit DLL. This prevents the transform from determining what passwords to use in the output PDF. In the message text:

dll_name
    The path name of the password exit being loaded.

LE_message_text
    The load error message text returned from Language Environment.

System action: The transform ends.

User response: See "Writing a Password exit" on page 98 to verify that you have correctly followed the instructions for creating and installing a password exit.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03204E **Unable to locate required entry point in the PDF password exit DLL**

Explanation: The transform was unable to successfully call the PDF Password Exit function. This prevents the transform from determining what passwords to use in the output PDF.

System action: The transform ends.

User response: See "Writing a Password exit" on page 98 to verify that you have correctly followed the instructions for creating and installing a password exit. Otherwise, contact your system programmer.

System programmer response: Review the DLL and determine why the required entry point is not accessible.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03205E** **PDF Password Exit 'init' returned:**
error_text. *error_text*

| **Explanation:** The transform was unable to successfully
| call the PDF Password Exit 'init' function. This prevents
| the transform from determining what passwords to use
| in the output PDF. The original error was detected
| within the password DLL exit itself. In the message
| text, *error_text* is the error message returned from the
| DLL 'init' function.

| **System action:** The transform ends.

| **User response:** Correct the error specified in the
| message. See "Writing a Password exit" on page 98 to
| verify that you have correctly followed the instructions
| for creating and installing a password exit.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03206E** **PDF Password Exit 'query' returned:**
error_text

| **Explanation:** The transform was unable to successfully
| call the PDF Password Exit 'query' function. This
| prevents the transform from determining what
| passwords to use in the output PDF. The original error
| was detected within the password DLL exit itself. In
| the message text, *error_text* is the error message
| returned from the DLL 'query' function.

| **System action:** The transform ends.

| **User response:** Correct the error specified in the
| message. See "Writing a Password exit" on page 98 to
| verify that you have correctly followed the instructions
| for creating and installing a password exit.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03207E** **Add the password for the** *id_type*
identifier *id_value* **to the Password exit**
dll_name

| **Explanation:** A password must be returned for each
| identifier that is provided; however, the password exit
| DLL did not return a corresponding password for the
| identifier displayed in the message. In the message text:

| *dll_name*
| The path name of the password exit DLL.

| *id_type*
| The owner or user of the password.

| *id_value*
| The identifier provided for the owner or user.

| **System action:** The transform ends.

| **User response:** Check the password exit or its
| database to ensure that a password can be returned for
| the specified identifier. See "Writing a Password exit"
| on page 98 to verify that you have correctly followed
| the instructions for creating and installing a password
| exit.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03208E** **Change either the owner password or
the user password. The passwords must
be different.**

| **Explanation:** A password must be different for an
| owner identifier and a user identifier; however, the
| password exit DLL returned the same password for an
| owner and a user. Either the same identifier was used
| for both the **pdf-owner-identifier** and
| **pdf-user-identifier** attributes or the password exit
| returned the same value for different identifiers.

| **System action:** The transform ends.

| **User response:** Change one of the passwords being
| requested. See "Writing a Password exit" on page 98 to
| verify that you have correctly followed the instructions
| for creating and installing a password exit.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03209E** **To use PDF encryption, set the**
| **environment variable AOP_ENCRYPT to**
| **Yes in the transform configuration file.**

| **Explanation:** The user specified encryption related job
| attributes; however, the transform is not enabled for
| encryption because the configuration environment
| variable AOP_ENCRYPT is set to NO.

| **System action:** The transform ends.

| **User response:** If encryption is not required, remove
| the encryption related attributes. If encryption is
| required, set the environment variable AOP_ENCRYPT
| to YES in the transform configuration file and then
| restart the Infoprint Server Transform Manager.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03210E** **To select protected actions for PDF**
| **encryption, specify the owner password.**

| **Explanation:** The user has specified values in the
| **pdf-protect** job attribute, but has not provided a
| **pdf-owner-identifier** attribute. In order for the
| transform to apply PDF protection restrictions, an
| owner encryption password must be specified.

| **System action:** The transform ends.

| **User response:** Specify an owner identifier in the
| **pdf-owner-identifier** job attribute or ask the
| administrator to specify an owner identifier in the
| printer definition. Then resubmit the request.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03211E** **Specified Encryption Key size of** *key_size*
| **bits is unsupported**

| **Explanation:** Encryption has been requested for a PDF
| transform, but the transform does not support the
| specified encryption key size. In the message text,
| *key_size* is the caller specified encryption key size.

| **System action:** The transform ends.

| **User response:** Correct the supplied PDF encryption
| key size and resubmit then resubmit the request.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03220E** **Unable to open file** *file***.** *LE_message_text*

| **Explanation:** The transform is unable to open a
| temporary file used to stage the transformed output. In
| the message text:

| *file*
| The name of the file.

| *LE_message_text*
| The open error message text returned from
| Language Environment.

| **System action:** The transform ends.

| **User response:** Review the message returned by the
| operating system and correct that error.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03221E** *LE_message_text*

| **Explanation:** An error occurred while the transform was attempting to read the temporary file containing the generated output. *LE_message_text* is the error message text provided by Language Environment runtime.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Examine the **stderr** error log to if an error occurred previously during transformation. Review the message returned by the operating system and correct that error.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03223E** *LE_message_text*

| **Explanation:** The transform received an error while closing the temporary staging file. *LE_message_text* is the error message text provided by Language Environment runtime.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** No action is required. However, you might need to erase the temporary file.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03227E** **Transform Configuration File** *file* **is inaccessible.** *LE_message_text*

| **Explanation:** The transform was unable to open its initial configuration file. The file might be missing or installed in an incorrect location, or the file permissions might be incorrect. In the message text:

| *file*
| The name of the transform configuration file.

| *LE_message_text*
| The error message text returned from Language Environment.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Install the configuration file in the correct directory or correct the file and directory permissions. Otherwise, contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03228E** **Unable to recognize the caller supplied parameter data.**

| **Explanation:** The transform could not validate runtime parameter data exchanged between internal components. This error indicates mismatched product components and is most likely due to an unsuccessful installation attempt or a failed maintenance application.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Contact an IBM service representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03229E   Unable to Register Socket-based I/O Driver

Explanation: The transform failed to establish its socket I/O driver for communication with the calling client address space. This is an internal error.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative and provide the diagnostic information.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03230E   Unable to initialize transform API, see stderr contents for details

Explanation: The transform failed to establish access to or initialize the transform-engine DLL. This is an internal error.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative and provide the diagnostic information.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03231W   Unable to open specified trace file *file*

Explanation: The transform was unable to open the trace file that was specified with the transform parameters. The specified trace file, *file*, might be an incorrect file name or location, or the file permissions might be incorrect.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Specify a different trace file name, location, or both, or correct the file permissions.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03239E   *LE_message_text*

Explanation: The transform was unable to successfully invoke the iconv() system service which is required to translate PDF encryption passwords between EBCDIC and ASCII. *LE_message_text* is the error message text provided by Language Environment runtime.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03240W AOP_MAX_RECORD_LENGTH value**
| *reclen_value* **exceeds** *limit* **of** *number*,
| **reducing to** *limit*

| **Explanation:** The value specified for the
| "AOP_MAX_RECORD_LENGTH" environment variable
| is outside the valid limits. The specified value must be
| either "max" or a numeric value from 696 to 32756.
| These limits are set by z/OS and Infoprint Server. In
| the message text:

| *number*
| A numeric value of either 696 or 32756.

| *reclen_value*
| The record length value that is outside the valid
| limits.

| *limit*
| The value of either minimum or maximum.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Correct the maximum record length
| value to prevent future warnings.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03251W Fail to recognize** *parm_name* **parameter
| value** *parm_value*

| **Explanation:** The specified runtime parameter or
| environment variable (from **aopxfd.conf**) was ignored
| because the transform could not recognize it. Some
| runtime parameters and configuration environment
| variables are specified with character tokens, such as
| YES, NO, or PRINT. The unrecognized value is not
| valid in the context in which it was specified. Values
| used for the "pdf-protect" parameter are those returned
| from the password exit DLL, which might not be those
| provided by the user. In the message text:

| *parm_name*
| The name of the runtime parameter or
| environment variable.

| *parm_value*
| The value of the runtime parameter or
| environment variable.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Correct the parameter value, restart
| the Infoprint Server Transform Manager, and run the
| transform again.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03252E Unable to set parameter** *parm_name* **with
| value** *parm_value*. *error_msg*

| **Explanation:** The transform was unable to translate a
| user-supplied parameter to its corresponding internal
| configuration parameter. This is an internal error. In the
| message text:

| *error_msg*
| The error message returned from the transform.

| *parm_name*
| The name of the user-supplied parameter.

| *parm_value*
| The value of the user-supplied parameter.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative and provide diagnostic information.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| Automation: Not applicable.

AOK03253E Too many individual *parm_name* **parameters present in value** *parm_value*

| **Explanation:** The specified parameter string contain
| too many tokens. Some runtime parameters and
| configuration environment variables (in **aopxfd.conf**)
| permit multiple tokens within their value; however,
| there might be a limit on the number of tokens that are
| accepted. Values used for the "pdf-protect" parameter
| are those returned from the password exit DLL, which
| might not necessarily be those provided by the user. In
| the message text:

| *parm_name*
| The name of the parameter.

| *parm_value*
| The value of the parameter.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Correct the parameter value, restart
| the Infoprint Server Transform Manager, and run the
| transform again.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK03254E Failed to dynamically allocate resource libraries from *dataset_list***.** *error_msg*

Explanation: The transform was unable to
dynamically allocate one or more of the specified AFP
resource libraries. All AFP resource libraries specified
with configuration environment variables, such as
AOP_FONTLIB, are dynamically allocated and, if there
are multiple libraries for a particular resource,
dynamically concatenated. The resource libraries must
be catalogued and available for a DISP=SHR allocation
at runtime. The data set names might have been
incorrectly specified or an environmental problem is
preventing their use. In the message text:

dataset_list
| The data set names of the AFP resource libraries.

| *error_msg*
| The error message that describes the failed
| dynamic allocation or concatenation attempt.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Review and correct the error run the
| transform again.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK03255E Unable to open a dynamic STOCKTABLE, filename *file* **: "***error_msg***"**

| **Explanation:** The transform was unable to open a
| temporary file to contain a dynamically generated
| STOCKTABLE, which represents the characteristics of
| the various paper types and sizes that are being used
| in the transform. The most likely cause is insufficient
| region size. In the message text:

| *error_msg*
| The error message that the transform returns after
| the failed open attempt.

| *file*
| The name of the temporary STOCKTABLE file.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Review and correct the error and then
| run the transform again.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03256E** *parm_value* **is an unsupported value for**
| **AOP_OFFSET_JOGGING**

| **Explanation:** The option found in the
| AOP_OFFSET_JOGGING environment variable,
| *parm_value*, is currently an unsupported option.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Correct the configuration parameter in
| **aopxfd.conf**, restart the Infoprint Server Transform
| Manager, and then run the transform again.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03257W Insufficient number of paper type**
| **names supplied in AOP_PAPER, using**
| **'***paper_name***'**

| **Explanation:** The AOP_PAPER environment variable
| must contain 10 paper type names, corresponding to
| AFP trays 1 through 9 and 10 or higher; however,
| AOP_PAPER contained less than 10 valid paper types.
| In the message text, *paper_name* is the paper type name
| the transform uses for the missing values: either the
| first valid paper type name or the default "letter".

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Correct the missing values.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03258W The job attribute '***attribute_name***' is**
| **unsupported in this release and is being**
| **ignored**

| **Explanation:** The user has specified a job attribute that
| is not supported in the current release of the transform.
| In the message text, *attribute_name* is the name of the
| unsupported job attribute.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Remove the unsupported job attribute
| specification.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK03259I** **Additional '***error_level***' runtime messages**
| **are being suppressed**

| **Explanation:** The number of messages issued has
| exceeded the internal threshold. The total number of
| messages issued through the caller interface is limited
| to prevent too many messages in the Infoprint Server
| common message log or in the user's console session.
| The transform determines the maximum number of
| messages issued. If the AOP_TRAILER_ERROR_PAGE
| environment variable, the trailer-transform-error-page
| job attribute, or both are set, a trailer page is created
| that contains the full list messages. In the message text,
| *error_level* is the type of messages being suppressed:
| Error, Informational, or Warning.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** See the complete set of messages in
| the transform's **stderr** file and in the trailer page, if one
| is created.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK03260E   Data transfer socket was unexpectedly closed by the remote partner

Explanation: The invoking transform client has unexpectedly closed the data transfer session. The client encountered an error, such as a program abend, that prevents it from notifying the transform of the problem.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Review error messages issued by the transform client DLL.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04100W   Bar code symbology *barcode* **not supported.**

Explanation: The bar code symbology type, *barcode*, is not supported

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04101W   The bar code check digit algorithm not supported

Explanation: The digit algorithm that checks bar codes is not supported.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04102W   Failed to suppress trailing blanks from EAN2 bar code data

Explanation: The transform failed to suppress trailing blanks from EAN Two-digit Supplemental bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the Bar Code Object Content Architecture (BCOCA) data for the EAN Two-digit Supplemental bar code data is valid. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04103W Failed to suppress trailing blanks from EAN5 bar code data

Explanation: The transform failed to suppress trailing blanks from EAN Five-digit Supplemental bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the Bar Code Object Content Architecture (BCOCA) data for the EAN Five-digit Supplemental bar code data is valid. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04104W Failed to suppress trailing blanks from EAN8 bar code data

Explanation: The transform failed to suppress trailing blanks from EAN-8 bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the Bar Code Object Content Architecture (BCOCA) data for the EAN-8 bar code data is valid. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04105W Failed to suppress trailing blanks from EAN13 bar code data

Explanation: The transform failed to suppress trailing blanks from EAN-13 bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the Bar Code Object Content Architecture (BCOCA) data for the EAN-13 bar code data is valid. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04106W Failed to suppress trailing blanks from UPC2 bar code data

Explanation: The transform failed to suppress trailing blanks from UPC—Two-digit Supplemental bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the Bar Code Object Content Architecture (BCOCA) data for the UPC—Two-digit Supplemental bar code data is valid. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04107W Failed to suppress trailing blanks from UPC5 bar code data

Explanation: The transform failed to suppress trailing blanks from UPC—Five-digit Supplemental bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the Bar Code Object Content Architecture (BCOCA) data for the UPC—Five-digit Supplemental bar code data is valid. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04108W Failed to suppress trailing blanks from UPCA bar code data

Explanation: The transform failed to suppress trailing blanks from UPC/CGPC—Version A bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the Bar Code Object Content Architecture (BCOCA) data for the UPC/CGPC—Version A bar code data is valid. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS

Module: Not applicable

Routing code: Not applicable

Descriptor code: Not applicable

Automation: Not applicable

AOK04109W Failed to suppress trailing blanks from UPCE bar code data

Explanation: The transform failed to suppress trailing blanks from UPC/CGPC—Version E bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the Bar Code Object Content Architecture (BCOCA) data for the UPC/CGPC—Version E bar code data is valid. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04110W Failed to suppress trailing blanks from USPS Intelligent Mail bar code data

Explanation: The transform failed to suppress trailing blanks from USPS Four-State - Intelligent Mail Barcode (IMB) data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Ensure that the Bar Code Object Content Architecture (BCOCA) data for USPS Four-State - IMB data is valid. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04111W *modifier* **is not a valid modifier for CODE39 bar code**

Explanation: An incorrect modifier was specified for the Code 39 (3-of-9 Code) or AIM USS-39 bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the Code 39 or AIM USS-39 bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04112W *modifier* **is not a valid modifier for CODE2OF5 bar code**

Explanation: An incorrect modifier was specified for the Industrial 2-of-5, Matrix 2-of-5 (2D bar code), Interleaved 2-of-5, or AIM USS-I 2/5 bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the Industrial 2-of-5, Matrix 2-of-5, Interleaved 2-of-5, or AIM USS-I 2/5 bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04113W *modifier* **is not a valid modifier for CODABAR bar code**

Explanation: An incorrect modifier was specified for the Codabar, 2-of-7, or AIM USS-Codabar bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the Codabar, 2-of-7, or AIM USS-Codabar bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04114W *modifier* **is not a valid modifier for POSTNET bar code**

Explanation: An incorrect modifier was specified for the POSTNET bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the POSTNET bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04115W *modifier* **is not a valid modifier for UPCA bar code**

Explanation: An incorrect modifier was specified for the UPC/CGPC—Version A bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the UPC/CGPC—Version A bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04116W *modifier* **is not a valid modifier for UPCE bar code**

Explanation: An incorrect modifier was specified for the UPC/CGPC—Version E bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the UPC/CGPC—Version E bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04117W *modifier* **is not a valid modifier for UPC2 bar code**

Explanation: An incorrect modifier was specified for the UPC—Two-digit Supplemental bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the UPC—Two-digit Supplemental bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04118W *modifier* **is not a valid modifier for UPC5 bar code**

Explanation: An incorrect modifier was specified for the UPC—Five-digit Supplemental bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the UPC—Five-digit Supplemental bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04119W *modifier* **is not a valid modifier for EAN2 bar code**

Explanation: An incorrect modifier was specified for the EAN Two-digit Supplemental bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the EAN Two-digit Supplemental bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04120W *modifier* **is not a valid modifier for EAN5 bar code**

Explanation: An incorrect modifier was specified for the EAN Five-digit Supplemental bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the EAN Five-digit Supplemental bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04121W *modifier* **is not a valid modifier for EAN8 bar code**

Explanation: An incorrect modifier was specified for the EAN-8 bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the EAN-8 bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04122W *modifier* **is not a valid modifier for EAN13 bar code**

Explanation: An incorrect modifier was specified for the EAN-13 bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the EAN-13 bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04123W *modifier* **is not a valid modifier for MSI bar code**

Explanation: An incorrect modifier was specified for the MSI (modified Plessey code) bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the MSI bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04124W *modifier* **is not a valid modifier for CODE128 bar code**

Explanation: An incorrect modifier was specified for the Code 128 or AIM USS-128 bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the Code 128 or AIM USS-128 bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04125W *modifier* **is not a valid modifier for RM4SCC bar code**

Explanation: An incorrect modifier was specified for the RM4SCC bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the RM4SCC bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04126W *modifier* **is not a valid modifier for USPS Intelligent Mail bar code**

Explanation: An incorrect modifier was specified for the USPS Four-State - Intelligent Mail Barcode (IMB) bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the USPS Four-State - IMB bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04127W *modifier* **is not a valid modifier for Data Matrix bar code**

Explanation: An incorrect modifier was specified for the Data Matrix bar code (2D bar code). In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the Data Matrix bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04128W *modifier* **is not a valid modifier for PDF417 bar code**

Explanation: An incorrect modifier was specified for the PDF417 bar code (2D bar code). In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the PDF417 bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04129W *modifier* **is not a valid modifier for QR Code bar code**

Explanation: An incorrect modifier was specified for the QR Code bar code (2D bar code). In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the QR Code bar code modifier. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04130W **Failed to create bar code symbol with empty bar code data.**

Explanation: The transform could not create a bar code symbol with empty bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the bar code object. Run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

| AOK04131W Failed to create bar code symbol because the bar code data length exceeds the system capacity.

Explanation: The transform could not create a bar code symbol because the bar code data length was greater than the system capacity.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

| AOK04132E Font *font* not available for Barcode HRI

Explanation: The font specified for the human readable interpretation (HRI) bar code, *font*, is not available.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Find the missing font, place it in the appropriate library, and run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

| AOK04132W Font *font* not available for bar code HRI

Explanation: The font specified for the human readable interpretation (HRI) bar code, *font*, is not available.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Find the missing font, place it in the appropriate library, and run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

| AOK04133W Failed to convert 10 digits to 6-digit UPC-E format.

Explanation: The transform could not convert 10 digits to 6-digit UPC/CGPC—Version E format.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the UPC/CGPC—Version E bar code object to make sure it can be converted to 6-digit UPC/CGPC—Version E format.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04134W The CODE 128 bar code check digit algorithm is not valid.

Explanation: The Code 128 or AIM USS-1288 bar code check digit algorithm is not valid. The default algorithm is being used.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code structured field and fix the check digit specification if it is not valid.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04135W Failed to calculate bar code check digit for CODE 128 bar code.

Explanation: The transform failed to calculate the bar code check digit for the Code 128 or AIM USS-1288 bar code.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04136W Invalid format of FNC1 sequence found in CODE 128 bar code data.

Explanation: The transform found an incorrect format for the FNC1 sequence in the Code 128 or AIM USS-1288 bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04137W Invalid UCC/EAN128 data found in CODE 128 bar code data.

Explanation: The transform found incorrect UCC/EAN128 data in the Code 128 or AIM USS-1288 bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04138W Invalid character found in RM4SCC bar code data.

Explanation: The transform found an incorrect character in the RM4SCC bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04139W Failed to calculate bar code check digit for RM4SCC bar code.

Explanation: The transform failed to calculate the bar code check digit for the RM4SCC bar code.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04140W Invalid check digit created for RM4SCC bar code.

Explanation: The transform created an incorrect check digit for the RM4SCC bar code.

System action: The transform ends or attempts to

continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04141W Initialization of Internal Table for USPS Intelligent Mail bar code failed.

Explanation: The transform could not initialize the Internal Table for the USPS Four State - Intelligent Mail Barcode (IMB).

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04142W Failed to encode USPS Intelligent Mail bar code.

Explanation: The transform failed to encode the USPS Four State - Intelligent Mail Barcode (IMB).

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04143W USPS Intelligent Mail bar code data is not valid.

Explanation: The USPS Four State - Intelligent Mail Barcode (IMB) is not valid.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04144W Failed to encode Data Matrix bar code.

Explanation: The transform failed to encode the Data Matrix bar code (2D bar code).

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04145W Data Matrix bar code data is not valid.

Explanation: The Data Matrix bar code (2D bar code) is not valid.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04146W Data Matrix X-dimension (BarWidth) not defined.

Explanation: The X-dimension (BarWidth) is not defined for the Data Matrix bar code (2D bar code).

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04147W PDF417 bar code data contains invalid ECI sequence.

Explanation: The PDF417 bar code (2D bar code) contains an invalid ECI sequence.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04148W Failed to encode PDF417 bar code.

Explanation: The transform failed to encode the PDF417 bar code (2D bar code).

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04149W PDF417 X-dimension (BarWidth) and or Y-dimension (BarHeight) not defined.

Explanation: The X-dimension (BarWidth), Y-dimension (BarHeight), or both are not defined for the PDF417 bar code (2D bar code).

System action: The transform ends or attempts to

continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04150W PDF417 bar code data is not valid.

Explanation: The PDF417 bar code (2D bar code) is not valid.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04151W CODE39 bar code data is not valid.

Explanation: The Code 39 (3-of-9 Code), or AIM USS-39 bar code is not valid.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK04152W Invalid character found in UPCA bar
| code data.**

| **Explanation:** The transform found an incorrect
| character in the UPC/CGPC–Version A bar code data.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Check the input bar code object and
| correct it.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK04153W UPCA X-dimension (BarWidth) is not
| valid.**

| **Explanation:** The X-dimension (BarWidth) is not valid
| for the UPC/CGPC–Version A bar code.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Check the input bar code object and
| correct it.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK04154W Invalid character found in UPCE bar
| code data.**

| **Explanation:** The transform found an incorrect
| character in the UPC/CGPC–Version E bar code data.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Check the input bar code object and
| correct it.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK04155W UPCE X-dimension (BarWidth) is not
| valid.**

| **Explanation:** The X-dimension (BarWidth) is not valid
| for the UPC/CGPC–Version E bar code.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Check the input bar code object and
| correct it.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK04156W Invalid character found in CODE128 bar code data.

Explanation: Invalid character found in CODE128 bar code data

Explanation: The transform found an incorrect character in the Code 128 or AIM USS-128 bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04157W Invalid character found in MSI bar code data.

Explanation: The transform found an incorrect character in the MSI (modified Plessey code) bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04158W Invalid character found in UPC2 bar code data.

Explanation: The UPC–Two digit Supplemental bar code data is not valid.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04159W Invalid character found in UPC5 bar code data.

Explanation: The transform found an incorrect character in the UPC–Five digit Supplemental bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04160W Invalid character found in EAN2 bar code data.

Explanation: The transform found an incorrect character in the EAN Two-digit Supplemental bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04161W Invalid character found in EAN5 bar code data.

Explanation: The transform found an incorrect character in the EAN Five-digit Supplemental bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04162W Invalid character found in EAN8 bar code data.

Explanation: The transform found an incorrect character in the EAN-8 bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04163W Invalid character found in EAN13 bar code data.

Explanation: The transform found an incorrect character in the EAN-13 bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04164W Invalid character found in 2 OF 5 bar code data.

Explanation: The transform found an incorrect character in the Industrial 2-of-5, Matrix 2-of-5, Interleaved 2-of-5, or AIM USS-I 2/5 bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04165W Invalid character found POSTNET bar code data.

Explanation: The transform found an incorrect character in the POSTNET bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04166W Invalid character found CODABAR bar code data.

Explanation: The transform found an incorrect character in the Codabar, 2-of-7, or AIM USS-Codabar bar code data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04167W Failed to add bar code symbology to the output driver.

Explanation: The transform failed to add bar code symbology to the output driver.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04168W QR Code bar code data is not valid.

Explanation: The QR Code bar code data is not valid.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04169W QR Code bar code data contains invalid ECI data.

Explanation: The QR Code bar code data contains invalid ECI data.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04170W Failed to encode QR Code bar code.

Explanation: The transform failed to encode the QR Code bar code.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04171W QR Code X-dimension (BarWidth) is not valid.

Explanation: The X-dimension (BarWidth) for the QR Code bar code is not valid.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04172W Failed to calculate the bar code check digit.

Explanation: The transform failed to calculate the bar code check digit.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04173W *modifier* **is not a valid modifier for Code 93 bar code**

Explanation: The transform found an incorrect modifier specified for the Code 93 bar code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the Code 93 bar code modifier and then run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04174W CODE93 bar code data is not valid.

Explanation: The Code 93 bar code data is not valid.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04175W Australia Post Bar Code data is not valid.

Explanation: The Australia Post Bar Code data is not valid because it might contain a character that the transform cannot encode.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04176W Australia Post Bar Code data is too short.

Explanation: The Australia Post Bar Code data is too short.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04177W Australia Post Bar Code data is too long.

Explanation: The Australia Post Bar Code data is too long.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04178W *modifier* **is not a valid modifier for Australia Post Bar Code**

Explanation: The transform found an incorrect modifier specified for the Australia Post Bar Code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the Australia Post Bar Code modifier and then run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04179W *modifier* **is not a valid modifier for Japan Postal Bar Code**

Explanation: The transform found an incorrect modifier specified for the Japan Postal Bar Code. In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the Japan Postal Bar Code modifier and then run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04180W **Japan Postal Bar Code data is not valid.**

Explanation: The Japan Postal Bar Code data is not valid. It might be too short or too long, or it might contain a character that the transform cannot encode.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04181W **MaxiCode bar code data is not valid.**

Explanation: The MaxiCode bar code (2D bar code) data is not valid.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04182W MaxiCode Bar Code data is too long,.

Explanation: The MaxiCode bar code (2D bar code) data is too long.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04183W MaxiCode bar code data contains invalid ECI sequence.

Explanation: The MaxiCode bar code (2D bar code) data contains an invalid ECI sequence.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the input bar code object and correct it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04184W Failed to encode the MaxiCode Bar Code data.

Explanation: The transform failed to encode the MaxiCode bar code (2D bar code) data.

System action: The transform ends or attempts to

continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact an IBM service representative.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04185W *modifier* is not a valid modifier for MaxiCode bar code

Explanation: The transform found an incorrect modifier specified for the MaxiCode bar code (2D bar code). In the message text, *modifier* is the identifier for the bar code modifier.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the MaxiCode bar code modifier and then run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK04186W Bar code is outside the printable area of the page.

Explanation: The transform found an incorrect position specified for the bar code.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Correct the bar code position values and then run the transform again.

| **System programmer response:** None.

| **Operator response:** Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

| **AOK06069E Font configuration file** *file* **open failed**
| (*error_number*, *reason*, *message*)

| **Explanation:** An error occurred while the transform
| was opening the font configuration file, which is
| specified with the AOP_FONTMAP_TABLE
| environment variable. The file was not opened. In the
| message text:

| *error_number*
| The number of the error.

| *file*
| The name of the font configuration file.

| *message*
| The message that describes the error.

| *reason*
| The reason code for the error.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Use the error descriptor message and
| the reason code to determine the problem. See
| Chapter 5, "Diagnosing errors," on page 151 for more
| information.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK06069W Font configuration file** *file* **open failed**
| (*error_number*, *reason*, *message*)

| **Explanation:** An error occurred while the transform
| was opening the font configuration file, which is
| specified with the AOP_FONTMAP_TABLE
| environment variable. The file was not opened. In the
| message text:

| *error_number*
| The number of the error.

| *file*
| The name of the font configuration file.

| *message*
| The message that describes the error.

| *reason*
| The reason code for the error.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Use the error descriptor message and
| the reason code to determine the problem. See
| Chapter 5, "Diagnosing errors," on page 151 for more
| information.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK06104W Cannot Find converted font file *file* **for
font** *font*

| **Explanation:** The transform could not find the
| converted font file because there was a problem
| converting the font. The default font is used instead. In
| the message text:

| *file*
| The name of the converted font file.

| *font*
| The name of the font.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail
| on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** See the explanation in accompanying messages for a description of the conversion failure.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK06105W Cannot open** *font_type* **font file** *file*

| **Explanation:** The transform could not open the converted font file. The default font is used instead. In the message text:

| *file*
| The name of the converted font file.

| *font_type*
| The name of the font type (PCL, converted, converted dim).

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** See the explanation in accompanying messages for a description of the conversion failure.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK06128W Premature end of file (***error_number*,
| *reason***) reading image resource** *resource*
| **due to** *message***.**

| **Explanation:** While the transform was reading the image resource, an error occurred when the file ended prematurely. In the message text:

| *error_number*
| The number of the I/O error.

| *message*
| The message that describes the error.

| *reason*
| The reason code that describes the error.

| *resource*
| The name of the image resource.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Use the error descriptor message *message* and the reason code *reason* to determine the problem. See Chapter 5, "Diagnosing errors," on page 151 for more information.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

| **AOK06129W Font file size** *fontlength_value* **is incorrect,**
| **should be** *fontlength***.**

| **Explanation:** The requested font file length, *fontlength_value*, is out of range. It might have been padded or truncated during file transfer. The font length according to the header should be *fontlength*.

| **System action:** The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

| **User response:** Verify the reason for the font file size difference. If the file was truncated, obtain a corrected file and run the transform again.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK06135E Memory overwrite *return_code* **for buffer** *buffer_size* **bytes at** *buffer***.**

Explanation: The transform detected a memory overwrite error before any damage was done. In the message text:

buffer
    The name of the memory control block.

buffer_size
    The size of the buffer.

return_code
    The number of bytes reading.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK06136W Memory reallocation error-buffer count negative for *buffer_size* **bytes at** *buffer***.**

Explanation: The transform detected a memory overwrite error before any damage was done. In the message text:

buffer
    The name of the memory control block.

buffer_size
    The size of the buffer.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or

PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK06137W File is too big to keep in storage.

Explanation: A font file is too large for memory.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Verify the contents and size of the font file. If it is corrupted, obtain a new copy and verify its size and contents. Then run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK07004E Error *return_code* **writing to PCL output file.**

Explanation: An I/O error with a return code number of *return_code* occurred while the transform was writing to the PCL output file.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Use the return code, *return_code*, to determine the problem. Either correct the error condition on the hard disk or point the output file parameter to another disk drive.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK07004W Error *return_code* **writing to PCL output file, error=***error_number***,***message***.**

Explanation: An I/O error occurred while the transform was writing to the PCL output file. This is mostly likely caused by a lack of space in the file system containing the **/var/Printsrv/xfd** directory and its subdirectories. In the message text:

error_number
> The operating system code that describes the error.

message
> An operating system description of the error.

return_code
> The return code number.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Check SYSLOG for messages concerning the file system containing **/var/Printsrv/xfd**.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK07006W Invalid font table command - *error_detail*

Explanation: The transform ignores the font table command because it does not recognize it or the table has a bad parameter value. In the message text, *error_detail* is a description of the font table syntax error.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Correct the name of the font table in the file specified with the AOP_FONTMAP environment variable and run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS

Module: Not applicable

Routing code: Not applicable

Descriptor code: Not applicable

Automation: Not applicable

AOK07020W Memory Deallocation error-Buffer not found for memory at *buffer***.**

Explanation: The buffer or pool was not found, causing a memory overwrite error that was detected before any damage was done. In the message text, *buffer* is the memory control block.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK07021W Invalid Character type *parm_value* **in PCL Driver.**

Explanation: The Display Field Descriptor block contains an invalid character type *parm_value*.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or

| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK07022W DFD buffer chain header is NULL

| **Explanation:** An internal error occurred because a
| DFD/TLDL buffer chain is missing.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Contact your system programmer.

| **System programmer response:** Contact an IBM service
| representative.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK07023W Error performing seek on file *file* Error (*error_number*,*reason*,*message*)

| **Explanation:** An error occurred while doing a seek in
| a file. In the message text:

| *error_number*
| The number of the I/O error.

| *file*
| The name of the output metacode file.

| *message*
| The message that describes the error.

| *reason*
| The reason code for the error.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Check to see if the file has been
| corrupted or truncated, your disk is full or
| write-protected, or the subdirectory has insufficient
| access rights.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK07024W The above error occurred in the following command:

| **Explanation:** This message precedes a printout of the
| command packet that contains the parameter in error.

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

| **User response:** Correct the error in the preceding
| message and then run the transform again.

| **System programmer response:** None.

| **Operator response:** Not applicable.

| **Problem determination:** Not applicable.

| **Source:** Print Transform from AFP to PCL, PDF, or
| PostScript for Infoprint Server for z/OS.

| **Module:** Not applicable.

| **Routing code:** Not applicable.

| **Descriptor code:** Not applicable.

| **Automation:** Not applicable.

AOK07028W *position_type* Scan Line *cursor_position* off page, Scan= *dot_address*.

| **Explanation:** The cursor position specified is off the
| page. The position is moved back on the page. In the
| message text:

| *cursor_position*
| The position X or Y of the cursor.

| *dot_address*
| The dot address that was translated.

| *position_type*
| The type of cursor position (portrait or landscape).

| **System action:** The transform ends or attempts to
| continue based on the AOP_FAIL_ON_ERROR
| environment variable setting in **aopxfd.conf**, the **Fail**
| **on error** field in the printer definition, or the
| **fail-on-transform-error** job attribute that is in effect.

User response: Check your output for incorrectly positioned text.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK07030W Font cannot be added to font control table

Explanation: The requested font requested cannot be added to font control table.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK07035W PS Image Handling Error - Unsupported or illegal *image_option*

Explanation: An error occurred during PostScript image processing. The transform encountered an invalid or unsupported option. In the message text, *image_option* is a description of the invalid or unsupported image option.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK07036W PS Image Handling Internal Error - No image data available.

Explanation: An error occurred during PostScript image processing because no image data was available.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK07037W PS Image Handling Error - Error *error_code* **returned from** *type_name* **compression engine.**

Explanation: An error occurred during PostScript image processing. An image compression engine returned a non-zero return code, most likely due to bad image data. In the message text:

error_code
 The error code returned from the compression handling routine.

type_name
 The name of the image compression type, such as JPEG or CCITT Group 4.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail**

on error field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Make sure the image data is valid. If it is, contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK08000W IPage margins outside of printable area of PCL printer,top(*top_value***) Bottom(***bottom_value***).**

Explanation: The page margins are outside of the printable area for the PCL printer. In the message text:

bottom_value
    The value of the bottom margin.

top_value
    The value of the top margin.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the values of each margin to see if the printer supports them.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK08601W I/O error (*error_number***,***reason*** reading ink map file** *error_msg inkmap_file* **).**

Explanation: The transform could not open the Ink Map file. Either the file does not exist or it does not have read access permissions. In the message text:

error_msg
    The description of the error.

error_number
    The number of the error.

inkmap_file
    The name and path of a file that contains Ink Map commands.

reason
    The reason code for the error.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check to see if the file name and path are spelled correctly, the file exists in the proper subdirectory, and the user has read permission for the file.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK08602W Bin not on printer

Explanation: The specified paper tray does not exist on the printer.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: None.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK08604W No Ink Map Entry for INK *ink_entry* defaulting to BLACK

Explanation: The color for an object in the file has no entry in the Ink Map file. In the message text, *ink_entry* is the name of the color entry.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Add an entry to the Ink Map file for the color and run the transform again.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK09001W Paper size invalid for target printer *page_size*.

Explanation: Target printer does not support the specified paper size, *page_size*.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check the paper size to see if the printer supports it.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK09024E The Type 1 font file *file* not found.

Explanation: The transform could not find the Type 1 font file, named *file*, in the PSFONTLIB subdirectory.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Check that the file name and path are correct and that the file has not been corrupted or over-written.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOK09041E Error *return_code* writing to PDF output file.

Explanation: An I/O error with a return code of *return_code* occurred while the transform was attempting to write the PDF output to the staging file. Possible explanations include insufficient space in the file system, or insufficient permission to write to the file system. If using the default product installation options, staging files are written to subdirectories of /var/Printsrv/xfd.

System action: The transform ends or attempts to continue based on the AOP_FAIL_ON_ERROR environment variable setting in **aopxfd.conf**, the **Fail on error** field in the printer definition, or the **fail-on-transform-error** job attribute that is in effect.

User response: Review the SYSLOG for messages relating to a full file system or RACF permission exceptions, or contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

| **Automation:** Not applicable.

| **AOP2350E**   **MODCA, LINE, XML or OTHER format**
| **expected**

Explanation: You attempted to transform an incorrect data format. This transform can transform documents that contain MO:DCA-P, line data, or XML. If Infoprint Server detects an unknown data format, the data format is considered "other", and the transform attempts to transform the data.

System action: The transform did not transform the document. No output was generated.

User response: Specify the correct transform command for the input document. Also, ask the administrator to make sure the transform is specified for the correct data formats in the printer definition. Resubmit the transform.

System programmer response: None.

| **Operator response:** Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2351E   **Option** *option* **argument missing**

| **Explanation:** An expected value for an AFP transform
| option was not supplied. In the message text, *option* is
| the name of the transform option.

System action: The AFP transform did not process the transform request. No output was generated.

| **User response:** Make sure that the required option
| values are supplied and resubmit the transform.

System programmer response: None.

| **Operator response:** Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2352E   **Option** *option* **is not valid**

| **Explanation:** An AFP transform option was not valid.
| In the message text, *option* is the transform option that
| is not valid.

System action: The AFP transform did not process the transform request. No output was generated.

User response: Make sure that the requested option is valid and resubmit the transform.

System programmer response: None.

| **Operator response:** Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2353E   **Attribute** *attribute* **is not supported**

Explanation: Infoprint Server does not support the specified attribute. There might be a mismatch between the transform version and Infoprint Server. In the message text, *attribute* is the unsupported attribute.

System action: The AFP transform did not process the transform request. No output was generated.

User response: Contact your system programmer. Resubmit the request after the problem is corrected.

System programmer response: Make sure to apply all required Infoprint Server maintenance.

| **Operator response:** Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2354E   **Down level input interface version**
               number.

| **Explanation:** The Infoprint Server and transform dll
version numbers are not compatible. This could result in unexpected transform functionality.

System action: The AFP transform did not process the transform request. No output was generated.

| **User response:** Contact your system programmer.

System programmer response: Apply the latest PTF for Infoprint Server. If the problem persists, contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2355E   Input buffer length *length* **too long**

Explanation: An internal AFP transform error has occurred. In the message text, *length* is the length of the input buffer.

System action: The AFP transform did not process the transform request. No output was generated.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2356E   Unexpected end of data in *file* **at** *function line***:**

Explanation: An internal AFP transform error has occurred, most likely caused by a communication failure in the transform code. In the message text:

file
    The name of the file where the error occurred.

function
    The name of the function where the error occurred.

line
    The number of the line where the error occurred.

System action: The AFP transform did not process the transform request. No output was generated.

User response: Contact your system programmer.

System programmer response: Look in the transform base directory for any dumps that can help you debug

the problem. The base directory is determined by the value of the **base-directory** attribute in the Infoprint Server configuration file, **aopd.conf**. The default base directory is **/var/Printsrv**. Report the dumps to your IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2357E   Read Failed in *file* **at** *function line***:**
                socket_error

Explanation: An internal AFP transform error has occurred on the named socket read call, most likely caused by a communication failure in the transform code. In the message text:

file   The name of the file where the error occurred.

function The name of the function where the error occurred.

line   The number of the line where the error occurred.

socket_error
                The operating system code that describes the error that occurred.

System action: The AFP transform did not process the transform request. No output was generated.

User response: Contact your system programmer.

System programmer response: Look in the transform base directory for any dumps that can help you debug the problem. The base directory is determined by the value of the **base-directory** attribute in the Infoprint Server configuration file, **aopd.conf**. The default base directory is **/var/Printsrv**. Report the dumps to your IBM service representative. Also see *z/OS UNIX System Services Messages and Codes* for information about socket error codes.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2358E Write Failed in *file* **at** *function line*:
socket_error

Explanation: An internal AFP transform error has
occurred on the named socket write call, most likely
caused by a communication failure in the transform
code. In the message text:

file The name of the file where the error occurred.

function The name of the function where the error
occurred.

line The number of the line where the error
occurred.

socket_error
The operating system code that describes the
error that occurred.

System action: The AFP transform did not process the
transform request. No output was generated.

User response: Contact your system programmer.

System programmer response: Look in the transform
base directory for any dumps that can help you debug
the problem. The base directory is determined by the
value of the **base-directory** attribute in the Infoprint
Server configuration file, **aopd.conf**. The default base
directory is **/var/Printsrv**. Report the dumps to your
IBM service representative. Also see *z/OS UNIX System
Services Messages and Codes* for information about socket
error codes.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or
PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2359E Unexpected transform response from
from **expecting** *exp* **but found** *rsp*

Explanation: An internal AFP transform error has
occurred. In the message text:

exp The expected response.

from The function where the unexpected response
occurred.

rsp The actual response.

The *exp* and *rsp* values can be one of these:
- 01 - STREAM_CONTROL
- 02 - STREAM_STATUS
- 03 - STREAM_DATA_INPUT
- 04 - STREAM_DATA_OUTPUT

System action: An unexpected response was received
by the transform dll from the transform module.

User response: Contact your system programmer.

System programmer response: Contact an IBM service
representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or
PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2360E Unexpected transform response from
from **expecting** *exp* **or** *exp* **but found** *rsp*

Explanation: An internal AFP transform error has
occurred. In the message text:

exp The expected response.

from The function where the unexpected response
occurred.

rsp The actual response.

The *exp* and *rsp* values can be one of these:
- 01 - STREAM_CONTROL
- 02 - STREAM_STATUS
- 03 - STREAM_DATA_INPUT
- 04 - STREAM_DATA_OUTPUT

System action: An unexpected response was received
by the transform dll from the transform module.

User response: Contact your system programmer.

System programmer response: Contact an IBM service
representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or
PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2361E Select() failed in *file* **at** *function line*: *socket*
error **errno2=**socket_error

Explanation: An internal AFP transform error has
occurred on the named socket select call. In the
message text:

file The name of the file where the error occurred.

function The name of the function where the error occurred.

line The number of the line where the error occurred.

socket_error
The operating system code that describes the error that occurred.

System action: The AFP transform did not process the transform request. No output was generated.

User response: Contact your system programmer.

System programmer response: See *z/OS UNIX System Services Messages and Codes* for information about socket error codes or contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2362E **Fcntl() failed in** *file* **at** *function line*: *socket error* **errno2=***socket_error*

Explanation: An internal AFP transform error has occurred on the named socket fcntl call. In the message text:

file The name of the file where the error occurred

function The name of the function where the error occurred

line The number of the line where the error occurred

socket_error
Operating system code that describes the error that occurred

System action: The AFP transform did not process the transform request. No output was generated.

User response: Contact your system programmer.

System programmer response: See *z/OS UNIX System Services Messages and Codes* for information about socket error codes or contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2363E **Attempt to shutdown socket failed** *socket_error*

Explanation: An internal AFP transform error has occurred on the socket shutdown. In the message text, *socket_error* is the operating system code that describes the error that occurred.

System action: The AFP transform did not process the transform request. No or partial output was generated.

User response: Contact your system programmer.

System programmer response: See *z/OS UNIX System Services Messages and Codes* for information about socket error codes or contact an IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2366E **Only one input file may be specified.**

Explanation: Multiple AFP files were specified as input to the **afpxpdf** command line transform.

System action: The request is not completed.

User response: Resubmit the request with only one input file.

System programmer response: None.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PDF for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2367E **The transform did not create any output due to errors.**

Explanation: A communication failure in the transform code most likely caused a data stream error

or another transform error that prevented the transform from creating any output.

System action: The transform created no output.

User response: Contact your system programmer.

System programmer response: Look in the transform base directory for any dumps that can help you debug the problem. The base directory is determined by the value of the **base-directory** attribute in the Infoprint Server configuration file, **aopd.conf**. The default base directory is **/var/Printsrv**. Report the dumps to your IBM service representative.

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

AOP2368E   Condition not satisfied, *condition*, **at line**
              line_number

Explanation: An invalid internal structure value was detected. In the message text:

condition
        The condition that failed

line_number
        The number of the line where the error
        occurred

System action: The transform created no output.

User response: Contact your system programmer.

System programmer response: Contact an IBM service representative

Operator response: Not applicable.

Problem determination: Not applicable.

Source: Print Transform from AFP to PCL, PDF, or PostScript for Infoprint Server for z/OS.

Module: Not applicable.

Routing code: Not applicable.

Descriptor code: Not applicable.

Automation: Not applicable.

Chapter 7. Migrating to Print Transforms

This chapter describes how to migrate to IBM Print Transforms from AFP for Infoprint Server for z/OS V1.1 (called **Print Transforms from AFP**) from these older transform products (called **Infoprint Transforms from AFP**):

- IBM Infoprint Transform for AFP to HP PCL for z/OS
- IBM Infoprint Transform for AFP to Adobe PDF for z/OS
- IBM Infoprint Transform for AFP to Adobe PostScript for z/OS

After you install Print Transforms from AFP, you can use Infoprint Transforms from AFP and Print Transforms from AFP at the same time. You might want to use both transform products at the same time while you are testing Print Transforms from AFP.

You can use both transform products at the same time because the names of the transform commands, transform filters, and transform daemons for Print Transforms from AFP are different from those for Infoprint Transforms from AFP. In addition, the Infoprint Server transform configuration file (**aopxfd.conf**) can contain entries for both Print Transforms from AFP and Infoprint Transforms from AFP.

To use Print Transforms from AFP, you specify Print Transforms from AFP commands on the z/OS UNIX command line or in the AOPBATCH JCL procedure, and you specify Print Transforms from AFP filters in the printer definitions. Table 25 shows the transform command names, filter names, and daemon names for both transform products.

Table 25. Transform commands, filters, and daemons for Infoprint Transforms and Print Transforms

Transform product	Transform commands	Transform filters	Transform daemons
Infoprint Transforms from AFP	afp**2**pcl afp**2**pdf afp**2**ps	afp**2**pcl.dll afp**2**pdf.dll afp**2**ps.dll	afp**2**pcld afp**2**pdfd afp**2**psd
Print Transforms from AFP	afp**x**pcl afp**x**pdf afp**x**ps	afp**x**pcl.dll afp**x**pdf.dll afp**x**ps.dll	afp**x**pcld afp**x**pdfd afp**x**psd

Note: The examples in this migration information show the AFP to PDF transform. For the AFP to PCL or AFP to PostScript transform, substitute **pcl** or **ps** for **pdf**.

Follow these steps to migrate to Print Transforms from AFP:

1. "Editing the Infoprint Server transform configuration file" on page 250
2. "Stopping and restarting the Infoprint Server Transform Manager daemon" on page 253
3. "Editing Infoprint Server printer definitions" on page 253
4. "Editing JCL and scripts" on page 256
5. "Migration considerations" on page 256

Editing the Infoprint Server transform configuration file

To edit the Infoprint Server transform configuration file (**aopxfd.conf**) for Print Transforms from AFP, you can do one of these:

- Create new entries for Print Transforms from AFP without changing the entries for Infoprint Transforms from AFP. You can copy the existing entries and edit them for Print Transforms from AFP.
- Edit the existing entries for Infoprint Transforms from AFP so that they apply to Print Transforms from AFP.

Creating new entries for Print Transforms from AFP lets you use both Print Transforms from AFP and Infoprint Transforms from AFP at the same time. When you no longer want to use the Infoprint Transforms from AFP, you can delete the entries for Infoprint Transforms from AFP in the **aopxfd.conf** file.

In the entries for Print Transforms from AFP, you might want to specify one or more of these new environment variables for Print Transforms from AFP:

AOP_EDGETOEDGE
> Indicates whether the transform adjusts the x,y left-edge offset position for printing on printers configured for edge-to-edge printing.
>
> Only the AFP to PCL transform supports this variable.

AOP_EMBED_OUTLINES
> Indicates whether the transform includes outline fonts in the PostScript output.
>
> Only the AFP to PostScript transform supports this variable.

AOP_FAIL_ON_ERROR
> Controls whether the transform fails when it detects a data stream warning or error.
>
> All transforms support this variable.

AOP_FONTMAP_TABLE
> Specifies the file path to a font-mapping table that maps raster fonts to outline fonts.
>
> All transforms support this variable.

AOP_FONTPATH
> Specifies the directories that contain TrueType, WorldType, and OpenType fonts that the transform uses to process data sets.
>
> All transforms support this variable.

AOP_PAPER auto value
> **Auto** means that the transform uses the page size in the Page Descriptor (PGD) structured field in the AFP data.
>
> All transforms support this variable.

AOP_TRAILER_ERROR_PAGE
> The AOP_TRAILER_ERROR_PAGE default value is **warning**. When AOP_TRAILER_ERROR_PAGE is set to **warning** or **error**, the transforms attach a trailer page of error, warning, and informational messages to the document.
>
> If you do not want the error trailer page attached to the output, do one of the following:

- Set the AOP_TRAILER_ERROR_PAGE environment variable in the transform class.
- Set the **trailer-transform-error-page** job attribute in the AOPBATCH or AOPPRINT batch job.
- Add the **trailer-transform-error-page** attribute to the printer definition via the PIDU command.
- Set **Trailer error page** field on the ISPF panel of the printer definition Processing section. This inserts the **trailer-transform-error-page** attribute into your printer definition.
- Specify the PRTATTRS parameter on the OUTPUT JCL statement to set the **trailer-transform-error-page** value on a per batch job basis

All transforms support this variable.

Print Transforms from AFP does not support some of the environment variables and values that Infoprint Transforms from AFP supports. In the entries for Print Transforms from AFP, you can comment out the unsupported variables or leave them as-is because unsupported variables and value are ignored without error.

Print Transforms from AFP does not support these environment variables:
- AOP_FONTMAP (replaced by AOP_FONTMAP_TABLE)
- AOP_POSITIONING_METHOD
- AOP_RESOLUTION
- AOP_SIMULATE_240_DPI

Print Transforms from AFP supports the AOP_PAPER environment variable; however, the **letteree** and **a4ee** values are not supported. If you specify these values, the transforms map **letteree** to **letter**, and **a4ee** to **a4**.

Tip: For edge-to-edge printing in the AFP to PCL transform, specify the new AOP_EDGETOEDGE environment variable. However, this environment variable applies to all paper sizes in all input trays. For edge-to-edge printing only for certain paper sizes or trays, you can create separate transform classes.

Related information:
1. For complete descriptions of the supported environment variables, see:
   - "Environment variables for the AFP to PCL transform" on page 66
   - "Environment variables for the AFP to PDF transform" on page 85
   - "Environment variables for the AFP to PostScript transform" on page 108
2. For information about how to edit the Infoprint Server transform configuration file, see "Editing the transform configuration file (aopxfd.conf)" in *z/OS Infoprint Server Customization*.

Example of creating new transform entries in aopxfd.conf

To create new transform entries for the APF to PDF transform in file **aopxfd.conf** for Print Transforms from AFP:
1. Copy all the **afp2pdf** entries in the **aopxfd.conf** file.
2. In the copied entries, change **afp2pdf** to **afpxpdf**.
3. (Optional) Comment out the environment variables that Print Transforms from AFP does not support. Specify any new environment variables for Print Transforms from AFP.

4. Save the file with both the **afp2pdf** and **afpxpdf** entries in the file.
5. Stop and restart the Infoprint Server Transform Manager daemon (**aopxfd**) for the changes to take effect.

Figure 10 and Figure 11 on page 253 show examples of an Infoprint Transforms from AFP entry and a Print Transforms from AFP entry.

```
## Infoprint Transforms from AFP entry:
transform afp2pdf_us
 start-command = afp2pdfd
 min-active = 0
 max-active = 2
 maximum-idle-time = 300 # 5 minutes
 environment = {
   AOP_ANNOTATIONS -> no
   AOP_CHARS -> 60D9
   AOP_CUTSHEET -> no
   AOP_FLATE -> yes
   AOP_FONTLIB -> "sys1.font300"
   AOP_FONTMAP -> yes
   AOP_FORMDEF -> F1CP0110
   AOP_FORMDEFLIB -> "sys1.fdeflib"
   AOP_MSGFORMDEF -> F1CP0110
   AOP_MSGPAGEDEF -> P1P08682
   AOP_OVERLAYLIB -> "sys1.overlib"
   AOP_OUTLINES -> yes
   AOP_PAGEDEF -> P1P08682
   AOP_PAGEDEFLIB -> "sys1.pdeflib"
   AOP_PAGESEGLIB -> "sys1.pseglib"
   AOP_PAPER ->
     "letter legal letter letter letter letter letter letter letter letter"
   AOP_TRAYID -> "1 1 1 1 1 1 1 1 1 1"
   _BPX_JOBNAME -> AFP2PDFD
 }
;
```

Figure 10. Example of an Infoprint Transforms from AFP entry

```
## Print Transforms from AFP entry:
transform afpxpdf_us
 start-command = afpxpdfd
 min-active = 0
 max-active = 2
 maximum-idle-time = 300 # 5 minutes
 environment = {
   AOP_ANNOTATIONS -> no
   AOP_CHARS -> 60D9
   AOP_CUTSHEET -> no
   AOP_FLATE -> yes
   AOP_FONTLIB -> "sys1.font300"
   AOP_FONTMAP_TABLE -> /usr/lpp/Printsrv/samples/aokfontmap.samp
   AOP_FORMDEF -> F1CP0110
   AOP_FORMDEFLIB -> "sys1.fdeflib"
   AOP_MSGFORMDEF -> F1CP0110
   AOP_MSGPAGEDEF -> P1P08682
   AOP_OVERLAYLIB -> "sys1.overlib"
   AOP_OUTLINES -> yes
   AOP_PAGEDEF -> P1P08682
   AOP_PAGEDEFLIB -> "sys1.pdeflib"
   AOP_PAGESEGLIB -> "sys1.pseglib"
   AOP_PAPER ->
     "letter legal letter letter letter letter letter letter letter letter"
   AOP_TRAYID -> "1 1 1 1 1 1 1 1 1 1"
   _BPX_JOBNAME -> AFPXPDFD
 }
;
```

Figure 11. Example of a Print Transforms from AFP entry. Changed lines are in **bold**.

Related information: For information about how to edit the Infoprint Server
transform configuration file, see "Editing the transform
configuration file (aopxfd.conf)" in *z/OS Infoprint Server
Customization*.

Stopping and restarting the Infoprint Server Transform Manager daemon

Stop and restart the Infoprint Server Transform Manager daemon (**aopxfd**) when
you want your configuration changes for Print Transforms to AFP to take effect.

To stop the **aopxfd** daemon by using the AOPSTOP JCL procedure, enter this MVS
START command:
```
START AOPSTOP,OPTIONS='-d xfd'
```

To restart the **aopxfd** daemon by using the AOPSTART JCL procedure, enter this
MVS START command:
```
START AOPSTART
```

Related information: For more information about how to start and stop Infoprint
Server daemons, see *z/OS Infoprint Server Operation and
Administration*.

Editing Infoprint Server printer definitions

To edit printer definitions for Print Transforms from AFP, you can do one of these:

- The sample shell script, **/usr/lpp/Printsrv/samples/aokmodfilter.sh**, can be used to modify the filter attribute of the printer definitions. The script will generate a file containing a list of pidu modify commands. The commands will modify the filter attribute of the printer definitions from afp2pcl.dll, afp2pdf.dll, and afp2ps.dll to afpxpcl.dll, afpxpdf.dll, and afpxps.dll. See the sample shell script for instructions.
- Create new printer definitions that use Print Transforms from AFP without changing the existing printer definitions that use Infoprint Transforms from AFP. You can copy existing printer definitions and edit them to use Print Transforms from AFP.
- Edit existing printer definitions that use Infoprint Transforms from AFP to use Print Transforms from AFP.

If you copy and edit printer definitions to create new ones for Print Transforms from AFP, make these changes:
- Change the printer definition name because each printer definition must have a unique name. Also, change any JCL that references the printer definition name.
- If the **Use DEST, CLASS, and FORMS for IP PrintWay printer selection** field is selected in the printer definition, change the **DEST**, **CLASS**, or **FORMS** field because these fields must, together, be a unique combination. Also, change any JCL that references the **DEST**, **CLASS**, or **FORMS** values.
- Change the name in the **NetSpool printer LU** field, if specified, because each printer LU name must be unique. Also, define the new NetSpool printer LU name to VTAM.

To create or edit printer definitions, you can use either the Infoprint Server ISPF panels or the Infoprint Server Printer Inventory Definition Utility (PIDU) program.

Tips:
1. Print Transforms from AFP does not support the transform **-r** option. If a printer definition specifies this transform option in the **Filter** field, you can delete it or leave it as-is. Print Transforms from AFP ignores **-r** without error.
2. In IP PrintWay extended mode, if you create printer definitions that specify different values in the **DEST**, **CLASS**, or **FORMS** fields, you might need to modify the IP PrintWay job selection rule or create a new rule.
3. In IP PrintWay basic mode, if you create printer definitions that specify different values in the **DEST**, **CLASS**, or **FORMS** fields, you might need to modify the work-selection criteria in an IP PrintWay FSA.

Example of editing a printer definition

On the ISPF panels, the transform filters are specified in the Processing section of the printer definition. If the printer definition uses a Processing component, you can create a new component or specify a custom value.

Figure 12 on page 255 shows an example of a portion of the ISPF panel for the Processing section of a printer definition. Changed text is in **bold**.

```
Edit                               Processing

Printer definition name . AFP_TO_PDF_EMAIL

Document code page . .  _____
Printer code page. . .  IBM-1047

Supported Data Formats and Associated Filters:
Data format:    Filter:
/ Line data     afpxpdf.dll –c us %filter-options_____  (extend)
/ MO:DCA-P      afpxpdf.dll –c us %filter-options_____  (extend)
_ PostScript    _____  (extend)
/ Text          aopfiltr.so_____   (extend)
_ PCL           _____  (extend)
_ PDF           _____  (extend)
_ SAP           _____  (extend)
/ XML           afpxpdf.dll –c us %filter-options_____  (extend)
_ TIFF          _____  (extend)
_ JPEG          _____  (extend)
_ Other         _____  (extend)

_ Resubmit for filtering

Transforms:
   Fail on error . . . . _  1. No  2. Error  3. Warning
   Trailer error page. . _  1. No  2. Error  3. Warning

AFP to PDF Transform Encryption:
   User identifier . _____  (extend)
   Owner identifier. _____  (extend)
   Encryption level  1  1. Low (40-bit key) 2. High (128-bit key)
   Protected actions:
      Restrict print. . . 2  1. Yes  2. No
      Restrict copy . . . 2  1. Yes  2. No
      Restrict update . . 2  1. Yes  2. No
```

Figure 12. Example of ISPF panel for printer definition processing

Figure 13 shows an example of a printer definition in a PIDU command file.

```
create printer AFP_TO_PDF_EMAIL
   printer-codepage = IBM-1047
   filters = {
      line -> "afpxpdf.dll -c us %filter-option"
      modca -> "afpxpdf.dll –c us %filter-option"
      xml -> "afpxpdf.dll –c us %filter-options"
      text -> aopfiltr.so
   }
   printer-type = ip-printway
   protocol-type = email
   output-class = 0
   failure-retention-period = 0024:00:00
   mail-to-addresses = {
      "pdfviewer@xyz.com"
   }
   mail-from-name = AFPXPDF transform
   destination = PDFMAILX
   description = Convert AFP to PDF and email
   dcf-routing = yes
   pdf-encryption-level = bits40
;
```

Figure 13. Example of a printer definition in a PIDU command file. Changed text is in **bold**.

Note: After editing the PIDU file, run the **pidu** command to create the printer
definition in the Printer Inventory.

Related information:

1. For more information about the PIDU program, see "Using the PIDU program to manage the Printer Inventory" in *z/OS Infoprint Server Operation and Administration*

2. For more information about NetSpool printer LUs, see "Specifying the NetSpool printer LU name" in *z/OS Infoprint Server Operation and Administration*.

Editing JCL and scripts

If you create printer definitions that have different values in the **DEST**, **CLASS**, or **FORMS** fields, change the JCL that specifies these values in the DEST, CLASS, FORMS parameters. Also, change the printer definition name in any JCL that specifies the FSSDATA parameter on the OUTPUT JCL statement, or the SUBSYS parameter on the DD JCL statement.

If you have AOPBATCH JCL procedures that reference the transform commands, change the command names. For example, change **afp2pdf** to **afpxpdf**.

If you have any scripts that reference the transform commands, change the command names. For example, change **afp2pdf** to **afpxpdf**.

You can use symbolic links as an alternative to editing AOPBATCH JCL procedures and scripts that reference the transform commands. For example, the following steps create a symbolic link from afp2pdf to afpxpdf:

Note: This example uses the directory **/usr/bin**, but any suitable directory can be used.

1. Create a symbol link from **afp2pdf** to **/usr/lpp/Printsrv/bin/afpxpdf** in **/usr/bin**.

   ```
   ln -s /usr/lpp/Printsrv/bin/afpxpdf /usr/bin/afp2pdf
   ```

2. Modify the PATH environment variable specified in the **aopstart** EXEC or in the shell running the script. For example, in the **aopstart** EXEC, specify:

   ```
   n=n+1; env.n='PATH=/usr/bin:'install_path'/bin:/bin'
   ```

3. Stop and restart the Infoprint Server Transform Manager daemon (**aopxfd**) for the changes to take effect. See "Stopping and restarting the Infoprint Server Transform Manager daemon" on page 253.

Print Transforms from AFP does not support the transform options, job attributes, and JCL parameters listed in Table 26. If any JCL or scripts specify these transform options, job attributes, or JCL parameters, you can leave them as-is. Unsupported transform options, job attributes, and JCL parameters are ignored without error.

Table 26. Transform options, job attributes, and JCL parameters that Print Transforms from AFP does not support

Transform command options	Job attributes	JCL parameters
-r *resolution*	print-error-reporting	DATACK

Migration considerations

These considerations apply when you migrate to Print Transforms from AFP:

.aokcinit file

If you install the transform daemons in a directory other than the default **/usr/lpp/Printsrv/bin** directory, make sure that the **.aokcinit** file is in the

same directory. All the transforms that Print Transforms from AFP provides use this file. If the file is not in the same directory as the transform daemons, you receive this message in the Infoprint Server common message log:

```
AOP003E afpxps.dll: AOK03227E Transform Config File
"/u/user/Printsrv/bin/.aokcinit"is inaccessible:
EDC5129I No such file or directory.
```

PDF encryption with passwords

The Print Transforms from AFP sample Password exit for the AFP to PDF transform is the same as the exit that Infoprint Transforms from AFP provides. However, the file names for the Password exit and the password database are new. Also, the default value for the AOP_PASSWORD_EXIT environment variables is the Print Transforms from AFP password exit. Table 27 shows the differences in the transform products.

Table 27. AFP to PDF Password exits in Infoprint Transforms compared to Print Transforms

Transform product	Password exit	Password database	AOP_PASSWORD_EXIT default
Infoprint Transforms from AFP	aop**p**dfexit.dll	aop**p**dfexit.db	/usr/lpp/Printsrv/lib/aop**p**dfexit.dll
Print Transforms from AFP	ao**k**pdfexit.dll	ao**k**pdfexit.db	/usr/lpp/Printsrv/lib/ao**k**pdfexit.dll

If you have not customized the sample Password exit, you can use the sample Password exit that Print Transforms from AFP provides. To use the new Password exit, you can either omit the AOP_PASSWORD_EXIT environment variable, or specify:

```
AOP_PASSWORD_EXIT->/usr/lpp/Printsrv/lib/aokpdfexit.dll
```

If you have customized the Password exit, you can continue to use the customized exit. However, make sure that the AOP_PASSWORD_EXIT environment variable in the Infoprint Server transform configuration file (**aopxfd.conf**) specifies the full path name of the customized Password exit. For example:

```
AOP_PASSWORD_EXIT->/usr/lpp/Printsrv/lib/aoppdfexit.dll
```

DATACK JCL parameter

The DATACK JCL parameter is not supported. The AOP_TRAILER_ERROR_PAGE environment variable and the **trailer-transform-error-page** job attribute provide a similar but more comprehensive set of options than the options provided by the DATACK JCL parameter. Use the AOP_TRAILER_ERROR_PAGE environment variable or the **trailer-transform-error-page** job attribute to control whether or not a page of error, warning, or informational messages are attached to the output document.

Tip: Set the **Trailer error page** field in the printer definition to avoid having to stop and restart the transform daemon, **aopxfd**.

Specify the PRTATTRS JCL parameter in the OUTPUT JCL statement to specify the **trailer-transform-error-page** job attribute. You can use the PRTATTRS JCL parameter as a replacement for the DATACK JCL parameter:

- To not attach a trailer page, specify PRTATTRS='trailer-transform-error-page=no'. This corresponds to the DATACK=BLOCK parameter.

- To attach a trailer page, set PRTATTRS='trailer-transform-error-page=warning'. This corresponds to the DATACK=UNBLOCK, DATACK=BLKCHAR, and DATACK=BLKPOS parameters.

If you do not want the transform to stop when an error occurs, set the AOP_FAIL_ON_ERROR -> no environment variable or specify the **fail-on-transform-error=no** job attribute.

AOP_FONTMAP_TABLE
When viewing the output PDF document, if the fidelity of the font characters is not as sharp as it was when using the previous transform product, you will need to include a font-mapping table. The reason for the fidelity loss might be that the transform is inserting raster font characters rather than outline font characters into the PDF document. For instructions on how to set up and use a font-mapping table, see "Mapping raster fonts to outline fonts" on page 121.

Appendix A. Environment variables

Table 28 lists all the environment variables the transforms use and indicates which transforms support the variable. For information about these environment variables, see:

- "Environment variables for the AFP to PCL transform" on page 66
- "Environment variables for the AFP to PDF transform" on page 85
- "Environment variables for the AFP to PostScript transform" on page 108

Table 28. Environment variables that transforms support

Environment variable	AFP to PCL transform	AFP to PDF transform	AFP to PostScript transform
__AOPXFORM_DAEMON_DEBUG	Yes	Yes	Yes
_BPX_JOBNAME	Yes	Yes	Yes
AOP_ANNOTATIONS	No	Yes	No
AOP_ASSUME_RIDIC_UNPAD	Yes	Yes	Yes
AOP_CHARS	Yes	Yes	Yes
AOP_COLOR	Yes	No	Yes
AOP_CUTSHEET	Yes	Yes	Yes
AOP_EDGETOEDGE	Yes	No	No
AOP_EMBED_OUTLINES	No	No	Yes
AOP_ENCRYPT	No	Yes	No
AOP_FAIL_ON_ERROR	Yes	Yes	Yes
AOP_FAIL_ON_IMAGE_ERROR	Yes	Yes	Yes
AOP_FLATE	No	Yes	No
AOP_FONTLIB	Yes	Yes	Yes
AOP_FONTMAP_TABLE	Yes	Yes	Yes
AOP_FONTPATH	Yes	Yes	Yes
AOP_FORMDEF	Yes	Yes	Yes
AOP_FORMDEFLIB	Yes	Yes	Yes
AOP_INDEX	No	Yes	No
AOP_INDEX_LANG	No	Yes	No
AOP_LINEARIZE	No	Yes	No
AOP_LINKS	No	Yes	No
AOP_MAX_RECORD_LENGTH	Yes	Yes	Yes
AOP_MSGFORMDEF	Yes	Yes	Yes
AOP_MSGPAGEDEF	Yes	Yes	Yes
AOP_MVS_RETURN_CODES (see **Note**)	Yes	Yes	Yes
AOP_OFFSET_JOGGING	Yes	No	No
AOP_OUTLINES	No	Yes	No
AOP_OVERLAYLIB	Yes	Yes	Yes

Table 28. Environment variables that transforms support (continued)

Environment variable	AFP to PCL transform	AFP to PDF transform	AFP to PostScript transform
AOP_PAGEDEF	Yes	Yes	Yes
AOP_PAGEDEFLIB	Yes	Yes	Yes
AOP_PAGESEGLIB	Yes	Yes	Yes
AOP_PAPER	Yes	Yes	Yes
AOP_PASSWORD_EXIT	No	Yes	No
AOP_PJL	Yes	No	Yes
AOP_PROTECT	No	Yes	No
AOP_ROTATE_PDF	No	Yes	No
AOP_TRAILER_ERROR_PAGE	Yes	Yes	Yes
AOP_TRAYID	Yes	Yes	Yes
Note: Do not specify AOP_MVS_RETURN_CODES in the Infoprint Server transform configuration file as you do the other environment variables. For information about where to specify this environment variable, see "AOP_MVS_RETURN_CODES environment variable" on page 57.			

Appendix B. Accessibility

Publications for this product are offered in Adobe Portable Document Format (PDF) and should be compliant with accessibility standards. If you experience difficulties when using PDF files, you can view the information through the z/OS Internet Library website or the z/OS Information Center. If you continue to experience problems, send an email to mhvrcfs@us.ibm.com or write to:

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Poughkeepsie, NY 12601-5400
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Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features in z/OS enable users to:

- Use assistive technologies such as screen readers and screen magnifier software.
- Operate specific or equivalent features by using only the keyboard.
- Customize display attributes such as color, contrast, and font size.

Using assistive technologies

Assistive technology products, such as screen readers, function with the user interfaces found in z/OS. Consult the assistive technology documentation for specific information when using such products to access z/OS interfaces.

Keyboard navigation of the user interface

Users can access z/OS user interfaces by using TSO/E or ISPF. Refer to *z/OS TSO/E Primer*, *z/OS TSO/E User's Guide*, and *z/OS ISPF User's Guide Vol I* for information about accessing TSO/E and ISPF interfaces. These guides describe how to use TSO/E and ISPF, including the use of keyboard shortcuts or function keys (PF keys). Each guide includes the default settings for the PF keys and explains how to modify their functions.

z/OS information

z/OS information is accessible by using screen readers with the BookServer or Library Server versions of z/OS books in the Internet library at:

`http://www.ibm.com/systems/z/os/zos/bkserv/`

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