InfoPrint Transform Manager for Linux: Installation and User's Guide

Version 1 Release 2.8d

G550-1048-02

InfoPrint Solutions Company

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Note:
Before using this information and the product it supports, read the information in "Notices".

Third edition (November 2009)

This edition applies to InfoPrint Transform Manager for Linux Version 1 Release 2 Modification 8d (PTF U828379 (November 2009)), Program Number 5639-P51, and to all subsequent releases and modifications until otherwise indicated in new editions.

Internet
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You can send comments by e-mail to **printpub@us.ibm.com** or by mail to:

InfoPrint Solutions Company
6300 Diagonal Hwy 002J
Boulder, CO 80301-9270
U.S.A.

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About this publication

This publication provides information about InfoPrint Transform Manager for Linux® Version 1 Release 2 Modification 8d licensed program (Program Number 5639-P51) with PTF U828379.

This publication includes an overview of InfoPrint Transform Manager for Linux (Transform Manager), installation and configuration information about the product, tasks that can be done with the product, a description of the transforms and messages included with the product, and the transform IDs.

Who should read this publication

This publication is for system administrators who need to install, operate, and maintain the Transform Manager. This publication can also be used by job submitters who want to use the transforms provided with Transform Manager.

Related information

For information about InfoPrint Manager, see these documents:

- *InfoPrint Manager: Reference*, S550-1052
- *InfoPrint Manager for AIX: Procedures*, G550-1066
- *InfoPrint Manager for Windows: Procedures*, G550-1073

For information about InfoPrint ProcessDirector, see these documents:

- *InfoPrint ProcessDirector for AIX: Planning and Installation*, G550-1045
- *InfoPrint ProcessDirector for Linux: Planning and Installation*, G550-1042

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Chapter 1. Transform Manager overview

This section gives an overview of InfoPrint® Transform Manager for Linux (Transform Manager), including highlights, how it works, the user interface, and system requirements.

Transform Manager is a scalable system that operates on a Linux workstation. Transform Manager provides a powerful and cost-effective system for transforming print jobs from the input format to the output format. When data and image transforms are required for Advanced Function Presentation™ (AFP™) printing, print servers, such as InfoPrint Manager for Windows®, InfoPrint Manager for AIX®, InfoPrint ProcessDirector, or Infoprint® Server for z/OS®, can send transform requests to Transform Manager for processing across one or more transform servers.

You configure the print servers so that print jobs that require transformation are sent to Transform Manager. The Transform Manager user interface lets you define both the print servers that are sending transform requests and the transform servers that are transforming the data. You can also use the user interface to start or stop transform servers, view a transform server message log, or turn tracing on or off for a transform server.

Highlights

This section describes the features of Transform Manager.

Transform Manager represents InfoPrint Solutions Company's strategic transform solution for multiplatforms. This component technology lets you centralize your transform programs in one location, eliminating the possibility of inconsistent transforms running on each platform. Transform Manager provides a solid architecture for flexible integration of additional transforms.

Transform Manager:

- Supports these data and raster image transforms to AFP:
  - HP Printer Control Language (PCL) at PCL6
  - Adobe® Portable Document Format (PDF) Version 1.7 or earlier

    Note: PDF Version 1.7 works with SLES 10, and PDF Version 1.6 works with SLES 9.
  - Adobe PostScript® (PS) Language Level 3
  - Graphics Interchange Format (GIF)
  - Joint Photographic Experts Group (JPEG)
  - Systems Applications and Products (SAP OTF and ABAP)
  - Tagged Image File Format (TIFF)

  PDF and PS transform requests are processed as groups of pages. GIF, JPEG, and TIFF transform requests are handled in parallel on a job basis.
- Supports the transform of AFP data to PDF data when InfoPrint Transform Manager: afp2pdf Transform i-listed PRPQ, Program Number 5799-TWL, is purchased. For information about the **afp2pdf** transform, see *InfoPrint Transform Manager: afp2pdf Transform Installation and User's Guide*, G550-0538.
- Improves transform performance of large PDF jobs.

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- Provides remote transform processing; Version 1.2 works with InfoPrint Manager for AIX, InfoPrint Manager for Windows, InfoPrint ProcessDirector, and Infoprint Server for z/OS.
- Requires that input TIFF files must be less than 2 gigabytes. That is, the **tiff2afp** transform does not support input files larger than 2 gigabytes.
- Includes the **gif2afp**, **jpeg2afp**, **pcl2afp**, **pdf2afp**, and **ps2afp** configuration files that have been modified to support files larger than 2 gigabytes.
- Supports installation of Transform Manager on an IBM® eServer™ BladeCenter®. A properly configured IBM eServer BladeCenter can provide substantial additional transform processing power.
- Is printer-independent.

How it works

This section describes how Transform Manager works.

Transform Manager handles data and image transform processing from print servers by balancing and managing transform requests across multiple transform servers. You interact with Transform Manager through a user interface on a Web browser.

Transform Manager includes these components:

Coordinator

The coordinator communicates with these print servers:

- InfoPrint Manager for AIX and Windows
- InfoPrint ProcessDirector for AIX and Linux
- Infoprint Server for z/OS

The coordinator balances the transform requests across transform servers.

Transform server

The transform server manages these print data and image transforms:

- PCL
- Adobe PDF and PostScript
- GIF
- JPEG
- SAP
- TIFF

The transforms convert the print data and image data to AFP data. For more information about the transforms, see “Using the transforms” on page 49.

User interface

The user interface lets you define print servers to Transform Manager and start, stop, and manage the transform servers.

If you install multiple, separately licensed Transform Manager systems, you can use the user interface from any installation to add and manage the transform servers from the other installations.

Transform Manager accepts transform requests from these print servers in Version 1.2: InfoPrint Manager for AIX, InfoPrint Manager for Windows, InfoPrint ProcessDirector, and Infoprint Server for z/OS (see “System requirements” on page 8 for the applicable versions).

Figure 1 shows the Transform Manager components and how Transform Manager interacts with the print servers.

Note: When you purchase the **afp2pdf** transform that is available as an i-listed PRPQ, 5799-TWL, you can transform AFP data to PDF data.

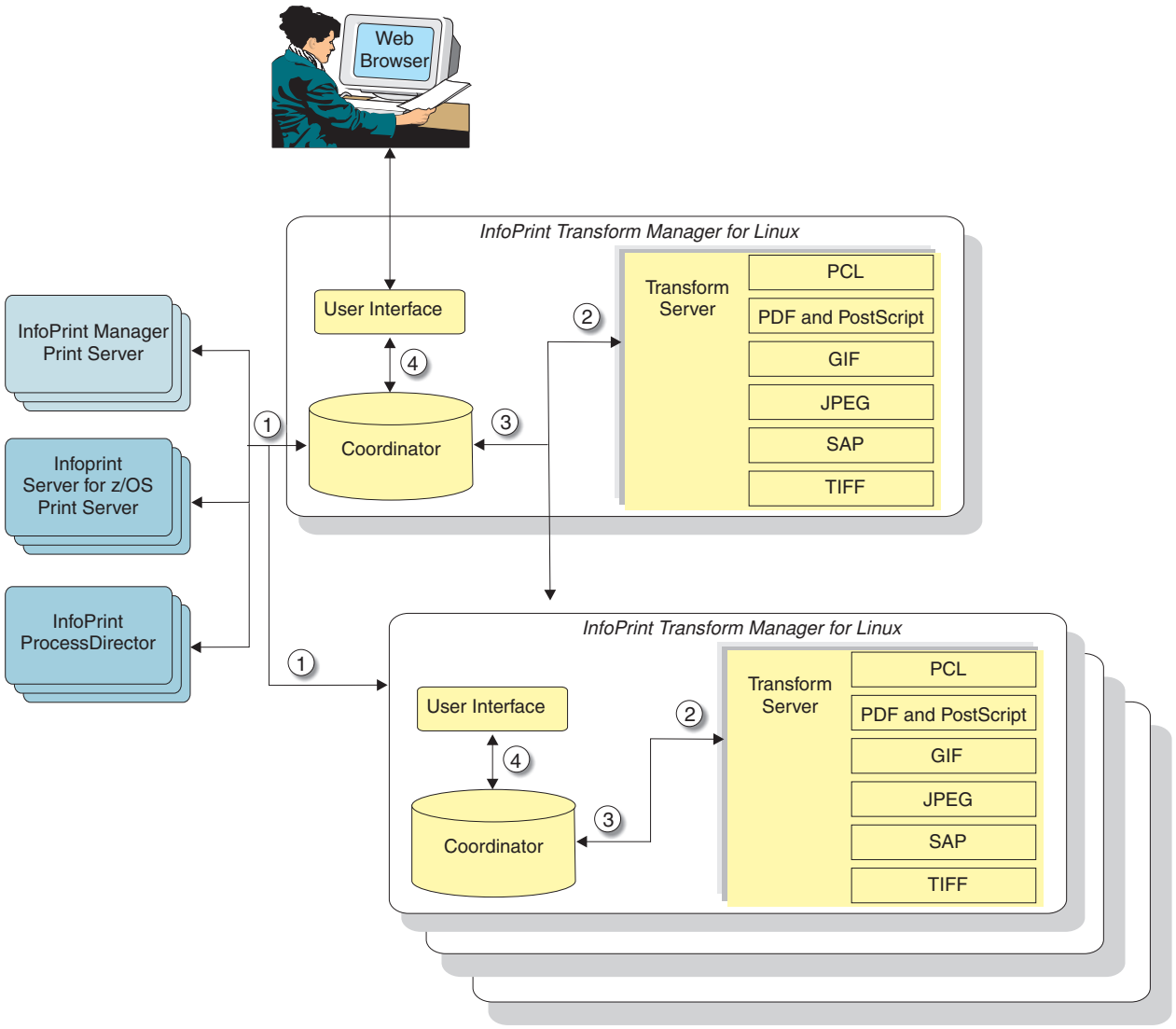

Figure 1. Transform Manager components and the interaction with print servers

These numbered items correspond to the numbers in Figure 1. They describe how the components operate and interact with each other and the print servers.

1. Print jobs are submitted from one or more print servers that have been configured to send transform requests to Transform Manager. A print server interface transmits the request to the coordinator. The coordinator component receives the request and information regarding the type of transformation to be done.
2. The coordinator sends the transform request to a transform server component, which transforms the data with the appropriate transform, such as PostScript to AFP. If you are using more than one transform server, the coordinator sends the request to the transform server with the lowest processing load.

3. To maximize print server performance in sending data to the printers, the transform servers sequence the transformed data in the correct order and return it to the print servers as the data completes processing, instead of waiting for the entire job to finish.
4. The user interface component, which you access from a Web browser, lets you define which print servers and transform servers Transform Manager communicates with. With the user interface, you can start and stop transform servers, check the operating status of the transform servers, determine the percentage of work pending for a transform server, view the message log, configure a trace to help diagnose a problem (only when requested by Software Support), and see what transforms are installed on a transform server.

Returning transform requests from Transform Manager

If you submit numerous transform requests from a print server through Transform Manager, those transform requests might not return to the print server in the same order. The order the transformed data returns to the print server depends on the kind of transform (AFP, PDF, PostScript, GIF, JPEG, SAP, or TIFF) and the size of the request.

For example, you send a PCL file and then you send a PDF file that is the same size. The PCL file can only be transformed on a job basis. The PDF file, on the other hand, is processed as groups of pages over multiple processors. Therefore, the PDF file might be transformed first and Transform Manager might return it to the print server before the PCL file.

Transform Manager user interface

The Transform Manager user interface is a Web-based interface that you can access from a workstation. The workstation must have either the Microsoft® Internet Explorer Web browser or the Firefox Web browser (also called Mozilla) for either Windows or Linux installed.

The Transform Manager user interface contains standard interface controls, such as tables, drop-down lists, and buttons.

The Transform Manager user interface consists of a main page and other associated pages.

Viewing information in the help system

The online help in the Transform Manager user interface helps you use the pages and do tasks. To use the help, do one of these:

- Click **Help** in the Banner Area to see a list of links to all of the help.
- Click the question mark on a field for help about that field.

Banner area

The Transform Manager user interface has a banner area at the top of each page, which is always available from any page or task panel in the interface.

From the banner area, you can click:

Preferences
Opens the **Change Login Password** page.

Help Opens the Transform Manager help system.

About Opens information about the product.

The About page contains the version information for Transform Manager, including the program number, installed component versions, Software Support contact information, and the product copyright. The About page also contains the IP address, processor count, compute node count, and the operating system version for the local transform server. The local transform server is the transform server that runs on the same machine as the Transform Manager whose user interface is currently being viewed. When the installation includes a blade installation, the About page shows the processor count and the compute node count for each blade.

Note: If the user is not logged in, the banner area only contains the **Help** and **About** choices.

Related tasks

"Changing passwords" on page 21
If you want to change the password for Transform Manager, you need to know the current password.

Transform Manager main page

The main page lists the transform servers and print servers that you can work with in Transform Manager.

You can sort the tables on this page in ascending or descending order by selecting a column heading.

This page is refreshed periodically in the background to display the latest statistics. Message boxes might appear at the top of the page to tell you about the result of some actions that needed time to complete or about changes in the status of the transform servers, print servers, or the coordinator.

Note: If the communication with the coordinator fails, the two tables are replaced by an error message. When this happens, you can press the **Reset ITM** button on the main page to restart Transform Manager. If this does not solve the problem, reboot the machine.

Transform Servers section

The **Transform Servers** section lists the transform servers that are defined to Transform Manager.

The transform server actions you can do are:

Start Initialize the selected transform server so it can start accepting new transform requests.

Stop Let the selected transform server complete processing current requests and then become unavailable to accept new transform requests.

Add Define a new transform server to Transform Manager.

Remove
Remove the selected transform servers from Transform Manager.

Export Traces
Export the log and trace information for the selected transform server.

Actions
From the **Actions** drop-down menu, click:

- **View Log** to display the Job Log for a transform server
- **View History** to display the Job History for a transform server
- **Distribute resources** to select resource files that you want to copy to another transform server

The **Transform Servers** section contains these headings:

Select Indicates whether the transform server is selected for an action.

Host Name
Specifies a host name that is a hyperlink to the host name or IP address of the transform server. When you click the hyperlink, you open the **Set Transform Server properties for *host***, where *host* is the host name or TCP/IP address of a transform server.

Availability
This row contains an icon that is either a green light or a red light:

- Green indicates that the transform server is running.
- Red indicates that the transform server is not running.

This row also contains an icon next to each green or red light that shows the transform server connection when the transform server status is either Ready or Transforming:

- This icon is constantly changing over a five to ten second interval if the connection is active.
- The icon does not change when the connection goes down. This means that a problem has occurred with the transform server even if the status seems to be OK (Ready or Transforming).

Status
This row contains a text string of the current server status:

Starting
The transform server is initializing to accept new transform requests.

Ready The server is running and accepting jobs. No jobs are currently being transformed.

Transforming
The server is running and is accepting jobs. At least one job is being transformed, and one or more jobs may be in the queue.

Stopping
The server is in the process of stopping. It is not accepting any new transform requests.

Stopped
The server has stopped accepting new transform requests.

Lost Connection
The connection to the server has been lost.

CPU Utilization
Shows how much of the CPU is being used. The CPU usage refers only to the machine that the transform server is running on.

Jobs Queued
Contains the number of jobs waiting in the queue to be transformed. Jobs that are transforming are not included in the jobs queued count.

Jobs Processed
Contains the number of jobs that have been processed by the server since the server was started.

Pages/Min.
Contains the average number of pages per minute for all the jobs that are already completed.

Print Servers section

The **Print Servers** section lists the print servers that are defined to Transform Manager.

The print server actions you can do are:

Add Define a new print server to Transform Manager.

Remove
Remove the selected print servers from Transform Manager.

Reconnect
Retry the connection to register with the selected print server.

The **Print Servers** section contains these headings:

Select Indicates whether the print server is selected for an action.

Availability
For InfoPrint Manager for AIX and Windows, this row contains an icon that is either a green light or a red light:

- Green indicates that the printer was successfully configured for Transform Manager.
- Red indicates that some problems occurred when the printer was configured.
- For other types of printers, this column contains no information.

Host Name
Indicates the host name or IP address of the print server.

Server Name
Indicates the name of the print server, which might be the same as the host name.

Type Indicates the type of the print server; that is, InfoPrint Manager, InfoPrint ProcessDirector, or Infoprint Server.

Port Indicates the port number for the print server.

Set Transform Server properties for *host*

The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

Properties are grouped on three tabs: General, Status, and Trace. You can view all of the properties at once by clicking **Show all tabs** in the left pane. After you have clicked **Show all tabs**, you can press **F5** to collapse the three tabs and display the General tab.

You can change any of the information on these tabs that has an entry field except the fields that are grayed-out because they are read-only.

General

You use the fields on this tab to change properties for the transform server identified by *host* in the title of the main page.

Status

You use the fields on this tab to view status information about the transform server identified by the *host* in the title of the main page.

Trace

You use the fields on this tab to enable or disable tracing for the transform server identified by the *host* in the title of the page. However, you should use the Trace tab only when Software Support asks you to run a trace to help diagnose a problem.

Accessibility

Accessibility features are an important part of Transform Manager.

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, use software products successfully. The major accessibility features in Transform Manager let users:

- Use assistive technologies such as screen-readers and screen magnifier software.
- Operate specific or equivalent features 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 Transform Manager. Consult the assistive technology documentation for specific information when using it to access Transform Manager.

Keyboard navigation of the user interface

The Transform Manager user interface complies with the accessibility guidelines for HTML. Users can use keyboard shortcuts or function keys (PF keys) to access the Transform Manager user interface. See your browser documentation for keyboard shortcuts and default settings for the PF keys and for explanations about how to modify their functions.

System requirements

This section describes the hardware and software requirements for using Transform Manager.

Hardware requirements

InfoPrint Solutions Company recommends you use an IBM xSeries® server that supports SUSE Linux Enterprise Server 9.0 SP3 (Service Pack 3) or SUSE Linux Enterprise Server 10.0 for x86. The server requirements are:

- Intel® 32-bit platform
- At least two 3.0 GHz or faster processors for single-core processors
- At least two 2.0 GHz or faster processors for multi-core processors

Notes:

1. When you install Service Pack 4 (also called PTF U810977) on a multi-core processor, you use these parameters with the installer bin file:
   ```
   -W verify_cpu.active=false
   -V limit_nodes_max_value=false
   ```
2. With Service Pack 6 (also called PTF 815774), you can install Transform Manager over Service Pack 4 without using the `-W` or `-V` parameters.
3. With Service Pack 6, Transform Manager counts each core as a physical processing unit. For example, a system with one dual-core CPU qualifies as two compute nodes.

- The minimum amount of RAM installed must be the greater value from 2 GB and (512 MB multiplied by the number of compute nodes to be installed)
- CD-ROM drive

The IBM eServer BladeCenter requirements are:

- HS20 blade server that supports SUSE Linux Enterprise Server 9.0 SP3 or SUSE Linux Enterprise Server 10.0 with a minimum of two processors
- Minimum of 1 GB RAM
- CD-ROM drive

Software requirements

Transform Manager requires this software:

Software	Installed on
SUSE Linux Enterprise Server 9.0 SP3 or SUSE Linux Enterprise Server 10.0 for x86 with automount feature enabled	Transform Manager server
InfoPrint Manager for AIX 4.2 with PTF U807769	Print server
InfoPrint Manager for Windows 2.2 with PTF UO00352	Print server
InfoPrint Manager for AIX 4.3	Print server
InfoPrint Manager for Windows 2.3	Print server
InfoPrint ProcessDirector for AIX, V1R3	Print server
InfoPrint ProcessDirector for Linux, V1R3	Print server
Infoprint Server for z/OS V1R4 and later; when you run Infoprint Server for z/OS V1R4 through V1R8, APAR OA18410 is required	Print server
X Window System if you want to use the graphical user interface of InstallShield MultiPlatform Wizard to install the Transform Manager (recommended)	Transform Manager server
Microsoft Internet Explorer Web browser	Workstation
Mozilla 1.7 or later Web browser from Firefox	Workstation

Software	Installed on
Usage considerations: 1. You must have at least one print server, but you can have more than one. 2. If you use the Firefox Web browser with InfoPrint ProcessDirector, you will be asked to log in whenever you switch between Transform Manager and InfoPrint ProcessDirector and want to do an action. This does not occur with Microsoft Internet Explorer. 3. The help system for Transform Manager is an IBM Eclipse Help System. This help system requires approximately 1.2 G of memory. 4. When you install Transform Manager, Version 1 Release 2 Modification 6, you must also install Mozilla 1.7 or later. 5. With Transform Manager, Version 1 Release 2 Modification 6, the supported versions of these products have changed as indicated in **bold** font: • IBM Embeddable WebSphere® Application Server, **Version 6.1.0.7** • IBM 32-bit Runtime Environment for Linux on Intel, iSeries®, and pSeries® architecture, Java™ 2 Technology Edition, **Version 5.0** • The Apache Software License, **Version 1.1** and **Version 2.0**	

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Chapter 2. Installing and logging in to Transform Manager

Before you can use Transform Manager, you need to install it and set up the Transform Manager user interface.

You can install Transform Manager on either:

- xSeries Servers using the InstallShield Wizard or fromthe command line
- An IBM eServer BladeCenter

Next, you can log in to Transform Manager and work with the Transform Manager user interface.

Note: Service Pack 4, also called PTF U810977, was distributed as a complete Product Update with new CD-ROM numbers, which are used in this section.

Disk space requirements for Transform Manager

Before you install Transform Manager, you need to make sure that you have the minimum free disk space available.

Minimum free disk space requirements

Transform Manager requires this free disk space:

Directory	Free disk space
/tmp	500 MB
/var/tmp/IBM	500 MB
/opt/IBM	1024 MB
/var/IBM	1024 MB

Note: If any of these directories are mounted on the same partition, the sum of the values indicated for those directories needs to be available on that partition.

Installing Transform Manager on xSeries servers using the InstallShield Wizard

This section describes the procedure for installing Transform Manager on an xSeries server using the InstallShield Wizard.

Make sure all required hardware and software is available (see “System requirements” on page 8 for information). If you are installing Transform Manager on an xSeries server that has InfoPrint ProcessDirector already installed on it, the job submission from InfoPrint ProcessDirector must be stopped before installing Transform Manager.

Use this procedure to install Transform Manager on a Linux workstation with the InstallShield Wizard. If you have problems installing with the InstallShield Wizard, see the release notes file on the product CD for information about installing from the Linux command line.

1. Log in as a root (administrator) user.

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2. Insert the product CD (LCD4-5611-04) in the CD-ROM drive. Mount the CD if it does not mount automatically by specifying: **mount/media/cdrom**.
3. Select the **install.sh** file in the **/media/cdrom** directory. You see a product window with the copyright statement and then you see a welcome page.
4. Click **Next** on the Welcome page. You see a list of tasks.
5. Click **Install InfoPrint Transform Manager** and then click **Next**. The InstallShield Wizard steps you through the installation.
6. When you see the license, click the button next to **I accept the terms of the license agreement** and click **Next**.
7. On the next page, specify the number of compute nodes to be installed. The number of compute nodes must be at least two and it must be equal to the number of CPUs installed on the machine (reported by the installer). Any number of compute nodes between these two values is valid.
8. In the Installation summary information window, click **Install**.
9. When asked to enter an administrator password for Transform Manager, enter a password and click **Next**.
10. Click **Finish**. The installation summary includes information about accessing the user interface with a Web browser.

When the installation is complete, you must configure one or more print servers to communicate with Transform Manager.

Keep in mind: If you install multiple, separately licensed Transform Manager systems, you can use the user interface from any installation to add and manage the transform servers from the other installations.

Installing Transform Manager on xSeries servers from the command line

This section describes the procedure for installing Transform Manager on an xSeries server from the command line.

Make sure all required hardware and software is available (see “System requirements” on page 8 for information). If you are installing Transform Manager on an xSeries server that has InfoPrint ProcessDirector already installed on it, the job submission from InfoPrint ProcessDirector must be stopped before installing Transform Manager.

Use this procedure to install Transform Manager on a Linux workstation from the command line.

1. Log in as a root (administrator) user.
2. Insert the product CD (LCD4-5611-04) in the CD-ROM drive.
3. Enter this command from the CD directory: `./install.sh -console`.
4. If you see a list of supported languages, do this:
   a. Enter the option for the appropriate language. You see an **X** next to the selected language.
   b. Enter **0**.
   c. Enter **1** to continue.

   You see welcome information for the installation.
5. Enter **1** to continue. You see a list of tasks.

6. Enter the option for **Install InfoPrint Transform Manager**. You see an **X** next to the selection.
7. Enter **0** and then enter **1**. You see the license agreement.
8. Read the license agreement and then enter **1** to accept the agreement. You see an **X** next to the selection.
9. Enter **0** and then enter **1**.
10. You see a page that asks you for the number of compute nodes (that you purchased) to be installed. This number has to be at least two and at most equal to the number of CPUs installed on the machine.
11. Read the summary information and then enter **1**. The installation begins and you see several bars that indicate the progress of the installation.
12. Enter **1** to continue. You see another progress bar.
13. When the installation completes successfully, you see the Web address for the Transform Manager user interface and directions for accessing the user interface on the Linux workstation.
14. Record the Web address and then bookmark it in the Web browser you are using to access the user interface. For information about using the user interface, see the online help.
15. Enter **1** to continue. You see a message.
16. If errors are listed in the message, contact Software Support for help.
17. Enter **3** to finish and exit from the installation program.
18. Eject the CD.
19. Log out as root and log in as another user.

Installing Transform Manager on an IBM eServer BladeCenter

This section describes the procedure for installing Transform Manager on an IBM eServer BladeCenter.

Before installing Transform Manager on an IBM eServer BladeCenter, you need to determine which blade will be the head node (the head node is the coordinating or arbitrating node), which blades will be the compute nodes (compute nodes transform the data streams), and how many compute nodes you need. You must install the compute nodes before you install the head node.

You use InfoPrint Transform Manager for Linux: Blade (CD1), LCD4-5614-02, for the compute nodes.

You use InfoPrint Transform Manager for Linux: Blade (CD2), LCD4-5615-02, and InfoPrint Transform Manager for Linux, LCD4-5611-04, for the head node.

Installing a Transform Manager compute node on an IBM eServer BladeCenter

If you are installing Transform Manager on an IBM eServer BladeCenter that has InfoPrint ProcessDirector already installed on it, the job submission from InfoPrint ProcessDirector must be stopped before installing Transform Manager.

Use this procedure to install a Transform Manager compute node on an IBM eServer BladeCenter with the InstallShield Wizard. The InstallShield Wizard steps you through the installation.

1. Log in as a root (administrator) user.

2. Insert the CD labeled InfoPrint Transform Manager for Linux: Blade (CD 1), LCD4-5614-02, in the CD-ROM drive. When you insert the CD, it mounts automatically and you see the contents of the CD.
3. Launch **/media/cdrom/installnodes.sh** file.
4. On the Welcome page, click **Next**.
5. On the Select option window, click **Install InfoPrint Transform Manager** and click **Next**.
6. When you see the license, click the button next to **I accept the terms of the license agreement** and click **Next**.
7. When you see the installation summary, click **Install**. At the end of the installation, you see a summary of the installation status.
8. Click **Finish**.
9. Repeat all the steps for each compute node that you need.

Installing a Transform Manager head node and user interface on an IBM eServer BladeCenter

If you are installing Transform Manager on an IBM eServer BladeCenter that has InfoPrint ProcessDirector already installed on it, the job submission from InfoPrint ProcessDirector must be stopped before installing Transform Manager.

Use this procedure to install a Transform Manager head node and user interface on an IBM eServer BladeCenter with the InstallShield Wizard. The InstallShield Wizard steps you through the installation.

1. Log in as a root (administrator) user.
2. Insert the CD labeled InfoPrint Transform Manager for Linux: Blade (CD 2), LCD4-5615-02, in the CD-ROM drive. When you insert the CD, it mounts automatically and you see the contents of the CD.
3. Launch **/media/cdrom/installblades.sh** file.
4. On the Welcome page, click **Next**.
5. On the Select option window, click **Install InfoPrint Transform Manager** and click **Next**.
6. When you see the license, click the button next to **I accept the terms of the license agreement** and click **Next**.
7. When prompted by the InstallShield Wizard, insert the CD labeled InfoPrint Transform Manager, LCD4-5611-04, in the CD-ROM drive.
8. Enter the IP address or IP ranges for all the compute nodes. You see a Summary page.
9. You see a page that asks you for the number of compute nodes to be installed on each blade server. This number has to be at least two and at most equal to the number of CPUs installed on the machine. The page lists the number of CPUs on each blade, and you must specify a number at least equal to 2 and at most equal to the number of CPUs on each blade. The total number of compute node for an Transform Manager installation must match the number of compute nodes that you purchased.
10. When you see the installation summary, click **Install**.
11. When prompted for the administrator password, enter a password, then enter the same password in the **Confirm password** field, and click **Next**.
12. At the end of the installation, you see a summary of the installation status.
13. Click **Finish**.

Logging in to Transform Manager

This section describes how to log in to Transform Manager.

To log in:

1. Open a Web browser and enter this address: **http://{*target server host name or ip address*}:{*port determined at install*}/psd**. The default port number is 14080. For example, if Transform Manager is installed on a host with TCP/IP address **127.0.0.1** with the default port, the address is: **http://127.0.0.1:14080/psd**.
2. In the browser window, you see the **Log in to Transform Manager** page. Type the Transform Manager password.
3. Click **Log in**. You see the Transform Manager main page.

   Remember: If you do not use Transform Manager for 30 minutes or more, you must log in again.

   When you first log in to Transform Manager, you see one transform server that has been added by default during the installation.

Chapter 3. Configuring Transform Manager

Before you can use Transform Manager, you need to add a transform server and the appropriate print servers.

You might also want to specify a unique password instead of using the default **nopassword**.

Depending on which print servers you use, there are unique configuration tasks to be completed as well, such as authorizing a user ID for use with InfoPrint Manager.

Changing passwords

If you want to change the password for Transform Manager, you need to know the current password.

To change the password that is used to authenticate any user who tries to log in to the Transform Manager user interface:

1. Click **Preferences** in the banner area on the Transform Manager main page. You see the **Change Login Password** dialog.
2. Type the current password in the **Current password** field.
3. Type a new password in the **New password** field. Passwords can only be alphanumeric characters (a-z A-Z 0-9) and the special characters (! @ # $ % ^ & * ( )) on the keyboard that are accessed by pressing the shift key for the numbers 0-9. Passwords are limited to 128 characters. Zero-length passwords are allowed. The default password is an empty string, which means you do not need to specify a password.
4. Type the new password again in the **Confirm the new password** field. The password you type here must match the new password you typed in the **New password** field. The password automatically takes effect the next time you log in to the Transform Manager user interface.
5. Click **Change** to change the password. You see `The Login password was changed successfully` message.

Adding a transform server

Before you can add a transform server, you need to determine the host name or IP address for the transform server and the port number to use for the transform server. You can use the default port number.

To add a transform server:

1. On the Transform Manager main page, click **Add** for the transform server action. You see the Add Transform Server page.
2. Type the host name or IP address for the transform server.
3. Use the default port number or type another port number for the transform server.
4. Click **OK**. You see a message in the message box and then you see the Transform Manager main page. When the add action is complete, you see the transform server in the list.

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Adding a print server

Before you can add a print server, you need to determine the host name or IP address for the print server and the port number to use for the print server. You can use the default port number.

To add a print server:

1. On the Transform Manager main page, click **Add** for the print server action. You see the Add Print Server page.
2. Select the appropriate server type from the **Server Type** pull-down list.
3. When you select one of the InfoPrint Manager choices, complete these steps:
   a. Type the server name for the print server.
   b. Type the host name or IP address for the print server.
   c. Use the default port number or type another port number for the print server.
4. When you select InfoPrint ProcessDirector or Infoprint Server for z/OS, type the host name or IP address for the print server.
5. Click **OK**. You see a message in the message box and then you see the Transform Manager main page. When the add action is complete, you see the print server in the list.

Configuring InfoPrint Manager for AIX and Windows for use with Transform Manager

Before a print server can send transform requests to Transform Manager, you must authorize the Transform Manager user ID and configure the print server to communicate with Transform Manager.

To configure InfoPrint Manager for AIX and Windows for use with Transform Manager:

1. Authorize the Transform Manager user ID.
2. Add InfoPrint Manager as a print server to Transform Manager, which results in changes in InfoPrint Manager.
3. Test the resulting print server configuration.

Authorizing the Transform Manager user ID

During Transform Manager installation, a user ID, **ibmitm**, is created on the Linux workstation. Transform Manager uses this user ID to access print servers. You must configure InfoPrint Manager to authorize this Transform Manager user ID with administrator access to the print server. The way you authorize access in InfoPrint Manager depends on the operating system you are using:

- If you are using InfoPrint Manager for AIX without DCE:
  1. Access the System Management Interface Tool (SMIT).
  2. Select **InfoPrint Printing System-->Security-->Groups-->Add User to Group**.
  3. Add **ibmitm@*workstation*** to the **admin** group, where *workstation* is either the fully qualified host name or IP address of the Transform Manager workstation (such as: mytm1.boulder.ibm.com or 195.168.1.242) or the wildcard character (*****) that represents any Transform Manager workstation.
- If you are using InfoPrint Manager for AIX with DCE:

You need to manually set the **transform-manager-host** and **transform-manager-port** attributes on the InfoPrint Manager server with the **pdset** command. For example, if **itm** is the name of the system running Transform Manager and **ipm4aix** is the name of the InfoPrint Manager server, type:

```
pdset -c server -x "transform-manager-host=itm" ipm4aix
pdset -c server -x "transform-manager-port=6986" ipm4aix
```

- If you are using InfoPrint Manager for Windows:
  1. Access the InfoPrint Manager Management Console.
  2. Select **Security-->Groups**.
  3. Add **ibmitm@*workstation*** to the **admin** group, where *workstation* is either the fully qualified host name or IP address of the Transform Manager workstation (such as: mytm1.boulder.ibm.com or 195.168.1.242) or the wildcard character (*****) that represents any Transform Manager workstation.
  4. From Transform Manager, be sure to specify the server name in case-sensitive form.

  To learn more about authorizing access in InfoPrint Manager, see *InfoPrint Manager for AIX: Procedures* or *InfoPrint Manager for Windows: Procedures*.

Adding the print server for InfoPrint Manager

Before Transform Manager can transform InfoPrint Manager print jobs, you must add the print server with the Transform Manager user interface. Adding a print server in Transform Manager sets these two attributes in InfoPrint Manager:

transform-manager-host
transform-manager-port

When you define the print server, the **transform-manager-host** attribute is set to the Transform Manager host name or IP address and the **transform-manager-port** attribute is set to the default Transform Manager port, which is 6986. You must add a print server for each InfoPrint Manager server you want to use. If these attributes are not set, the transforms in the InfoPrint Manager print server are used.

Note: Do not set these attributes when you submit a print request. If you specify these attributes in InfoPrint Manager on the job request instead of adding the print server in Transform Manager, the print server is not displayed in the list of print servers on the Transform Manager main page.

Related tasks

"Adding a print server" on page 22

Testing the InfoPrint Manager print server configuration

After you have added a print server for use with InfoPrint Manager, you need to test the print server configuration.

To test the print server configuration for InfoPrint Manager with Transform Manager:

1. Submit a non-AFP print job to the print server and view the status of the transform request on the Transform Manager main page to verify that you configured the print server correctly. You might need to watch closely in case the processing happens quickly.
2. To check that your job was transformed successfully from the Transform Manager user interface, click the **Actions** pull-down list on the Transform

Manager main page to display the Job Log for the transform server you are working with. Look for the entry that contains your test job's name.

Related tasks

"Adding a print server" on page 22

Configuring InfoPrint ProcessDirector for use with Transform Manager

Before InfoPrint ProcessDirector can send transform requests to Transform Manager, you need to configure a print server and customize InfoPrint ProcessDirector.

To configure InfoPrint ProcessDirector for use with Transform Manager:

1. Add InfoPrint ProcessDirector as a print server to Transform Manager.
2. Test the resulting print server configuration.

For more information about the steps you do on InfoPrint ProcessDirector, see InfoPrint ProcessDirector online help.

Note: If you use the Firefox Web browser with InfoPrint ProcessDirector, you will be asked to log in whenever you switch between Transform Manager and InfoPrint ProcessDirector and want to do an action. This does not occur with Microsoft Internet Explorer.

Adding a print server for InfoPrint ProcessDirector

To configure InfoPrint ProcessDirector with Transform Manager, you need to add a print server for InfoPrint ProcessDirector's use.

After you have added the print server for InfoPrint ProcessDirector and identified the transform server that you will use, you need to configure Transform Manager within InfoPrint ProcessDirector. Record the Transform Server IP address or DNS name and the Transform Server port number, so that you have it available when you configure InfoPrint ProcessDirector to send jobs to Transform Manager.

For more information about the steps you do on InfoPrint ProcessDirector, see InfoPrint ProcessDirector online help.

Related tasks

"Adding a print server" on page 22

Testing the InfoPrint ProcessDirector print server configuration

This section describes how to test the InfoPrint ProcessDirector print server configuration for Transform Manager.

To test the print server configuration:

1. On the InfoPrint ProcessDirector system, submit a request to transform a non-AFP document to AFP format.
2. Check the AFP output.
3. Review Transform Manager Server job log by clicking **Actions** and then clicking **View Job Log**.

Configuring Infoprint Server for z/OS for use with Transform Manager

This section describes how to configure your system to use Infoprint Server for z/OS as a print server for transform output.

Before Infoprint Server for z/OS can send transform requests to Transform Manager, you need to configure a print server. Use these procedures to:

1. Add Infoprint Server for z/OS as a print server to Transform Manager.
2. Customize Infoprint Server for z/OS to use Transform Manager.
3. Test the resulting print server configuration.

For more information about the steps you do on the z/OS system, see the Infoprint Server for z/OS documentation.

Related tasks

"Adding a print server" on page 22

Customizing Infoprint Server for z/OS for use with Transform Manager

This section describes how to customize Infoprint Server for z/OS so that it can do transforms on the Linux system when requested.

1. In the remote transform configuration file, **aoprxf.conf**, provide the host name or IP address and the port number of the Linux system.
2. In the Infoprint Server for z/OS Printer Inventory, customize the PSF printer definitions to do transforms to AFP on the Linux system.

Testing the Infoprint Server for z/OS print server configuration

This section describes how to test the Infoprint Server for z/OS print server configuration for Transform Manager.

To test the print server configuration:

1. On the z/OS system, submit a request to transform a non-AFP document to AFP format.
2. Check the AFP output.
3. Review Transform Manager Server job log by clicking **Actions** and then clicking **View Job Log**.

Chapter 4. Working with transform servers

After you have installed and configured Transform Manager, tasks that apply to transform servers can be completed within the Transform Manager user interface.

Starting from the Transform Manager main page, you can do these tasks for a transform server:

- Log in to Transform Manager.
- Start a transform server.
- Stop a transform server.
- Remove a transform server.
- Display job information for a transform server.
- Display specific messages for a transform server.
- Display specific job history for a transform server.
- Change information for a transform server.
- Reset Transform Manager.
- Manage transform servers.
- Use Transform Manager file directories.

Note: Adding additional transform servers might require configuration. Therefore, the information about adding a transform server is included with the configuration information. See “Adding a transform server” on page 21.

Logging in to Transform Manager

This section describes how to log in to Transform Manager.

To log in:

1. Open a Web browser and enter this address: **http://{*target server host name or ip address*}:{*port determined at install*}/psd**. The default port number is 14080. For example, if Transform Manager is installed on a host with TCP/IP address **127.0.0.1** with the default port, the address is: **http://127.0.0.1:14080/psd**.
2. In the browser window, you see the **Log in to Transform Manager** page. Type the Transform Manager password.
3. Click **Log in**. You see the Transform Manager main page.

   Remember: If you do not use Transform Manager for 30 minutes or more, you must log in again.

   When you first log in to Transform Manager, you see one transform server that has been added by default during the installation.

Starting transform servers

To start transform servers:

1. On the Transform Manager main page, check one or more transform servers in the Transform Server Select column.
2. Click **Start** for the selected transform servers. When a transform server’s state is **Ready** or **Transforming**, it is ready to accept a transform request.

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Stopping transform servers

To stop transform servers:

1. On the Transform Manager main page, check one or more transform servers in the Transform Server Select column.
2. Click **Stop** for the selected transform servers. These transform servers complete any transform requests in progress and do not accept any more requests.

Removing transform servers

To remove transform servers from Transform Manager:

1. On the Transform Manager main page, check one or more transform servers in the Transform Server Select column.
2. Click **Remove** for the selected transform servers. You see the Confirm Removal of Transform Servers page.
3. Click **Yes**. You see a message in the message box and then you see the Transform Manager main page. When the remove action is complete, you see the list without the selected transform servers.

Displaying job information for a transform server

To view the job information for a transform server:

1. On the Transform Manager main page, click **Actions**.
2. Click **View Log**. You see the **Job Log for Transform Server: *n.nn.nnn.nnn***, where *n.nn.nnn.nnn* is the transform server you selected on the Transform Manager main page.
3. Click **View History**. You see the **Job History for Transform Server: *n.nn.nnn.nnn***, where *n.nn.nnn.nnn* is the transform server you selected on the Transform Manager main page.

Displaying specific messages for a transform server

To display specific messages:

1. On the Job Log for the transform server, select or enter data for one or more of the criteria fields. With the **Issued within:** field, you can specify the messages to include for **1-7** days or specify **All** to specify all messages, or you can specify the messages to include for **1-24** hours or specify **All** to specify all messages. Paging controls appear at the bottom of the Job Log. You can use these controls to move forward, backward, and jump to a specific page of the log. You can also specify the number of entries shown in the log by changing the number in **Display**.
2. Click **Refresh**. The list of messages is updated based on the criteria you selected.
3. Click **Export**. You see a message that the export might take time to process. Then you see the system **Export Log** dialog so you can save the log to disk.
4. Click **OK** after entering the location where you want to save the log.
5. Click **Close**. You see the Transform Manager main page.

When you install PTF U810978, you can click **Export Traces** on the Transform Manager main page to export the logs for a selected server.

Displaying specific job history for a transform server

To display specific job history:

1. On the Job History for the transform server, select or enter data for the **Started within:** criteria field. You can specify the messages to include for **1-7** days or specify **All** to specify all messages, or you can specify the messages to include for **1-24** hours or specify **All** to specify all messages. The **Job ID** field contains a number that Transform Manager generates and is only relevant to Transform Manager. This **Job ID** number does not start at **1** and might not be consecutive.
2. Click **Refresh**. The list of messages is updated based on the criteria you selected.
3. Click **Export**. You see the system **Export History** dialog so you can save the history to disk.
4. Click **OK** after entering the location where you want to save the log.
5. If you want to clear the history, click **Clear**. You see the **Clear jobs history** message.
6. When you see the **Clear jobs history** message, click **OK** to clear the message or click **Cancel** to return to the job history page.
7. Click **Close**. You see the Transform Manager main page.

Note: Paging controls appear at the bottom of the Job History. You can use these controls to move forward, backward, and jump to a specific page of the log. You can also specify the number of entries shown in the log by changing the number in **Display**.

Changing transform server information

You use the Properties Pages to change the information for a transform server.

To access the Properties Pages for a specific transform server:

1. Click the hyperlink for the specific transform server on the Transform Manager main page. You see the **Properties Page for Transform Server: *n.nn.nnn.nnn***, where *n.nn.nnn.nnn* is the Host Name or TCP/IP address of a Transform Server you selected.

   Properties are grouped on three tabs: General, Status, and Trace. You can view all of the properties at once by clicking **Show all tabs** in the left pane.
2. You can change any of the information on these pages that has an entry field.
3. Click **?** next to each entry field for information about it.
4. Click **OK** to save any changed properties and return to the Transform Manager main page.

Resetting Transform Manager

You use the **Reset ITM** button on the Transform Manager main page to reset the selected Transform Manager.

1. Click **Reset ITM**. You see the **Reset Transform Manager** dialog.
2. Type the password used to log in to the user interface.
3. Click **Reset ITM** on the **Reset Transform Manager** dialog.

Managing transform servers

To manage transform servers, do this on the Transform Manager main page:

1. To start, stop, add, or remove transform servers, check one or more transform servers in the Transform Server Select column. With PTF U810978, you can also export logs about one or more transform servers that you have selected.
2. Select one of these actions:

Action	Description
Start	Initialize the selected transform servers so they can start accepting new transform requests.
Stop	Let the selected transform servers complete processing current requests and then become unavailable to accept new transform requests.
Add	Define a new transform server to Transform Manager.
Remove	Remove the selected transform servers from Transform Manager.
Export Traces	Capture the traces for the selected transform servers, pack them, and save them on your local computer.

If you select the Add action, you see the Add Transform Server page. If you select the Remove action, you see the Confirm Removal of Transform Servers page. Otherwise, Transform Manager does the action and a message box indicates the status of the action.

Using file directories

This section lists the directories containing the Transform Manager files.

Transform Manager is installed on the Linux workstation in these directories:

Transform Manager persistent data

`/opt/IBM/itm`

Transform Manager workspace data

`/var/IBM/itm`

Transform Manager user interface

`/opt/IBM/itm/ejz`

Chapter 5. Working with print servers

After you have installed and configured Transform Manager, tasks that apply to print servers can be completed within the Transform Manager user interface.

Starting from the Transform Manager main page, you can do these tasks for a print server:

- Add a print server.

  Note: Because you need to add a print server when you are configuring Transform Manager, the information about adding a print server is included with the configuration information. See “Adding a print server” on page 22.
- Reconnect a print server.
- Remove print servers.
- Change a print server definition.
- Managing print servers.

Reconnecting print servers

To reconnect a print server with Transform Manager:

1. On the Transform Manager main page, check one or more print servers in the Print Server Select column.
2. Click **Reconnect** for the print server action.
3. You see a message in the message box and then you see the Transform Manager main page. When the reconnect action is complete, you see a message indicating the success of the operation.

When you reconnect a print server, Transform Manager re-registers with that print server. This makes sure that all subsequent jobs submitted from that print server are processed by Transform Manager. This operation is useful if, for example, after the print server was added to Transform Manager, the values of the **transform-manager-host** and **transform-manager-port** attributes were changed accidentally.

Removing print servers

To remove print servers from Transform Manager:

1. On the Transform Manager main page, check one or more print servers in the Print Server Select column.
2. Click **Remove** for the print server action. You see the Confirm Removal of Print Servers page.
3. Click **Yes**. You see a message in the message box and then you see the Transform Manager main page. When the remove action is complete, you see the list without the selected print servers.

When you remove an InfoPrint Manager print server, Transform Manager reconfigures InfoPrint Manager to stop sending transform jobs to Transform Manager. When you remove an Infoprint Server or an InfoPrint ProcessDirector print server, Transform Manager removes the print server from the list of print servers.

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Changing print server definitions

To change the definitions for a print server, you cannot edit the existing print server definition. You must first remove the print server from Transform Manager and then add the print server to Transform Manager with a new definition.

Related tasks

Removing print servers
Adding a print server

Managing print servers

1. Check one or more print servers in the Print Server Select column.
2. Select one of these actions:

Action	Description
Add	Define a new print server to Transform Manager.
Reconnect	Reconnect a print server to Transform Manager.
Remove	Remove the selected print servers from Transform Manager.

If you select the Add action, you see the Add Print Server page. If you select the Remove action, you see the Confirm Removal of Print Servers page.

Related tasks

Adding a print server
Changing print server definitions
“Reconnecting print servers” on page 31
Removing print servers

Chapter 6. Working with resources

You use the **Resources distributor** dialog to copy resources within the directory structure of Transform Manager.

You can copy a single resource file or an archive of multiple resource files. The resources are copied on all selected transform servers with one request.

Resources distributor

You use the **Resources distributor** dialog to copy resources within the directory structure of Transform Manager. You can copy a single resource or an archive of multiple resources.

Transform Servers

This field lists the transform servers where the resources will be copied. This is an informational field that you cannot make changes to.

Use the slider on the right side of the field to move the contents up and down.

Transforms

This field lists the transforms that you can copy resources for.

When you select a transform, the contents of the **Resources Type** field changes.

Use the slider on the right side of the field to move the contents up and down.

Resources Type

This field lists the resources types for the selected transform.

Select the resource type that matches the file to be copied.

Use the slider on the right side of the field to move the contents up and down.

Resources File

This field lists the file to be copied that you select with the **Browse** button.

Click **Browse** to select the file to be copied.

The file can be a single resource file or an archive file with a file type of `tgz` or `zip`.

Archive

You use this field to specify if the file to be copied is an archive file.

From the pull-down list, click **Yes** if you are copying an archive file or click **No** if you are copying a single resource file.

Transform Manager unpacks the archive file and copies the contents to the selected transform's resources directory. A single resource file is copied to the selected transform's resource directory.

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Existing Files

This field lists what action to take when a resource file already exists on a machine.

Select an action from the pull-down list:

Fail Before copying any files, Transform Manager checks to see if any files would be overwritten by the copy process. When **Fail** is selected, resource copying ends and you see message `EJZ00228E`.

Skip A resource file is copied only if it does not already exist.

Overwrite
A resource file is copied and overwrites a file with the same name if it already exists.

Copying resources

You use the **Resource distributor** dialog to copy resources across the Transform Manager compute nodes.

If you want to move more than one resource at a time, use the packaging scripts to create an archive of resources. The **Resource distributor** treats an archive of files as a single file.

To copy resources to the Transform Manager compute nodes:

1. From the Transform Manager main page, select the transform servers where the resource will be copied.
2. Select **Distribute resources** from the **Actions** pull-down list. You see the **Resource distributor** dialog.
3. Click **Browse** next to the **Resources file** entry.
4. Select a resource file or an archive file containing resource files to copy to all compute nodes on your transform servers.

pfb2pfa utility

The **pdf2afp** and **ps2afp** transforms use ASCII fonts.

Transform Manager includes the **pfb2pfa** utility to transform binary PS Type 1 fonts to ASCII fonts. You can then use the **Resources distributor** dialog to copy the ASCII fonts within the directory structure of Transform Manager so that the **pdf2afp** and **ps2afp** transforms can access these fonts. You can copy a single ASCII font or an archive of ASCII fonts.

Accessing the pfb2pfa utility

Transform Manager includes the **pfb2pfa** utility in the `/opt/IBM/itm/tools/pfb2pfa` directory.

To access the **pfb2pfa** utility:

1. Access the command line.
2. Enter this command:
   `cd /opt/IBM/itm/tools/pfb2pfa`
3. Enter the input and output font names that you need to transform to ASCII:
   `pfb2pfa` *`Type1font ASCIIfont`*

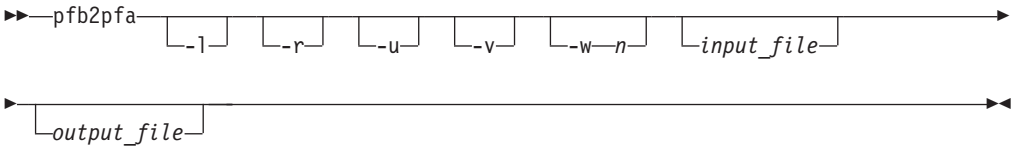
Now, you can use the **Resources distributor** dialog to move *ASCIIfont* to the directory of Transform Manager. In the **Resources distributor** dialog, select **Font** as the **Resources type**.

Transforms binary PostScript Type 1 fonts to ASCII fonts

This section describes the **pfb2pfa** utility and includes its syntax, options, and values.

Syntax:

pfb2pfa



Description:

The **pfb2pfa** utility transforms a binary PostScript Type 1 font to an ASCII font.

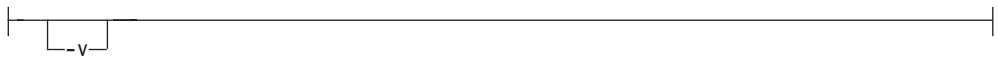
Note: The **pdf2afp** and **ps2afp** transforms can only work with ASCII fonts.

Flags and values:

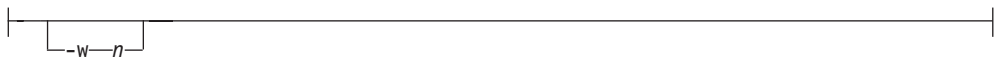
- Specifies that the binary output is in lowercase.

- Replaces the existing output file if one already exists.

- Specifies that the binary output is in uppercase.



- Specifies verbose messages.



- Specifies the maximum number of characters on a line in the resulting ASCII font file. The value specified for *n* must be an integer.

- Specifies the name of the PostScript Type 1 font (*input_file* is the binary font) to transform.

  If you do not specify an input file, the command uses standard input, and you do not specify an output file.

- Specifies the name of the ASCII font (*output_file*) generated by the transform.

  If you do not specify an output file, the command uses standard output, and you do not specify an input file.

Resource packaging scripts

Transform Manager includes packaging scripts for the AIX, Linux, Windows, and z/OS operating systems.

The **Resource distributor** within the Transform Manager user interface can only copy one resource object at a time because of browser restrictions. Therefore, Transform Manager includes packaging scripts so that you can create archive files for multiple resource objects. An archive file is treated as a single object with the **Resource distributor**. When you are using an archive file to distribute resource objects, you must select **Yes** from the **Archive** pull-down list.

Transform Manager has a unique script for each operating system called `respack`. You can distinguish between the operating systems by the directory that contains the script. This is the directory structure and name for the supported operating systems:

AIX `/tools/respack/aix/respack.sh`

Linux `/tools/respack/linux/respack.sh`

Windows
`/tools/respack/windows/respack.bat`

z/OS `/tools/respack/zos/respack.sh`

You can find the scripts on the Product CD-ROM and the Blade CD-ROM. You can also find the scripts on the machine where Transform Manager is installed in the `/opt/IBM/itm/tools/respack`. Make sure to transfer the scripts in binary mode to the machine where they will be run.

The syntax for all the scripts is:

```
<script_name> <archive_name> <source_dir>
```

Where:

<script_name>
The name of the script.

<archive_name>
The name of the archive where the resources are packed.

<source_dir>
The name of the directory where the resources are located.

The **Resource distributor** unpacks the resources in their respective locations in the Transform Manager directory structure, regardless of their relative paths in the archive file.

Chapter 7. Updating Transform Manager with Service Packs

When Service Packs, which are also called SPs or PTFs, are released for Transform Manager, you need to access the code to update the base product.

Service Packs contain new function and program fixes that will enhance your experience with the product. For example, Service Pack 2 contains a revised user interface that simplifies your interaction with Transform Manager.

You can access the code in these ways:

- From the Web site for the Service Pack, create a CD of the code as instructed, and then install the code from the CD you created.
- Obtain a service CD from your software representative and install it.

Updating Transform Manager from the Web site

When a Service Pack is made available for Transform Manager, you need to determine the FTP Web site where the Service Pack is available for downloading.

These Service Packs are available for Transform Manager:

- Service Pack 1, also called PTF U806504, is located at http://www-1.ibm.com/support/docview.wss?uid=psd1P4000470
- Service Pack 2, also called PTF U809395, is located at http://www-1.ibm.com/support/docview.wss?uid=psd1P4000495
- Service Pack 3, also called PTF U809897, is located at http://www-1.ibm.com/support/docview.wss?uid=psd1P4000516
- Service Pack 4, also called PTF U810977, was distributed as a complete Product Update with new CD-ROMs. Contact Software Support to obtain the new CD-ROMs.
- Service Pack 5, also called PTF U810978, is located at http://www-1.ibm.com/support/docview.wss?uid=psd1P4000647.
- Service Pack 6, also called PTF U815774, is located at http://www-1.ibm.com/support/docview.wss?uid=psd1P4000742.
- Service Pack 8a, also called PTF U821731, is located at http://www-1.ibm.com/support/docview.wss?uid=psd1P4000829.

Notes:

1. You cannot install a Service Pack unless you have already installed the base code for Transform Manager.
2. Service Packs are cumulative. Therefore, after you have installed the base code, you only need to install the most recent service pack, such as Service Pack 8a.

To update Transform Manager with a Service Pack from one of the Web sites:

1. Access the appropriate Web site. You see the appropriate download page. For example, InfoPrint Transform Manager for Linux PTF U821731.
2. Follow the download instructions on the page for the format of the Transform Manager server and the Transform Manager blade code.

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Updating Transform Manager from a service CD-ROM with InstallShield

When a Service Pack is made available for Transform Manager, you can obtain a service CD-ROM from your software representative.

Note: You cannot install a Service Pack unless you have already installed the base code for Transform Manager.

To update Transform Manager with a Service Pack on a CD-ROM:

1. Log in as a root (administrator) user.
2. Insert the service CD in the CD-ROM drive. Mount the CD if it does not mount automatically by specifying: **mount/media/cdrom**.
3. Select the **install_sp.sh** file in the **/media/cdrom** directory. You see a product window with the copyright statement and then you see the Welcome page.
4. Click **Next** on the Welcome page. You see a list of tasks.
5. Select the appropriate Service Pack, such as **Install InfoPrint Transform Manager V1.2 Service Pack 6**, and then click **Next**. The InstallShield Wizard steps you through the installation.
6. When you see the license, click the button next to **I accept the terms of the license agreement** and click **Next**.
7. In the Installation summary information page, click **Install**. The default value is the number of compute nodes that are currently configured for use with Transform Manager.
8. Click **Finish**. The installation summary includes information about accessing the user interface with a Web browser.

Updating Transform Manager with a service CD-ROM from the command line

When a Service Pack is made available for Transform Manager, you can obtain a service CD-ROM from your software representative.

Note: You cannot install a Service Pack unless you have already installed the base code for Transform Manager.

Use this procedure to install the service CD-ROM for Transform Manager on a Linux workstation from the command line:

1. Log in as a root (administrator) user.
2. Insert the service CD-ROM in the CD-ROM drive.
3. Enter this command from the **/media/cdrom** directory:`./install_sp.sh -console`
4. Select one of these options:
   a. To read the Contact information, type **2** and press Enter.
      1) Type **0** and press Enter when finished.
      2) Type **1** and press Enter for the next dialog.
      3) Type **2** and press Enter for the previous dialog.
   b. To continue with the installation, type **1** and press Enter.
      1) Type **0** and press Enter when finished.
      2) Type **1** and press Enter for the next dialog.

5. Select the appropriate Service Pack, such as **Install InfoPrint Transform Manager V1.2 Service Pack 6**, and then click **Next**. The InstallShield Wizard steps you through the installation.
6. Press Enter for the next page from the License Agreement.
7. Read the license agreement and then type **q** to continue.
8. Enter **1** to accept the terms of the License Agreement.
9. Enter **0** and press Enter when finished. The default value is the number of compute nodes that are currently configured for use with Transform Manager.
10. Enter **1**. Read the summary information and then type **1**.

Chapter 8. Uninstalling Transform Manager

If you want to uninstall Transform Manager, you need to uninstall it from the xSeries server, the eServer BladeCenter, and the Linux server, as appropriate.

Uninstalling Transform Manager from an IBM xSeries server

This section describes the procedure for uninstalling Transform Manager from an IBM xSeries server.

To uninstall Transform Manager from an IBM xSeries server:

1. From the **Start** menu, select **InfoPrint Transform Manager**, and then select **Uninstall Transform Manager**. You see the Welcome to the uninstall program page.
2. Click **Next**. You see the summary page stating that the InstallShield Wizard will uninstall InfoPrint Transform Manager.
3. Click **Uninstall**. You see the page stating that Transform Manager has successfully uninstalled.
4. Click **Finish** to exit the wizard.

Uninstalling Transform Manager from an IBM eServer BladeCenter

This section describes how to uninstall Transform Manager from the head node on an IBM eServer BladeCenter.

Use this procedure from the blade that is acting as the head node.

When Transform Manager is uninstalled from the head node, it is also automatically uninstalled from the compute nodes.

To uninstall Transform Manager from an IBM eServer BladeCenter:

1. From the **Start** menu, select **InfoPrint Transform Manager**, and then select **Uninstall Transform Manager**. You see the Welcome to the uninstall program page.
2. Click **Next**. You see the summary page stating that the InstallShield Wizard will uninstall Transform Manager.
3. Click **Uninstall**. You see the page stating that Transform Manager has successfully uninstalled.
4. Click **Finish** to exit the wizard.

Uninstalling Transform Manager from the Linux server

This section describes how to uninstall Transform Manager from the Linux server from the command line.

To uninstall Transform Manager from the Linux server:

1. Log in as a root (administrator) user.
2. For a console uninstall, enter this command:
   `/opt/IBM/itm/_uninst/uninst_lchr.sh -console`
3. For a silent uninstall (does not produce any output and does not require user input), enter this command:
   `/opt/IBM/itm/_uninst/uninst_lchr.sh -silent`

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Chapter 9. Troubleshooting Transform Manager

As you use Transform Manager, you might need to diagnose error messages or work with Software Support to request trace information.

Transform Manager issues error messages as you work with the product. The location of these messages varies according to which print server is being used for transforms.

If you have determined that there is a problem based on error messages that have been issued, you might need to work with Software Support to request a trace of your Transform Manager system.

Troubleshooting with InfoPrint Manager

Errors found when Transform Manager is processing transform requests from InfoPrint Manager are logged in the Transform Server Job Log or the InfoPrint Manager error log. To access the job log, see “Displaying job information for a transform server” on page 28.

Related reference

“Transform Manager messages” on page 157
This section lists the Transform Manager messages.

Troubleshooting with InfoPrint ProcessDirector

Linux and AIX users can see transform error messages. Diagnosticians can find transform error messages in the system log and in the Transform Server Job Log. To access the job logs, see “Displaying job information for a transform server” on page 28.

Related reference

“Transform Manager messages” on page 157
This section lists the Transform Manager messages.

Troubleshooting with Infoprint Server for z/OS

z/OS users can see transform error messages on a trailer page that Infoprint Server for z/OS adds to the document as an option. Diagnosticians can find transform error messages in the z/OS system log and in the Transform Server Job Log. To access the job logs, see “Displaying job information for a transform server” on page 28.

Related reference

“Transform Manager messages” on page 157
This section lists the Transform Manager messages.

Configuring a trace for a transform server

The Properties Page for Transform Server Trace page lets you enable or disable tracing for the specified transform server. You only use this page when Software Support asks you to run a trace to help diagnose a problem.

To configure a trace:

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1. Click the hyperlink for the specific transform server that you want to trace on the Transform Manager main page. You see the **Properties Page for Transform Server: *n.nn.nnn.nnn***, where *n.nn.nnn.nnn* is the TCP/IP address for the transform server you selected.

   Properties are grouped on three tabs: General, Status, and Trace. You can view all of the properties at once by clicking **Show all tabs** in the left pane.

   Click **?** next to each entry field for information about it.
2. Click **Trace** to open the Trace page for the selected server.
3. On the Trace page, select **Enabled** or **Disabled** from the **Tracing** drop-down menu. **Enabled** activates tracing, and **Disabled** deactivates tracing. The default is **Enabled**.
4. If tracing is **Enabled**, you can:
   - Check one or more of the choices in the **Trace Settings** list box.
   - Enter a custom trace setting as directed by Software Support.
5. Click **OK**. You see a message in the message box and then you see the Transform Manager main page.

Chapter 10. Reference information for Transform Manager

As you use Transform Manager, you might want to see the details about the transforms it contains, usage notes, and messages.

This section contains reference information that includes:

- Guidelines for reading the syntax diagrams
- Transforms available with Transform Manager
- Usage notes for the print servers
- Transform Manager messages
- Transform IDs that Transform Manager uses

Reading syntax diagrams

The syntax for transforms is shown using graphic notation. To read the diagrams, go from left to right and top to bottom, following the main path line.

Style rules:

Syntax diagrams use these style rules to show how to enter commands and parameters:

- A word in uppercase ***must*** be spelled exactly as shown, but can be coded in any case. For example in coding, FORMDEF or FormDef or formdef are equivalent.
- A word in all italic, lowercase letters shows a parameter that you can replace. For example:

  file_name

  shows that you replace *file_name* with a file name that is retained in the library.

- A parameter above the line shows the default parameter. For example, **ioca** is the default parameter in the syntax diagram for the **gif2afp -a**.

Symbols:

Syntax diagrams use symbols to help you follow the flow of information they communicate:

- Statements begin with:

  ►►─

- And end with:

  ─►◄

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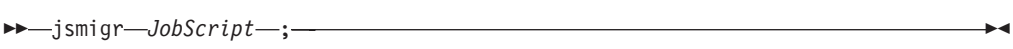
- Statements longer than one line continue to a second line with:
  →
- And resume with:
  ←

Required parameters:

A parameter that you must include is displayed on the main path line. For example, the syntax diagram for the **jsmigr** command:



shows that you must follow **jsmigr** with its required parameter.

If you choose from two or more required parameters, the parameters are shown with the first choice on the main path line and the other choices on branch lines under it. For example, the partial syntax diagram for the **gif2adfp** command with the optional parameter **-cmp**:

shows that you must type the command in any of these ways:

- **gif2afp -cmp none**
- **gif2afp -cmp mh**
- **gif2afp -cmp mmr**
- **gif2afp -cmp g3**
- **gif2afp -cmp g4**
- **gif2afp -cmp jpeg**

Optional parameters:

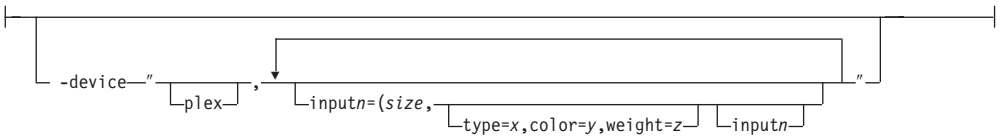
Parameters that you can include with a command are displayed on the branch line below the main path line.

Branch lines can include branch lines of their own.

Repeating parameters:

An arrow on a line above a parameter means that you can either repeat the parameter or enter more than one of the listed parameters.

The arrow above *FileName* means you can include one or more file name parameters with the transform.



Fragment elements

A syntax diagram can contain a section that either has too many items or groups to fit in the diagram or is used more than once. This section can be presented as a “fragment”, and given a label that corresponds to the section within the main diagram.

Using the transforms

This section describes the transforms and the possible options and values that Transform Manager uses:

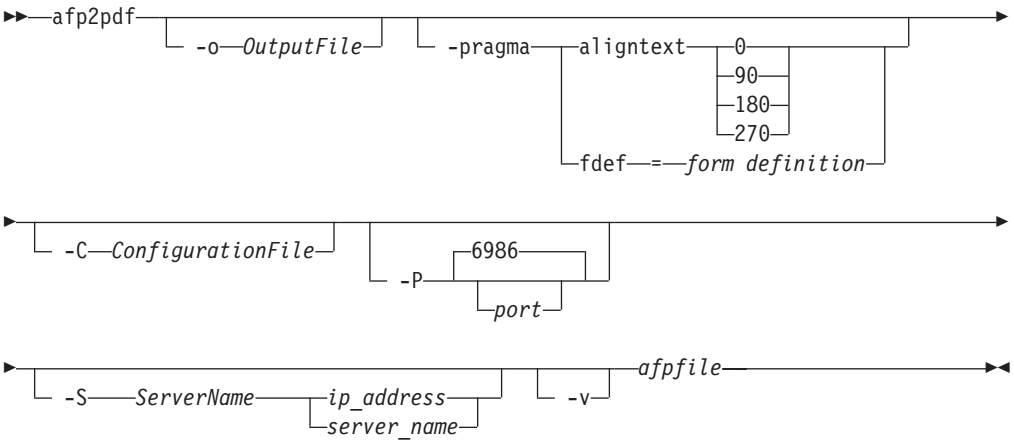
- AFP to PDF transform
- GIF to AFP transform
- JPEG to AFP transform
- PCL to AFP transform
- PDF to AFP and PS to AFP transforms
- SAP OTF and SAP ABAP to AFP transforms
- TIFF to AFP transform

Note: When the InfoPrint Transform Manager: afp2pdf Transform i-listed PRPQ, Program Number 5799-TWL, is purchased, Transform Manager supports the transform of AFP data to PDF data. For information about the **afp2pdf** transform, see *InfoPrint Transform Manager: afp2pdf Transform Installation and User’s Guide*, G550-0538.

User of InfoPrint Manager for AIX and Windows or Infoprint Server for z/OS can specify the transform options when they submit transform jobs and print jobs. For a description of exceptions or additional options and values that are available when using InfoPrint Manager for AIX and Windows or Infoprint Server for z/OS, see the publications for these products.

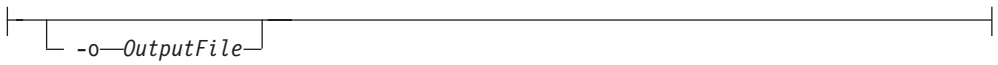
Transform AFP data to PDF

Syntax



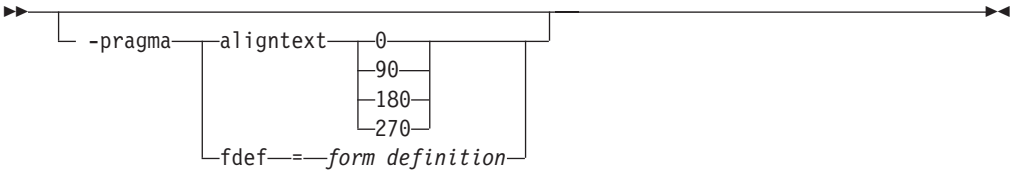
Note: You use the **afp2pdf** command on InfoPrint Manager for AIX or on InfoPrint Manager for Windows to start the **afp2pdf** transform with Infoprint Transform Manager; you use the **itm_driver** command on Infoprint ProcessDirector to start the **afp2pdf** transform with Infoprint Transform Manager; and you use the **remotexf/aoprxf.so** commands on Infoprint Server for z/OS to start the **afp2pdf** transform with Infoprint Transform Manager. The arguments and options for the commands are unique for each of these products. See the documentation for these products for details.

Parameters



Specifies the output path and file name of the output PDF file. By default, the output PDF file is placed in the same directory as the input file, and it has the same file name as the input file with the extension changed from **afp** to **pdf**. For example, when the PDF is generated from an AFP file named **afpdoc.afp**, an output file named **afpdoc.pdf** is created.

Note: If AFP is not used as the extension, a **pdf** extension is still added to the output PDF file.



Use **aligntext** to specify the rotation value to use when transforming the file. Valid values are **0**, **90**, **180**, or **270** (clockwise). Some AFP files might have already been formatted with a rotated orientation. If this occurs, text is aligned with the vertical axis of the paper rather than the horizontal axis. To correct this, you must use this parameter to align the text as desired.

Note: When you specify **alignтext**, you must specify the = sign. For example, **alignтext=90**.

Use **fdef** to specify the fully qualified file name of the form definition (FORMDEF) resource to be used when transforming the AFP file. For example,

```
-pragma fdef=c:\mydirectory\myformdef.fde
```

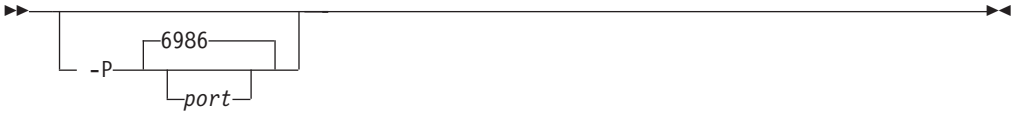
If an inline form definition is associated with the AFP document, then both the **fdef** from the configuration file and the command line are ignored. If **fdef** is not included in the configuration file or specified on the command line, the F1A10110 default form definition is used.

When you specify **-pragma**, you can specify **aligntext** or **fdef**, but not both.

Specifies the path and file name of the configuration file used with the transform. You can use the default configuration file supplied with the **afp2pdf** transform, or you can copy the default configuration file and modify it as appropriate. The configuration file contains option-value pairs. If you specify multiple **-C** options on the command line, the configuration files are processed in the order that you specify them and the results are additive.

Note: If no **-C** parameter is specified, the default configuration file is used. The default **afp2pdf** configuration file is located in:

For Linux
***install_path*/var/afp2pdf.cfg**



Specifies the port number that **afp2pdf** uses to make a connection with the Transform Manager (set by the **-S** flag). If you specify the **-P** flag, you must also specify the **-S** flag. And conversely, if you specify the **-S** flag, you must also specify the **-P** flag.

6986 The default port number if InfoPrint Manager is connected to Transform Manager.

port The port number you specify if InfoPrint Manager is connected to Transform Manager

Specifies the port number that **afp2pdf** uses to make a connection with the Transform Manager (set by the **-S** flag). The **-P** parameter is required to use the **afp2pdf** transform with Transform Manager. If you specify the **-P** flag, you must also specify the **-S** flag. And conversely, if you specify the **-S** flag, you must also specify the **-P** flag.

6986 The default port number that Transform Manager is listening on.

port The port number that Transform Manager is listening on.

Specifies the name of the system on which the Transform Manager is running. The value is:

ServerName
Any valid workstation name on which the Transform Manager is installed and running. The name is defined in **/etc/hosts** file or by a name server, and can be a nickname like **molly**, or a dotted decimal address like **9.99.9.23**.

Note: If you specify the **-P** flag, you must also specify the **-S** flag. And conversely, if you specify the **-S** flag, you must also specify the **-P** flag.

Specifies the name of the system on which the Transform Manager is running. The **-S** parameter is required to use the **afp2pdf** transform with Transform Manager. The values are:

ip_address
Any valid IP address for a server that the Transform Manager is installed and running on.

server_name
Any valid workstation name that the Transform Manager is installed and running on.

Note: If you specify the **-P** flag, you must also specify the **-S** flag. And conversely, if you specify the **-S** flag, you must also specify the **-P** flag.

Specifies verbose information will be generated to **stderr**.

Specifies the AFP input file to be transformed. This parameter is required.

The afp2pdf transform configuration file

Parameters to control settings for the **afp2pdf** transform are specified in a configuration file. By default, the name of this file is **afp2pdf.cfg**. For Linux, the file is located in ***install_path*/var**.

The syntax of the configuration file is exactly the same as the command line syntax with these additional rules:

1. Blank lines are ignored.
2. The information after a pound sign (#) is considered a comment and is ignored. The pound sign can occur anywhere on a line.
3. To include a pound sign in parameter data, it must be escaped; that is, it must be preceded by a backwards slash.
4. White space before and after parameter data is removed.
5. Parameter data on successive lines is concatenated with a single space between them.
6. Parameters can span lines as long as they follow rules 1 through 5.

Note: Options specified on the command line override options in the configuration file.

The parameters for the **afp2pdf** transform options are:

AFM_PATH=<*path***>**
This parameter specifies the path location of the Adobe Font Metrics (AFM) files that the transform uses. An AFM stores font metric data for a Type 1 PostScript font. It contains the master design of a specific font, which defines the way each character of the font looks. If a path is not specified, the default path is:

For Linux
install_path/afp2pdf/font/AFM

There is no command line flag associated with the **AFM_PATH** parameter.

CNV_PATH=<*path***>**
This parameter specifies the path location of the CNV files that the ICU library uses to convert text from one code page to Unicode and vice versa. If a path is not specified, the default path is:

For Linux
install_path/afp2pdf/cnv

There is no command line flag associated with the **CNV_PATH** parameter.

DEFAULT_CPID=<>*intValue*
This parameter specifies a default Code Page Identifier (CPID) to be used when transforming AFP or SCS files.

If a **DEFAULT_CPID** is not specified when transforming AFP files, a default value based on the `cpdef` file will be used.

If a **DEFAULT_CPID** is not specified when transforming SCS files, CPID 500 will be used as the default.

There is no command line flag associated with the **DEFAULT_CPID** parameter.

DEFAULT_FGID=<>*intValue*
This parameter specifies a default Font Global Identifier (FGID) to be used when transforming AFP or SCS files.

If a **DEFAULT_FGID** is not specified when transforming AFP files, a default value based on the `csdef` file will be used.

If a **DEFAULT_FGID** is not specified when transforming SCS files, FGID 11 (Courier) will be used as the default.

There is no command line flag associated with the **DEFAULT_FGID** parameter.

DISABLE_MEMSREAM=(TRUE|FALSE)

When this parameter is set to **TRUE**, it specifies that during the transformation, the content of the PDF document will be written in temporary files created on disk, no matter the size of the AFP document. This parameter is useful if the output PDF document is too large to be kept in memory until the transformation is completed. By default, the PDF document content is kept in memory for an AFP document smaller than 10 MB; otherwise, temporary files are used.

There is no command line flag associated with the **DISABLE_MEMSTREAM** parameter.

ENABLE_AUTO_FONT_IMAGE=(TRUE|FALSE)

When this parameter is set to **TRUE**, it specifies that the output PDF document will contain an image for each character that was written with a raster font in the AFP document. By default, the raster fonts will be replaced with another font, and all characters will be written as text in the PDF document. However, some of the characters might look different from their raster form.

There is no command line flag associated with the **ENABLE_AUTO_FONT_IMAGE** parameter.

FOCA_FONT_PATH=<*path*>

This parameter specifies the path where the AFP FOCA fonts are installed. The default path is:

For Linux

install_path/afp2pdf/reslib

There is no command line flag associated with the **FOCA_FONT_PATH** parameter.

FONT_PATH=<*path*>

This parameter specifies the path location of the font files that the transform uses when writing the PDF document. If a path is not specified, the default path is:

For Linux

install_path/afp2pdf/font

There is no command line flag associated with the **FONT_PATH** parameter.

MAX_OBJECTS=<*number*>

This parameter specifies the maximum objects that can be listed in the PDF cross-reference table (XREF). If the AFP file contains more objects than this, the additional ones are ignored. This setting is provided for use with the **MAX_PAGES** setting. For example, if **MAX_PAGES** is set to a number greater than 1000, the value assigned to **MAX_OBJECTS** might need to be set to a number greater than 50000.

By default, **MAX_OBJECTS** and **MAX_PAGES** are commented out, which does not limit the number of objects or pages.

There is no command line flag associated with the **MAX_OBJECTS** parameter.

MAX_PAGES=<*number*>

This parameter specifies the maximum pages to be converted. You can use this parameter to limit the number of pages generated by the transform. For example, if the number of pages in an AFP document is not known and you

want to limit disk space usage, you might want to set a limit on the number of pages generated by the transform. Limiting the number of pages can also improve transform performance.

By default, **MAX_PAGES** and **MAX_OBJECTS** are commented out, which does not limit the number of pages or objects.

There is no command line flag associated with the **MAX_PAGES** parameter.

OVERLAYEXT=<*ListOfExtenstions***>**
PAGESEGEXT=<*ListOfExtenstions***>**
FORMDEFEXT=<*ListOfExtenstions***>**
JFIFext=<*ListOfExtenstions***>**
GIFEXT=<*ListOfExtenstions***>**
TIFFEXT=<*ListOfExtenstions***>**

These parameters specify the accepted extension for a resource type. The possible extension are separated by a comma (,). For each extension, a * (asterisk) will be replaced with the name of the searched resource. Therefore, specifying an * (asterisk) means no extension.

When searching by name in the **RESOURCEDATAPATH**, the transform first tries the name with no extension. If it does not succeed, it tries with every extension from the list until the resource is found.

By default, the extension list is an * (asterisk).

There is no command line flag associated with these parameters.

PDF_FONT_MAP_FILE = <*path***>**

This parameter specifies the path location of the `fontmap.lst` file that maps the Type 1 Fonts. When specified, it means that the user wants to embed Type 1 Fonts into the PDF document. If a path is not specified, the default path is:

For Linux

***install_path*afp2pdf/font/fontmap.lst**

There is no command line flag associated with the **PDF_FONT_MAP_FILE** parameter.

PFMPFB_DIRECTORY=<*path***>**

This parameter specifies the path location of the Adobe Type 1 outline font files that the transform uses when embedding fonts inside of the PDF document. When simple font substitution is not acceptable in the PDF output, it is possible to embed a custom Type 1 font inside the PDF for better results. If a path is not specified, the default path is

For Linux

***install_path*/font/type1** or ***install_path*/font/AFM**

Note: Placing Type 1 font files in this directory does not mean that they are automatically placed inside of the PDF file. For a font to be embedded, it must be mapped using the transform font definition files. See “Embedding Type 1 Fonts” on page 59 for more information.

There is no command line flag associated with the **PFMPFB_DIRECTORY** parameter.

PRAGMA_FDEF= <*filename***>**

This parameter specifies the file name of the form definition (FORMDEF)

resource to be used when transforming the AFP file. If an inline form definition is associated with the AFP document, then both the **FDEF** from the configuration file and the command line are ignored. If **FDEF** is not included in the configuration file or specified on the command line, the F1A10110 default form definition is used.

PRAGMA_ALIGNTEXT=<*angle***>**
This parameter specifies the rotation value to use when transforming the file. Valid values are **0**, **90**, **180**, or **270** (clockwise). Some AFP files might have already been formatted with a rotated orientation. If this occurs, text is aligned with the vertical axis of the paper rather than the horizontal axis. To correct this, you must use this parameter to align the text as desired.

VERBOSE
This parameter specifies verbose information will be generated to **stderr**.

OUTPUTFILE=<*path+filename***>**
This parameter specifies the *path* and *filename* of the output PDF file. By default, the output PDF file is placed in the same directory as the input file, and it has the same file name as the input file with the extension changed from **afp** to **pdf**. For example, when the PDF is generated from an AFP file named **afpdoc.afp**, an output file named **afpdoc.pdf** is created.

Note: If AFP is not used as the extension, a **pdf** extension is still added to the output PDF file.

RESOURCEDATAPATH =<path>
This parameter specifies the path location of the resource library. For all the external resources used by the AFP document (formdef, overlay, page segment, jfif, gif, IOCA image), the transform looks for them in this specified path. If a path is not specified, the default path is:

For Linux
install_path\afp2pdf\reslib;install_path\reslib

There is no command line flag associated with the **RESOURCEDATAPATH** parameter.

TT_FONT_PATH=<*path***>**
This parameter specifies the location of the TrueType font or the TrueType Collection used. If a path is not specified, the default path is:

For Linux
install_path/afp2pdf/font/truetype

Using the afp2pdf tracing and logging facility

Parameters to control settings for the tracing and logging facility of **afp2pdf** transform are specified in a configuration file. By default, the name of the file is **tracer.cfg**. The tracing facility can provide a large amount of information about how the transform performed the operations and also how the code was run.

The new tracing/logging facility uses a hierarchical model with nine levels of details:

OFF All traces are not logged.

SEVERE
Only severe errors are logged.

WARNING
The severe errors and warnings are logged.

CONFIG
All above and also the configuration information are logged.

INFO All above and general information messages are logged.

FINE All above and fine debugging messages are logged.

FINER All above and finer debugging messages are logged.

FINEST
All above and finest debugging messages are logged.

ALL All messages are logged.

By default, all traces are off and no messages are logged in the trace file. To start the tracer/logger, follow these steps:

1. The **tracer.cfg** file is located in the same directory as the **afp2pdf.exe**, and it looks like this:

```
; BEGIN OF TRACER.CFG FILE
;
; This file is used for configuring the tracer.
;
; ALL KEYS AND VALUES FROM THIS FILE ARE CASE SENSITIVE!!!
;
; Key name:         TRACE-LEVEL
; Possible values:  OFF,SEVERE,WARNING,CONFIG,INFO,FINE,FINER,FINEST,ALL
; Default value:    OFF
; Description:      Set the level of details that are recorded by the tracer.
;                   The order of the values is also the level of visibility. For example:
;                   if the tracer is set to level CONFIG, all levels prior to this level are
;                   recorded (SEVERE, WARNING and CONFIG).
;                   OFF is to shutdown the trace completely
;                   ALL is the most detailed level of tracing
TRACE-LEVEL         = INFO

; Key name:         TRACE-PATH
; Possible values:  A valid location on the disk. If empty then the trace will use the
;   current working directory.
; Default value:
; Description:      Specifies where the log files are going to be created.
TRACE-PATH          =

; Key name:         TRACE-FILENAME
; Possible values:  A filename that contains the %d or %u inside of it.
; Default value:    trace%d.log
; Description:      This is used as template for creating the trace filename. The %d or %u is
;                   used to specify the current number of the trace.
TRACE-FILENAME      = trace%d.log

; Key name:         MAX-BACKUP-TRACE
; Possible values:  A positive number
; Default value:    3
; Description:      This field specifies how many backups of the trace should be kept on the disk
;                   before start deleting them.
MAX-BACKUP-TRACE    = 3


; Key name:         TRACE-MAX-SIZE
; Possible values:  A positive number for the size of the trace file in bytes.
; Default value:    5242880 ~ 5Mb
; Description:      This field specifies how big the trace file should be before wrapping
;                   the file.
TRACE-MAX-SIZE      = 5242880

; Key name:         OUTPUT-TO-STDERR
; Possible values:  YES,NO
```

```
; Default value:    NO
; Description:      This field tells if the trace messages should be sent to standard error or
;   not. This parameter can be combined with OUTPUT-TO-STDOUT and OUTPUT-TO-FILE
;                   for writing to multiple locations.
OUTPUT-TO-STDERR    = NO

; Key name:         OUTPUT-TO-STDOUT
; Possible values:  YES,NO
; Default value:    NO
; Description:      This field tells if the trace messages should be sent to standard output or
;                   not
OUTPUT-TO-STDOUT    = NO

; Key name:         OUTPUT-TO-FILE
; Possible values:  YES,NO
; Default value:    YES
; Description:      This field tells if the trace messages should be sent to the trace file or
;                   not
OUTPUT-TO-FILE      = NO

; END OF TRACER.CFG FILE
```

Note: All keys and values in **tracer.cfg** are case-sensitive.

2. Copy the sample **tracer.cfg** file into the **var/afp2pdf** or the ***install_path*\afp2pdf** for Windows directory.
3. Configure the parameter **OUTPUT-TO-FILE** to **YES**. And specify the location where the trace files should be created by configuring the parameter **TRACE-PATH** to **/var/afp2pdf**.
4. On the next launch of the executable, the application will write the traces to the path configured in step 3.

Note: You will need to modify the **pdcapture** command to include the **tracer.cfg** and **trace*.log** files that are located in the **var/afp2pdf** directory.

Using AFP resources

The **afp2pdf** transform uses these AFP resources:

- Page segments
- Overlays
- Form definitions

The **afp2pdf** transform does not process AFP font files. If the program encounters resources of this type, they are ignored. To display text, the transform uses an existing set of predefined fonts. Font definition files that map the standard AFP fonts to Acrobat fonts for PDF are provided. If your AFP document uses AFP fonts that you have customized or created, you must map these fonts. For information about mapping AFP fonts, see “Mapping AFP fonts” on page 60.

The page segment, overlay, and form definition resources can be passed to the transform from these locations:

Inline resource group

The AFP resources needed by the AFP data file are combined into a logical resource library for the document. This resource group is contained in the AFP file along with the AFP document.

Resource directories

The **afp2pdf** transform provides a resource directory for external resources. On AIX, the directory is **/usr/lpp/psf/afp2pdf/reslib**, and on Windows, the directory is ***install_path*\afp2pdf\reslib**.

If InfoPrint Manager is installed, the **afp2pdf** transform also uses the InfoPrint Manager directory. If InfoPrint Manager for AIX is installed, the **afp2pdf** client uses the **/usr/lpp/psf/reslib** resource directory. If InfoPrint Manager for Windows is installed, the **afp2pdf** client uses the ***install_path*\reslib** resource directory.

The **afp2pdf** transform uses a resource directory local to the Infoprint Transform Manager server.

For external resources, copy the resources:

For Linux:

***install_path*/reslib**

Note: The InfoPrint Manager resource directories are not used by the **afp2pdf** client when **afp2pdf** communicates with InfoPrint Transform Manager. These resource directories are used when **afp2pdf** runs natively on InfoPrint Manager for AIX or InfoPrint Manager for Windows.

Embedding Type 1 Fonts

When a custom AFP font is used in an AFP document, it might be necessary to generate an equivalent Type 1 outline font. You can configure the transform program to embed this Type 1 outline font in the output PDF file for proper display.

The Type 1 font must be in binary (PFB/PFM) format. If a font is in ASCII (AFM/PFA) format, you must convert it before it can be used with the transform. Type 1 fonts typically consist of a printer font binary (PFB) file and a printer font metrics (PFM) file. The PFB file contains the mathematical descriptions (in the PostScript language) for each character. The PFM file contains the font metrics needed for the characters.

For example, assume a Type 1 font is made up of the files **CustFont.pfb** and **CustFont.pfm**. The file extensions of **pfb** and **pfm** files must be lowercase for the transform to correctly identify these files. The font file name, **CustFont** must be the same for both the **pfb** and **pfm** files.

For the transform to use these files, you must specify:
- Where the files are located.
- When the files should be substituted for a specific AFP font.

File location: All Type 1 font files that can be used for embedding fonts into the PDF file must be placed into a single directory. This directory is then specified with the **PfmPfb_Directory** parameter in the transform options file. See “The afp2pdf transform configuration file” on page 52 for more information.

Mapping the AFP font to the embedded Type 1 font:

Usually, the embedded Type 1 font name is specified in the **alias.fnt** font mapping configuration file. Under the **FONT** section, a font name and font metric file name are specified for the font:

```
[FONT]
font=font_name,font_metic_name
```

Where:

FONT Defines the name by which this font is known and is referred to by the transform's other font configuration files. For example, **Custom1**.

font_name
Specifies the name of the font, such as **CustFont**. This name is case-sensitive and must match the file name of the PFB/PFM files.

font_metric-name
Specifies the file name for the font metric information. If it is set to **NULL**, it indicates that extra font metric information is not used.

In this example, if the AFP font is mapped to **Custom1**, the Type 1 font, **CustFont**, is embedded inside the output PDF file and the appropriate text uses this font for the display:

```
[FONT}
Custom1=CustFont,NULL
```

See "Mapping AFP fonts" for more information about mapping fonts.

Mapping AFP fonts

The **afp2pdf** transform needs to map the AFP fonts your document was created with to fonts that can be used in PDF documents. For the **afp2pdf** transform to map the best matching fonts to display your AFP document, the transform needs to know certain characteristics about the fonts that were used to create your document. Mapping AFP fonts is done with the font definition files installed as part of the **afp2pdf** transform. These files are loaded into the **FONT** subdirectory under **/usr/lpp/psf/afp2pdf** for AIX and ***install_path*\afp2pdf** on Windows. **FONT** subdirectory with an **AFM** subdirectory and a **Type1** subdirectory. You can edit them using any text editor. The shipped version of the font definition files maps the IBM Core Interchange (Latin only), compatibility, coordinated, and Data1 fonts for you. If your document uses an AFP font that is not listed in the font definition files, you need to add it. If you have generated modified font definition files for viewing AFP files for the AFP Workbench or for the AFP plug-in, some of the same files can be reused for the **afp2pdf** transform. The **icoded.fnt**, **coded.fnt**, **csdef.fnt**, **cpdef.fnt**, and **icudt38l_ibm-*CPGID*_*.cnv** files can be copied and used for the transform. Do not try to reuse the **ALIAS.fnt** file.

When you need to map fonts:

If you are using fonts that are not defined for the **afp2pdf** transform, if you have modified the IBM AFP fonts, or if you have created your own AFP fonts, you need to define those fonts in the font definition files:

- If you created a new coded font or renamed one, you need to define the coded font in the Coded Font File (**icoded.fnt** or **coded.fnt**).
- If you created a new character set, you must define it in the Character Set Definition File (**csdef.fnt**).
- If you created a new code page, you must define it in the Code Page Definition File (**cpdef.fnt**).
- If you have created a new code page or modified a code page by moving characters, you need to create a new Code Page Map File (**icudt38l_ibm-*CPGID*_*.cnv**).

Note: If you have only modified an existing IBM font component, such as by deleting code points in the IBM code page, you might not need to do any of the these definitions.

The afp2pdf transform files supplied for mapping fonts:

Table 1 lists the **afp2pdf** transform font support files and the subdirectories in which they are installed.

Table 1. afp2pdf font support files

File	File Name	Subdirectory	Description
Coded Font File	icoded.fnt coded.fnt	FONT	Specifies which AFP code page and AFP font character set make up the coded font.
Character Set Definition File	csdef.fnt	FONT	Defines AFP character set attributes, such as point size. It also maps the font character set to the font global identifier.
Code Page Definition File	cpdef.fnt	FONT	Maps each AFP code page to a Web browser character set and indicates which Code Page Map File to use for the **afp2pdf** transform.
Code Page Map File	icudt34l_ibm-*CPGID*_*.cnv	CNV	The .CNV files for ICU UCONV are used for character conversion.
Alias File	alias.fnt	FONT	Maps the font type families to an associated font metric file; also maps the font family type to be used during the transform.
Font Metric Information File	*fontname*.AFM	FONT then AFM	Contains the font metric information, which is the dimension of each of the characters.
Note: 1. **`coded.fnt`** is optional and is meant to contain coded fonts you have created. 2. *Character set* is similar to the AFP term code page.			

Coded Font File:

The IBM Coded Font File maps AFP coded fonts to their AFP character sets and AFP code pages. Use these two Coded Font Files with the **afp2pdf** transform:

icoded.fnt
This file contains definitions for approximately 2500 IBM-supplied coded fonts.

coded.fnt
You can create this optional file to define a list of any coded fonts you have created and place it in the FONT subdirectory.

If a **coded.fnt** file exists in the FONT subdirectory, it is searched first for the coded fonts used in an AFP file. Here is an example of the contents of the **coded.fnt** file:

```
X?A155N2 = C?A155N1, T1DCDCFS
X?AE10 = C?S0Ae10, T1S0AE10
X?GT10 = C?D0GT10, T1D0BASE
X?ST15 = C?D0ST15, T1D0BASE
X?A0770C - C?A07700, T1GI0361
X0T0550C = C0T05500, T1DCDCFS
```

Rule: A question mark (?) can only be used as the wildcard character for the second character in the coded font name and the character set name. With this rule, all the character rotations of the coded fonts can be handled with one entry or searching.

Note: A sequential search is performed for the coded font, and the first match is used, including the wildcard character.

After the coded font name, the character set name must be listed first, followed by the code page name.

The character set and code page must be separated by a comma.

Character Set Definition File:

The Character Set Definition File (**csdef.fnt**) specifies the character set attributes and font global identifier of the font. It is split into two sections: one for the character sets (CHARSET) and one for the global identifier (FGID).

CHARSET Section:

This example shows an example of the CHARSET section in the **csdef.fnt** file:

```
[CHARSET]
;charset = fgid, height, width, strikeover, underline
C?H200A0=2304,110,73,0,0
C?H200D0=2304,140,93,0,0
C?N200B0=2308,120,80,0,0
C?4200B0=416,120,144,0,0
C?D0GT15=230,80,96,0,0
C?A155A0=33207,110,73,0,0
C?A155A0=33227,110,73,0,0
C?T055D0=4407, 140,93,0,0
C?T17500=4555,100,67,0.0
C?T17560=4555,60,40,0,0
DEFAULT=2308,80,0
```

The CHARSET section lists each AFP font character set and its corresponding attributes. Table 2 on page 63 describes the attributes and values for CHARSET.

Table 2. CHARSET section

Attribute	Values	Shipped Default	Description
fgid	IBM-defined font global identifer (FGID) or your own FGID in one of these ranges: 3840 to 4096 65260 to 65534	2308	A unique value that identifies the type family, typeface, and sometimes the point size of the character set.
height	1 to 990	80	The vertical size of the character set (minimal baseline-to-baseline value) expressed in tenths of a point. For example, a 9-point font would have a height of 90.
width	0 to 99 (currently ignored)	0	The average horizontal size of the characters in 1440th of an inch. Currently, 0 is always used because Windows determines an appropriate font width based on the font height.
strikeover	1 = YES 2 = NO	0	A font whose characters all have a line, parallel to the character baseline, placed over the middle of the character.
underline	1 = YES 2 = NO	0	A font whose characters all have a line, parallel to the character baseline, placed under the character.

FGID Section:

Figure 2 shows an example of the FGID section in the **csdef.fnt** file.

```
[FGID]
 ;fgid = familyname, style, weight, italic
 230=Gothic, MODERN,MED,0
 416=Courier,MODERN,MED,0
 2304=Helvetica,SWISS,MED,0
 2308=TimesNewRoman,ROMAN,MED,0
```

Figure 2. FGID section in csdef.fnt file

The FGID section lists each font global identifier and its corresponding attributes. Table 3 describes the attributes and values for FGID.

Table 3. FGID section

Attribute	Values	Shipped Default	Description
familyname[1]	Any Web browser font	Times New Roman	An outline font name or an AFP type family name
style	SWISS[2] ROMAN[3] SCRIPT[4] MODERN[5] DISPLAY[6]	ROMAN	

Table 3. FGID section (continued)

Attribute	Values	Shipped Default	Description
weight	LIGHT, MED, BOLD	MED	The degree of boldness of a typeface caused by different thicknesses of the strokes that form a graphic character.
italic	1 = YES 2 = NO	0	A font whose characters slant to the right.

Rules:

1. Attributes must be separated by a comma.
2. In the `CHARSET` section of the file, only **fgid** and **height** are required.
3. In the `FGID` section of the file, only **familyname** and **style** are required.
4. A question mark (?) can only be used as the wildcard character for the second character in the character set name. With this rule, all the character rotations of the coded fonts can be handled with one entry while searching.

   Note: A sequential search is performed for the character set, and the first match is used, including the wildcard character.
5. The `CHARSET` section must come before the `FGIC` section in the file.
6. You can set a default character set. The default character set that is defined in the file must be the last entry in the `CHARSET` section.
7. If you add your own AFP font character set to the `CHARSET` section, you must assign it a font global identifier. If the new character set has the same familyname, style, weight, and italic attributes as an existing character set, you can use the same font global identifier; otherwise, you must add a unique font global identifier to the `FGID` section.

Code Page Definition File:

The Code Page Definition File maps the IBM AFP code page name to its code page global identifier (`CPGID`) and to a Web browser character set. The section header `CODEPG` is followed by a list of AFP code pages and their attributes. The first attribute in each line is the AFP code page global identifier that maps to a Code Page Map File (see “Code Page Map File” on page 65 for more information about mapping code pages). The second attribute is the Web browser character set that you decide is the best match for your AFP code page. The last line gives the default attribute values to be used when a default is required. Figure 3 on page 65 shows an example of the contents of the **`cpdef.fnt`** file.

---

1. *familyname* is the same as *type family* in AFP fonts and *typeface name* in Windows.
2. SWISS is a proportionally spaced, sans serif font.
3. ROMAN is a proportionally spaced, serif font.
4. SCRIPT is a fixed-pitch font designed to look like handwriting.
5. MODERN is a fixed-pitch, sans serif or serif font.
6. DISPLAY is a decorative font.

```
[CODEPG]
 ;codepage = cpgid,wincp
 T1DCDCFS=1003,ANSI
 T1DEBASE=2058,ANSI
 T1D0BASE=2063,ANSI
 T1D0GP12=2085,ANSI
 T1GI0395=2079,ANSI
 T1GPI363=2066,SYMBOL
 T1V10037=37,ANSI
 T1V10273=273,ANSI
 T1000290=290,ANSI
 T1000310=310,ANSI
 T1000423=423,ANSI
 T1000905=905,ANSI
 DEFAULT=361,ANSI
```

Figure 3. Example of cpdef.fnt

Table 4 describes the attributes and values for CODEPG.

Table 4. CODEPG section

Attribute	Values	Shipped Default	Description
cpgid	Pre-defined CPGID or your own defined CPGID in the range 65280 to 65534	361	Code page global identifier
wincp	ANSI or SYMBOL	ANSI	Windows character set

Rules:

1. Attributes must be separated by a comma.
2. Only the first attribute, **cpgid**, is required.
3. You can set a default code page. The default code page that is set in the file must be the last entry in the file.
4. If you create your own code page, you must assign it a unique code page identifier. Leading zeros are not valid. (You can use an IBM code page global identifier, but only if the character-to-hexadecimal code mapping is the same for your code page.)

Code Page Map File:

To add a new code page to the ICU UCONV, you need to obtain or create a source mapping data file, which has a file extension of .ucm, corresponding to the desired code page. A large archive of converter data is maintained by the International Components for Unicode (ICU) Web site. You can compile the source mapping data files (.ucm files) into binary converter files (.cnv files) by using the ICU tool **makeconv** and entering this command:

```
makeconv -p ICUDATA file.ucm
```

Where, the *file*.ucm represents the .ucm source file.

Note: The source code of **makeconv** can be found on the ICU Web site.

When the **afp2pdf** transform is installed, a CNV folder is created under the **afp2pdf** transform destination folder. The CNV folder is used as storage for the binary converter .cnv files. When the corresponding .cnv file is added to the CNV folder, the code page will be available to the transform.

Alias File:

The Alias File (**alias.fnt** lists the font metric file name and the font family name aliases in the FONT section. Font family name aliases let you change all of the requested instances of a font family name (as defined in the Character Set Definition File) to another font family name.

Figure 4 shows how the **alias.fnt** file is used with the **afp2pdf** transform to change all requests for the Sonoran Serif font to requests for the Times New Roman font.

Note: Font family name remapping, especially to TrueType fonts, can cause misalignment of text characters because the display font is not the same as the font used to create the AFP document. Remapping of one font family name to a different font family name with very different characteristics (such as STYLE) might mean a matching font cannot be found. You receive an error message if either font substitute cannot be found.

```
[FONT]
 ; ***** Requested font = Type 1 font, TrueType font *****
 Book=TNR,Times New Roman
 CourierOverstrike=Cou,Courier New
 SonoranSerif=TNR,Times New Roman
 SonoranSansSerif=TNR,Arial
 Text=Cou,Courier New
```

Figure 4. Example of how the alias.fnt file is used

Figure 5 shows how the **alias.fnt** file is used with the **afp2pdf** transform to change all requests for the SonoranSerif font to requests for the Times font (which is one of the base fonts available in the Adobe Acrobat Viewer).

```
[FONT]
 ; ***** Requested font = font name,Font metric/AFM filename (or 'NULL' for not used) *****
 SonoranSerif=Times, NULL
```

*Figure 5. Using the `alias.fnt` file with **afp2pdf** transform*

Rules:

1. If multiple mappings are listed in the file for the same family name, only the first match is used.
2. The Alias File is processed sequentially and is not chained (for example, if ″Century Schoolbook″ is set equal to ″Times″, and ″Times″ is set equal to ″Times New Roman″, ″Century Schoolbook″ is not set to ″Times New Roman″).
3. Blanks in family names are treated as characters (for example, ″New Century Schlbk″ is not the same font as ″NewCenturySchlbk″).

Mapping your fonts to the afp2pdf transform:

After determining which font files you need to modify, use these steps to map your fonts:

1. Gather the information needed to define the fonts in the font definition files.
2. Make backup copies of any of these font definition files you plan to modify:

```
csdef.fnt
cpdef.fnt
icoded.fnt
alias.fnt
```

3. Substitute any non-matching characters in the Code Page Map File. See “Code Page Map File” on page 65 for information about Code Page Map Files.
4. Edit the **cpdef.fnt** file and add your code page name, code page identifier, and the best matching Web browser character set name for the fonts you are using.
5. If you have created a new character set, edit the **csdef.fnt** file and add your character set name in the CHARSET section. Specify the correct attributes for your font in the **csdef.fnt**. Add the appropriate information in the FIGID section of the file if you are naming a new font global identifier.
6. If you have created a coded font, create or edit the **coded.fnt** file and add your coded font.

Mapping fonts with non-Latin encodings:

When you use external fonts that contain glyphs that are not part of the Latin encoding, use this procedure to embed them in the PDF file.

1. Embed the font as described in “Embedding Type 1 Fonts” on page 59
2. When mapping the codepage in the `cpdef.fnt` file, specify the encoding to use:
   - ARABIC
   - GREEK
   - HEBREW
   - LAO
   - LATIN4
   - ORCA
   - ORCB
   - THAI
   - VIETNAMESE
3. Make sure a `.cnv` file is available for the specified code page.

Using TrueType fonts

The **afp2pdf** transform supports the use of TrueType fonts.

Embedding TrueType fonts:

With the afp2pdf PRPQ Version 1.5, you can convert an AFP document that contains TrueType fonts.

The TrueType fonts are embedded into the resulting PDF document.

By using embedded fonts, the size of the PDF file increases.

Mapping TrueType fonts:

If the AFP document you are converting to PDF contains TrueType fonts, you can create a smaller PDF document by adding the TrueType fonts to the `ttdef.fnt` file.

When you add the TrueType fonts to the `ttdef.fnt` file, you need to include details about the fonts, such as *familyname*, *style*, or *weight*.

Listing TrueType fonts in the ttdef.fnt file is especially useful when you have DBCS TrueType fonts that are over 25 megabytes each. The **afp2pdf** transform allows you to map the DBCS TrueType fonts to Type0 fonts. By adding the DBCS TrueType Font to the ttdef.fnt file and setting the *familyname* to JpnSys1 or JpnSys2, the **afp2pdf** transform maps the DBCS TrueType font to either KozGoPro-Medium or KozMinPro-Regular.

The **afp2pdf** transform uses this search order for TrueType fonts:

1. The ttdef.fnt file is searched for the code page and character set pair.
2. The **afp2pdf** transform searches the TrueType font in the specified TT_FONT_PATH.
3. If the client is unable to locate the TrueType font, a message is be issued, the **afp2pdf** transform uses the default font listed with the DEFAULT = option in the ttdef.fnt file.

Using the configuration file for TrueType fonts:

The **afp2pdf** transform uses a configuration file called ttdef.fnt to support TrueType fonts.

The ttdef.fnt file is similar to the csdef.fnt file. You use the ttdef.fnt file to map each TrueType font to a known Type 1 or Type 0 font.

The syntax of the ttdef.fnt file uses the same rules that are defined by the csdef.fnt, where comments are defined as ';'. The Full Font Name is extracted from the x'02' triplet (FQNType is x'DE') of the Map Data Resource (MDR). The Full Font Name is used to search the ttdef.fnt and the resource name when issuing the open_input handler command.

The encoding of the ttdef.fnt should be UTF-8 to make sure all font names can be rendered within the file. The familyname must convert to ANSI without any characters lost if aliasing for font name is used. For example:

```
ttdef.fnt
[TRUETYPE]
;full font name = familyname,style,weight,italic
Times New Roman=TimesNewRoman,ROMAN,MED,1
MS Gothic=JpnSys,SWISS,MED,0
MS Mincho=JpnSys2,ROMAN,MED,0
...
DEFAULT=TimesNewRoman,ROMAN,MED,1
```

The ttdef.fnt file is located in these directories:

On Linux

***install_path*/afp2pdf/font**

Using Outline fonts

The **afp2pdf** transform supports Outline Font Object Content Architecture (FOCA). The addition of FOCA support improves character placement for AFP raster fonts and provides 100% font fidelity for AFP outline fonts.

Outline fonts can be embedded as internal resources, or they can be referenced as external resources and mapped. In either case, the font may be defined through the coded font name or with a character set/code page pair.

The **afp2pdf** transform parses and extracts the outline font character set information it needs when outputting the text and saves the information in these files:

PFM file
: Contains general information about the outline font obtained from the character set. This file can be external, saved on the hard drive, or kept in memory.

PFB file
: Contains the data about the outline font. It must be extracted and kept on the hard drive or in memory.

For both cases (embedded or external Outline font) the PFM and PFB files are embedded within the PDF document, and the text is written in the PDF file using the embedded PFM and PFB information.

The **afp2pdf** transformer creates a temporary `cnv` file to be used by ICU for the conversion of text from Unicode to the specified codepage and for the conversion of text from the code page to Unicode.

Using non-Latin code pages with Outline fonts:

The **afp2pdf** transform supports non-Latin codepages for AFP Outline fonts.

These non-Latin code pages are supported:

259
290
420
423
424
833
836
838
870
875
880
892
893
904
1025
1026
1027
1097
1112
1122
1130
1132
1153
1154
1155
1156
1157
1158
1160
1164

When an AFP document contains text written in one of the supported non-Latin code pages, the **afp2pdf** transform uses a corresponding AFP Outline Font. Each code page has a corresponding AFP Outline font. The location of the AFP Outline fonts is specified in the configuration file using the `Foca_Font_Path` option. To display the text written with the non-Latin code-pages within the PDF, the **afp2pdf** transform extracts the PFB file from the AFP Outline Fonts and creates a PFM file. The resulting files are embedded within the PDF stream. When a non-Latin code page does not find the corresponding AFP Outline Font, the **afp2pdf** transform converts the text to a default code-page. This default code page is set in the `cpdef.fnt` file. The default code page is one of the base-14 Standard PDF fonts.

To accommodate the non-Latin code pages, these options have been added to the `afp2pdf.cfg` file. The configuration file ("afp2pdf.cfg") has these new options:

For AIX

`Foca_Font_Path = /usr/lpp/psf/fontlib` specifies the path for the AFP Outline fonts.

For Windows

`Foca_Font_Path = \`*`install_path`*`\fontlib` specified the path for the AFP Outline fonts.

For Linux

`Foca_Font_Path = /`*`install_path`*`/fontlib` specified the path for the AFP Outline fonts.

Note: If the configuration file does not contain the `Foca_Font_Path` entry, the **afp2pdf** transform searches within `/usr/lpp/psf/fontlib` for AIX and `\`*`install_path`*`\fontlib` for Windows and `/`*`install_path`*`/fontlib` for Linux.

Mapping outline fonts:

If the AFP document you are converting to PDF contains Outline fonts, you can create a smaller PDF document by adding the Outline fonts to the `afp2pdf.cfg` file.

You use the `Foca_Font_Path` option in the `afp2pdf.cfg` file to specify the path and name of the coded font. The name can be an actual coded font name or a character set/code page pair that identifies the font.

The **afp2pdf** transform uses this search order for Outline fonts:

1. The font directory specified with the `Foca_Font_Path` value in the `afp2pdf.cfg` is searched.
2. When an Outline font is not found in the `Foca_Font_Path` value in the `afp2pdf.cfg`, the **afp2pdf** transform uses a default font. The default font is a Type1 font, one of the PDF Base 14 Fonts, or one of the virtual DBCS (Type0) fonts. You specify the default font in the `csdef.fnt` file.

Using raster fonts

The **afp2pdf** transform supports the use of raster fonts. Raster fonts contain a set of bitmaps that represent the character shapes for a certain font.

When you use raster fonts to create a PDF file, the **afp2pdf** transform uses the information received from the FOCA structure fields (character glyphs and widths) to create an Adobe PDF Type3 font. This Adobe PDF Type3 font contains an Encoding dictionary. The text written with this Type3 font is searchable.

Raster fonts can be embedded as internal resources, or they can be referenced as external resources and mapped. In either case, the font may be defined through the coded font name or with a character set/code page pair.

The **afp2pdf** transform parses and extracts the raster font character set information it needs when outputting the text and saves the information in these files:

PFM file
: Contains general information about the raster font obtained from the character set. This file can be external, saved on the hard drive, or kept in memory.

PFB file
: Contains the data about the raster font. It must be extracted and kept on the hard drive or in memory.

For both cases (embedded or external raster fonts), the PFM and PFB files are embedded within the PDF document, and the text is written in the PDF file using the embedded PFM and PFB information.

The **afp2pdf** transformer creates a temporary `cnv` file to be used by ICU for the conversion of text from Unicode to the specified codepage and for the conversion of text from the code page to Unicode.

Embedding raster fonts:

All raster fonts are transformed to AdobeType3 fonts and embedded within the PDF document.

Using Type3 fonts for raster fonts reduces the size of the PDF file and makes the PDF searchable.

Mapping raster fonts:

If the AFP document you are converting to PDF contains raster fonts, you can create a smaller PDF document by accessing the raster fonts outside of the AFP document.

The **afp2pdf** transform uses this search order for raster fonts:

1. The `icoded.fnt` file is searched for the code page and character set pair.
2. The font directory specified with the `Foca_Font_Path` value in the `afp2pdf.cfg` is searched.
3. When a raster font is not found in the `icoded.fnt` file or the `Foca_Font_Path` value in the `afp2pdf.cfg`, the **afp2pdf** transform uses a default font. The default font is a Type1 font, one of the PDF Base 14 Fonts, or one of the virtual DBCS (Type0_ fonts. You specify the default font in the `csdef.fnt` file.

Examples

1. Use the **-o** flag to specify the output file name:

   ```
   afp2pdf -o sample.pdf example.afp
   ```

   In this example, the **-o** flag indicates that the output will be generated in the current directory using the output file name `sample.pdf`.
2. To specify a custom form definition, use the **-pragma fdef** flag:

   ```
   afp2pdf -pragma fdef="C:\myfdef\reslib\myformdef.fde" -o sample.pdf example.afp
   ```

In this example, the**-pragma fdef** flag is assigned the full path to a form definition file named **myformdef.fde**, which will be used to process the **example.afp** input file.

3. To specify the rotation value used to control text alignment with page orientation, use the **-pragma aligntext** flag:

   ```
   afp2pdf -pragma aligntext=180 example.afp
   ```

   This example aligns the text with a paper orientation that is rotated 180 degrees in an **example.pdf** output file.

4. Use the **-C** flag to specify the path and name of a configuration file:

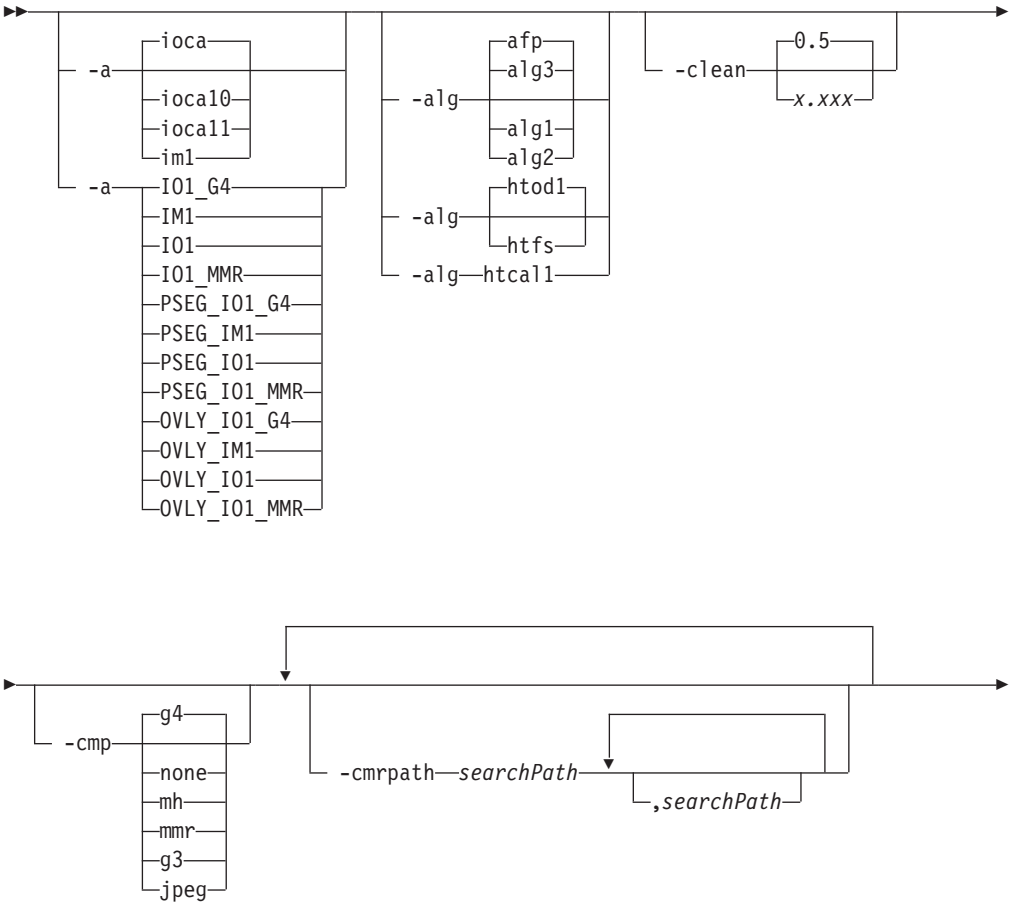
   ```
   afp2pdf -C mycustom.cfg -o sample.pdf example.afp
   ```

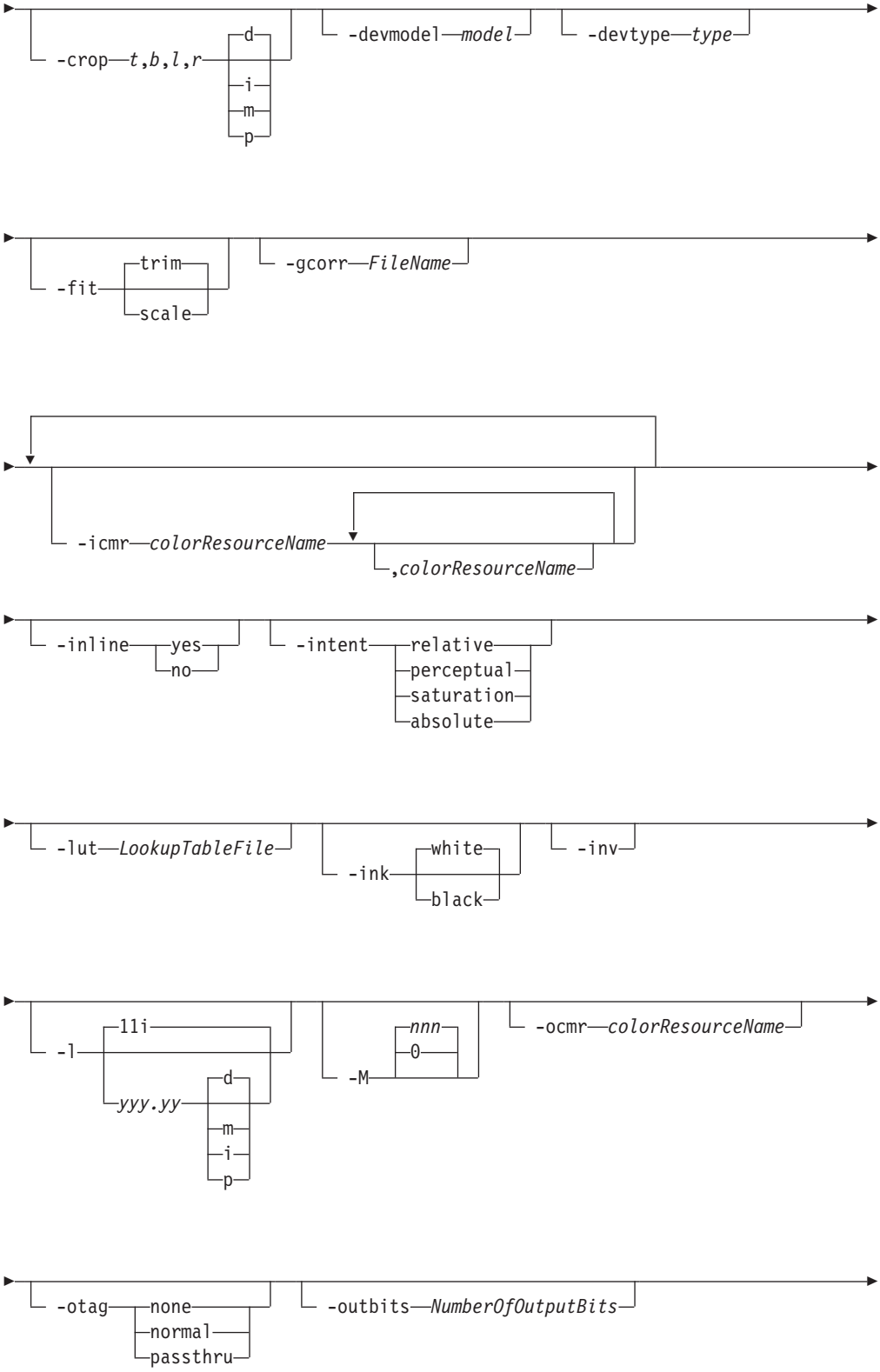
   The **mycustom.cfg** configuration file used to transform the **example.afp** input file to the **sample.pdf** output file.

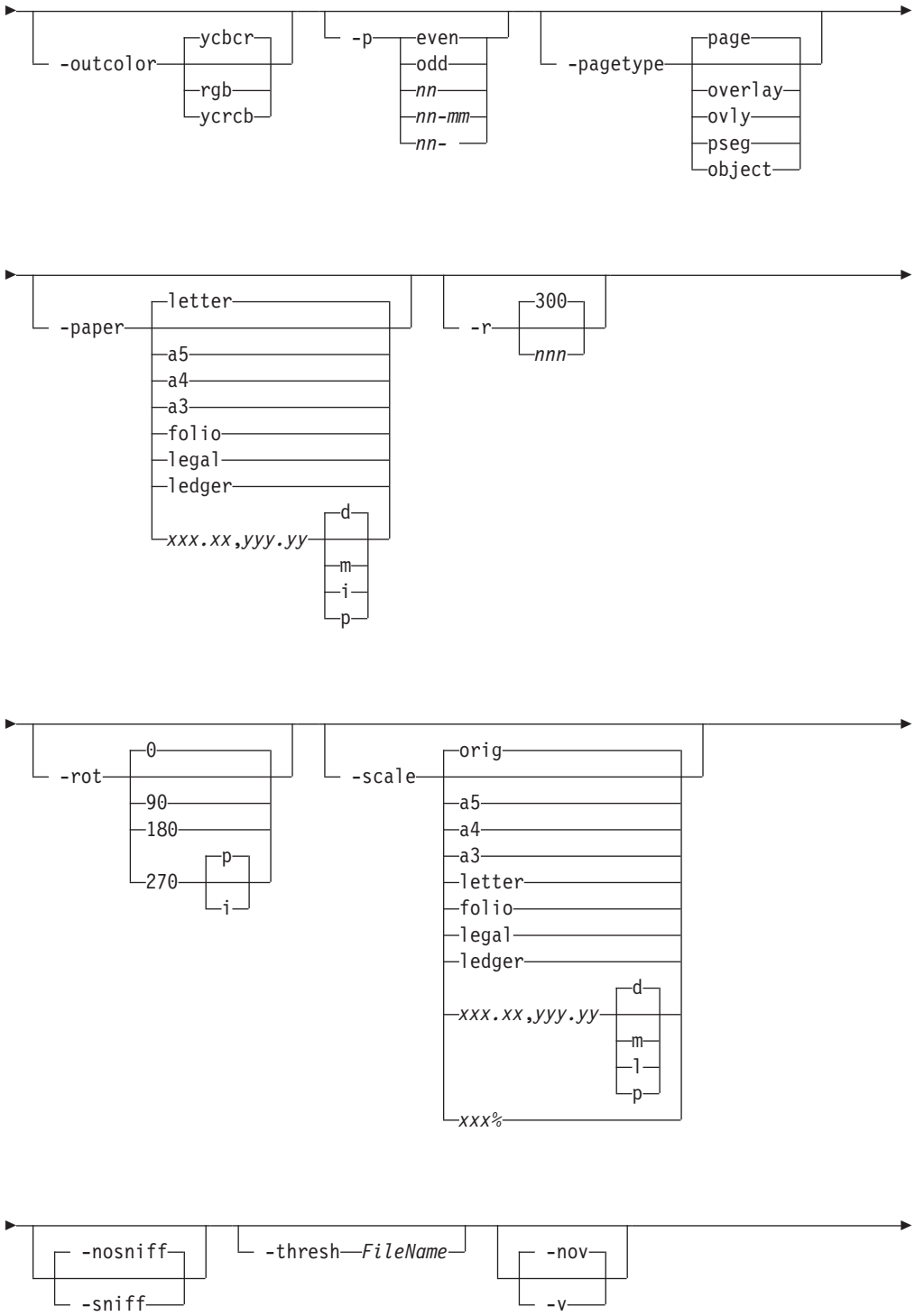
Transform GIF data to AFP

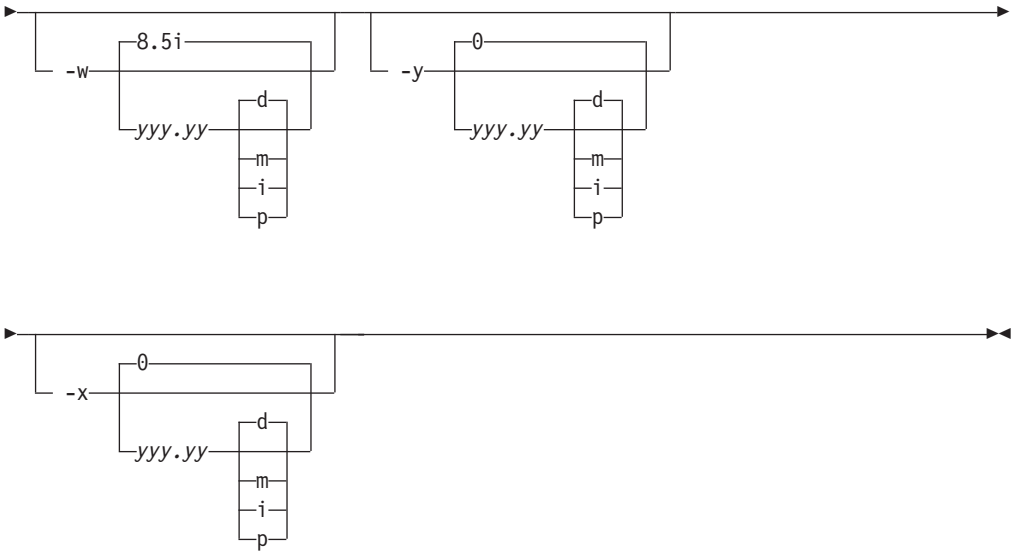
This section describes the **GIF to AFP** transform and includes its syntax, options, and values.

Syntax




-crop—t,b,l,r
d
i
m
p
-devmodel—model
-devtype—type
-fit
trim
scale
-gcorr—FileName
-icmr—colorResourceName
,colorResourceName
-inline
yes
no
-intent
relative
perceptual
saturation
absolute
-lut—LookupTableFile
-ink
white
black
-inv
-l
11i
yyy.yy
d
m
i
p
-M
nnn
0
-ocmr—colorResourceName
-otag
none
normal
passthru
-outbits—NumberOfOutputBits


-outcolor
ycbcr
rgb
ycrcb
-p
even
odd
nn
nn-mm
nn-
-pagetype
page
overlay
ovly
pseg
object
-paper
letter
a5
a4
a3
folio
legal
ledger
xxx.xx,yyy.yy
d
m
i
p
-r
300
nnn
-rot
0
90
180
270
p
i
-scale
orig
a5
a4
a3
letter
folio
legal
ledger
xxx.xx,yyy.yy
d
m
l
p
xxx%
-nosniff
-sniff
-thresh
FileName
-nov
-v



Description

Use the **GIF to AFP** transform to transform a GIF (Graphical Interchange Format) data stream into an AFP (MO:DCA-P) data stream.

The transform can process GIF images, including bi-level, gray scale, and color images. The output can be bi-level (IM1 or IOCA FS10), 4-bit or 8-bit grayscale, or 24-bit YCbCr color (IOCA FS11). The transform automatically uses halftoning to convert the grayscale and color images to bi-level.

Data transformations

If the input image is gray scale or color, and the output image type is bi-level (IOCA FS10 or IM1), the transform internally scales the image to the desired size. Next, the transform uses a halftoning algorithm (ordered dither, the default, or Floyd-Steinberg) to convert it to bi-level. In converting the image to bi-level, the characteristics of the output device such as dot shape and dot gain must be taken into consideration. The **-gcorr** option can be used to specify a different mapping of gray levels.

For very light or very dark images, the halftoning algorithms can be automatically recalibrated to preserve details that would be lost using the default calibration. See the **-alg** option for more information.

To maintain the image quality, scaling must be done before halftoning. The halftoning algorithm is very computation-intensive. Unless the images are small, **GIF to AFP** cannot process the color images fast enough to feed even a slow printer.

The size and position of the output image depend on several factors:

- The size specified to the transform
- The form map specified at print time
- The forms and options loaded in the printer

If the image is too large to fit on the page, it is trimmed to size by default. Use the **-fit scale** option to tell the printer to scale the image to the paper size. If you do not specify the paper size with the **-paper** option, the paper size defaults to US letter size (8.5 by 11 inches). If the image is larger than this, the paper dimensions are increased as necessary. If the paper size is specified explicitly, it is not increased if the image does not fit on paper. The options **-l** and **-w** have the same effect as **-paper**.

The size of the actual image (as opposed to the paper size) is controlled by the **-scale** option. You can either specify a value of **orig** for the **-scale** option or give an actual size. If you specify **orig**, the output image is the same size as the input image. If you specify **-scale** with an actual size, the output image is scaled to the desired size. You can also specify a percentage for enlargement or reduction.

Even if you specify **-scale orig**, the image might still have to be scaled if the input file specifies non-square pixels. By default, the transform leaves scaling to the printer. The exceptions are:

- Images that are being halftoned, which are always scaled in the transform
- Images that have different resolutions in X and Y directions (non-square pixels)

Note: Because GIF files do not specify resolutions, the image is assumed to have the resolution of the output device.

You can use the **-alg** option to instruct the transform to do internal image scaling. Options **-alg**, **-clean**, and **-ink** choose and configure various scaling algorithms.

GIF images are compressed using the LZW algorithm. Because LZW compression is not part of any current IOCA function set, **GIF to AFP** always reads and decompresses the image.

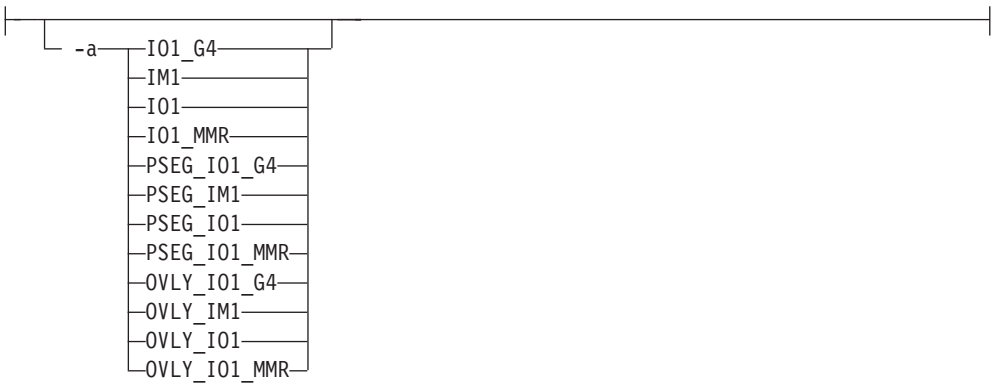
Limitations

- Timing data from GIF animation sequences is ignored.
- Animation sequences are processed as unrelated images.

Acknowledgments

This software is partially based on the Independent JPEG Group's JPEG compression and decompression code.

Options and values



- Choice of the output image type. The first syntax chooses between the IOCA FS 10 (**ioca**, **ioca10**), IOCA FS11 (**ioca11**), and IM1 output. IOCA FS10 and IM1 yield bi-level images, while IOCA FS11 results in 4-bit or 8-bit gray or 24-bit color output (see option **-outbits**). Currently, the only product that supports IOCA FS11 is AFP Workbench. The output compression algorithm is set using the **-cmp** option. To set the page type (page, overlay, page segment or object), use the **-pagetype** option.
- The second syntax is to maintain compatibility with the **PostScript to AFP** transform, and sets the image type (**IO1** for IOCA FS10 or **IM1** for IM1 output), compression (**G4** for Group 4 or **MMR** for Group 3), and page type (**PSEG** for page segment or **OVLY** for overlay). If you do not specify **PSEG** or **OVLY**, the output is a printable page. If you do not specify a compression algorithm, the output is not compressed. You cannot use the second syntax for IOCA FS11 output.
- Some older printers do not support IOCA images. In such cases, you should choose the IM1 output type. IM1 images are uncompressed and thus use more space. The processing might also take longer since the IM1 image cannot be scaled by the printer and so internal scaling algorithms must be used. See option **-alg**.
- The default is **ioca** for IOCA FS10 output compressed using Group 4 algorithm.

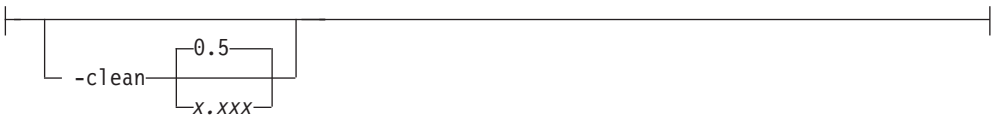
- Choice of the scaling and halftoning algorithms. You can specify multiple choices, separated by commas, for one **-alg** option. The effect is the same as specifying multiple **-alg** options. For example, `-alg htfs,htcal` is equivalent to `-alg htfs -alg htcal`.

The scaling algorithms are:

- If **afp** is chosen, the scaling is done using the default algorithm in the printer. This makes the transform much faster. If the image must be reduced, however, this algorithm might drop some information from the image, such as thin lines.
- **alg1** activates the internal scaling algorithm to scale the image explicitly to the specified size. This algorithm does not discard any ink. “White space” in the image, however, might be lost (that is, features close to one another might merge). This algorithm makes the transform run longer, and might occasionally make for a “dirty” image, since the occasional “noise pixels” in the scanned images tend to be amplified.
- **alg2** activates the more flexible version of **alg1**. If this algorithm is selected, option **-clean** can be used to specify the amount of ink “cleanup” to be done. Option **-clean 0.0** makes the algorithm **alg2** perform like **alg1** (although more slowly). Increasing the value specified in **-clean** discards more and more ink, until **-clean 1.0** results in a blank page.
- **alg3** activates a scaling algorithm that works by deleting or duplicating rows and columns in the image. This is a fast general-purpose algorithm.
- For bi-level images, the default is **afp** if the output image type is IOCA and **alg3** if the output image type is IM1. For color images with bi-level output, the scaling is always done before the halftoning algorithm. If a grayscale or color output is chosen (**-a ioca11**), this option is ignored and the algorithm is set to **afp**.

  The halftoning algorithms are:

  - **htod1** uses an ordered dither with a screen derived from the value of the **-thresh** option. The default is an 85 line per inch screen.
  - **htfs** uses the Floyd-Steinberg algorithm.
  - **htcal1** recalibrates the halftoning algorithm for each image. **htcal1** forces the transform to read the whole image into memory and requires an additional pass through the image. It should be used only for very light or very dark images.
- The default is **htod1**. Each halftoning algorithm uses a different internal default calibration curve. If the automatic calibration is turned on, a different set of calibration curves is used.
- See options **-clean**, **-gcorr**, **-ink**, **-paper**, **-scale**, **-thresh**, **-l**, **-w**, **-x**, and **-y**.



- The internal scaling algorithm **alg2** allows for variable thresholding. The scaled pixel is declared painted if the fraction of its area greater than the threshold is painted in the original image. The value *x.xxx* is a real number between zero and 1 inclusive and gives this threshold.
- If the option **-clean 0.0** is issued, **alg2** behaves like **alg1** and turns on a pixel as long as any part of the pixel has been painted in the original image. **-clean 1.0** results in a blank image because the output pixels are never painted.
- The setting **-clean 0.95** and **0.9999999** turns on the pixels that had essentially all the area painted in the original picture. Depending on the data, most of the image will probably be preserved. Increasing **-clean** by a small amount to **1.0** erases the image. If the scaling algorithm is not **alg2**, this option is ignored. The default is **-clean 0.5**.

- Choice of the output image compression algorithm:

  none Uncompressed output

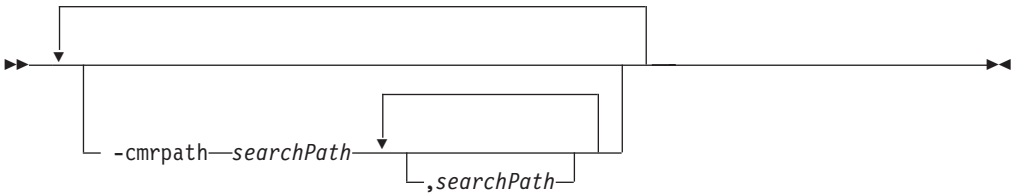
  mh ITU-T T.4 G3 Modified Huffman

  mmr Modified Modified Read

  g3 ITU-T T.4 G3 Modified Read

  g4 ITU-T T.6 G4

  jpeg JPEG non-differential Huffman coding with baseline DCT. The output image data should be compressed to reduce the file sizes and increase the printing speed.
- The default compression is ITU-T T.6 Group 4 for bi-level images and no compression for gray scale or color images. Some printers might not support Group 4 compression algorithm and require use of the **-cmp** option to choose a different one. The JPEG algorithm can compress only 8-bit gray scale and 24-bit color images. 4-bit gray scale images cannot be compressed.

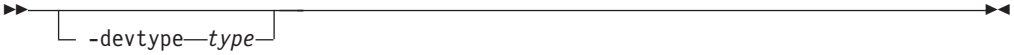


- Specifies the search order for locating color resources. This search order is a series of directory paths that color resources are located in. If you specify two or more **-cmrpath** flags, the Transform Feature will concatenate these search orders.

- Image cropping. *t,b,l,r* specify how much should be cropped from the image top, bottom, left edge, and right edge. The numbers are floating point and can be either positive or negative. Negative numbers indicate that a blank space should be inserted. The units are inches, millimeters, points, and dots (pels). The default is dots. The cropping is specified in the context of the output page, so that “top” means the top of the output page and so on, regardless of the **-rot** option. To crop, the transform enlarges the image by the amount to be cropped, then crops the specified amount by manipulating the actual bitmap. The resulting image has the size as specified by the explicit (or implicit) **-scale** option. See also option **-j**.

- If **-fit trim** is specified, the right and the bottom edge of the image are not cropped. Instead, the image grows as necessary. Because **-fit trim** causes the output data stream to contain the “position and trim” specification, the printer discards any extra image.

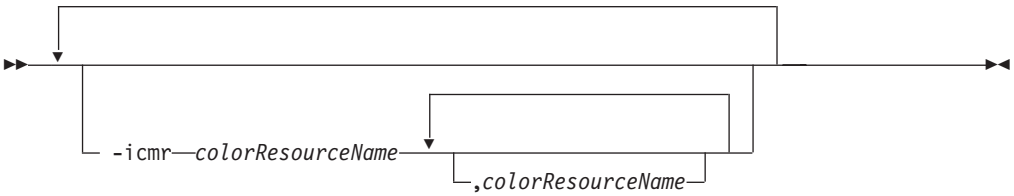
- Specify the device model of the actual device.



- Specify the device type of the actual device.

Determines whether the printer behavior will be position-and-trim or scale-to-fit if the image is too large to fit on the paper. The default is **trim**.

- Specifies a *FileName* with a gray scale mapping table for halftoning of the gray scale and color images to bi-level for output. The *FileName* you specify can be a fully qualified filename. If you do not specify a path, the Transform Feature looks in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation.
- The mapping table must be provided to compensate for the printing characteristics of the particular output device and paper type, such as dot gain. This file must contain either:
  - 256 real numbers, one for each level of gray in the 8-bit gray scale image
  - The PostScript **settransfer** operator
- The algorithm converts every image to 8-bit gray scale before applying the halftoning algorithm. The default might not produce the halftone image quality that your printer is capable of. Mapping tables for several different engine types and line screens are supplied with the Transform Feature and are installed in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation. To tune your image quality, select the file that matches your printer model. See also options **-alg** and **-thresh**. PostScript code submitted via the **-thresh** option can have the same effect as **-gcorr**.



- Specifies one or more input or audit color resources. The color resources can be either ICC Profiles or Color Management Resources (CMRs). If you specify two

or more **-icmr** flags on a transform command line, InfoPrint will concatenate the resources together. If two or more resources that are specified by the **-icmr** flags are for the same color space, InfoPrint will use the last specified resource.

- Specifies whether the output Color Management Resource (CMR) will be placed inline in the data stream. If you specify two or more **-inline** flags on a transform command line, the Transform Feature will use the last specified value.

- Specifies the rendering intent. You can also use the **-pragma** option to specify the rendering intent by setting:

  ```
  -pragma colorRendering=relative
  ```

  If you specify two or more **-intent** flags on a transform command line, the Transform Feature will use the last specified value.

- Specifies the *FileName* for the color conversion lookup table file. The *FileName* you specify can be a fully qualified filename. If you do not specify a path, the Transform Feature looks in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation.
- Fast and accurate conversion between color spaces can be implemented as a multidimensional lookup with an interpolation algorithm for missing nodes. The file specified with the **-lut** option must contain a valid lookup table for the conversion between the input and output color spaces. The lookup tables currently come in either ASCII (.lut) or binary formats (.lutbin).

- You only use this option with scaling algorithm **alg1** or **alg2**. The GIF images can be either black on white or white on black. The internal scaling algorithm must know which, because “ink” is preserved at the expense of “non-ink”. The default value, “black”, indicates that the image is black on white.
- If you use the option **-inv** to print the reversed image, the inversion is done as the data is read by the transform, before any processing is done. The black or white must be specified in the terms of the printed image, not in the terms of the input GIF image.

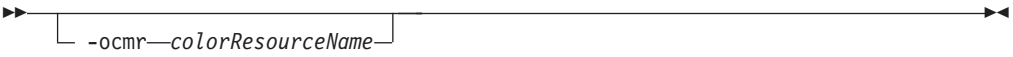
Reverses the image. Areas that are black in the original image become white and vice versa. The reversed image might be either black on white or white on black, depending on the original image.

- Specifies the paper length. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints.
- The default unit is dots. If the unit is dots, decimals (if any) are ignored. The default paper length is 11 inches.
- See options **-w** to set the paper width or **-paper** to set both dimensions at the same time.

Limits the amount of memory available to **GIF to AFP**. *nnn* is the maximum amount of memory in kilobytes. A value of **0** means there is no memory limit. *nnn* can be set from **0** to the maximum value that the operating system allows. The default is **0**.

-nosniff
See **-sniff**.

-nov See **-v**.



- Specifies an output color resource. The color resource can be either an ICC Profile or a Color Management Resource (CMR). If you specify two or more **-ocmr** flags on a transform command line, the Transform Feature will use the last specified value.

- Specifies how the output AFP will be tagged with color information. The allowed values are:

  none There will be no tagging in the output AFP.

  normal
  The Transform Feature will use the specified **-ocmr** value to tag the output AFP as an input (audit) Color Management Resource (CMR).

passthru
The Transform Feature will use the specified **-ocmr** value to tag the output AFP as both an input (audit) CMR and an output (instruction) CMR.

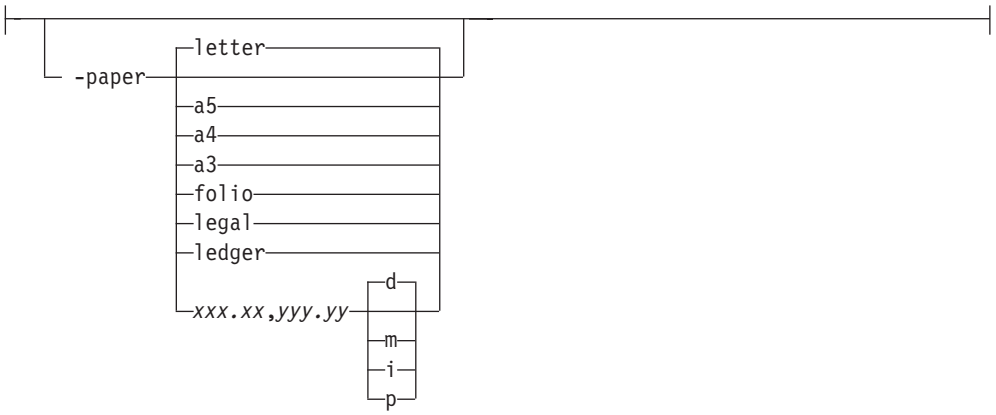
If you specify two or more **-otag** flags on a transform command line, the Transform Feature will use the last specified value.

Sets the number of bits per pel in output. This value must be **1**, **4**, **8**, or **24**. If the output image type is IOCA FS10 or IM1, the number of output bits is set to **1** and this option is ignored. For IOCA FS11 output, the default is **24**. This number represents the maximum number of bits used per pel. Thus, even if the number of bits is set to **24**, a 4-bit grayscale image is still displayed in 4-bit format.

Sets the output color model to RGB, YCbCr, or YCrCb if the image type is IOCA FS11 and the number of output bits is 24. Otherwise, this option is ignored. The default is **ycbcr**.

- Specifies that the output should only contain the specified pages. If no **-p** option is given, all the pages are output. Multiple **-p** options can be specified. Their effect is cumulative. Regardless of the order in which the pages are specified, they are always printed in ascending order. The recognized values are:
  even Print all even pages
  odd Print all odd pages
  nn Print page *nn*
  nn-mm
  Print pages *nn* to *mm*, inclusive
  nn- Print all pages starting with page *nn*
- Pages are numbered starting with 1.
- You can use **-p** when the **GIF to AFP** transform is processing one file at a time. This flag is ignored if you specify multiple files within the same job.

- Sets the output page type to page, overlay, page segment or object. The same page type is set for every page in the output. Thus, unless you use the **-p** option to select a single page, multiple page segments or overlays are stored in the output file.
- The default is **page**.
- See option **-a**.



Specifies the output paper size. The supported values are:

a3 A3 format (297 by 420 mm or 11.69 by 16.54 inches)

a4 A4 format (210 by 297 mm or 8.27 by 11.69 inches)

a5 A5 format (148 by 210 mm or 5.83 by 8.27 inches)

letter 8.5 by 11 inches (216 by 279 mm)

folio 8.5 by 13.0 inches (216 by 330 mm)

legal 8.5 by 14.0 inches (216 by 356 mm)

ledger 11.0 by 17.0 inches (279 by 432 mm)

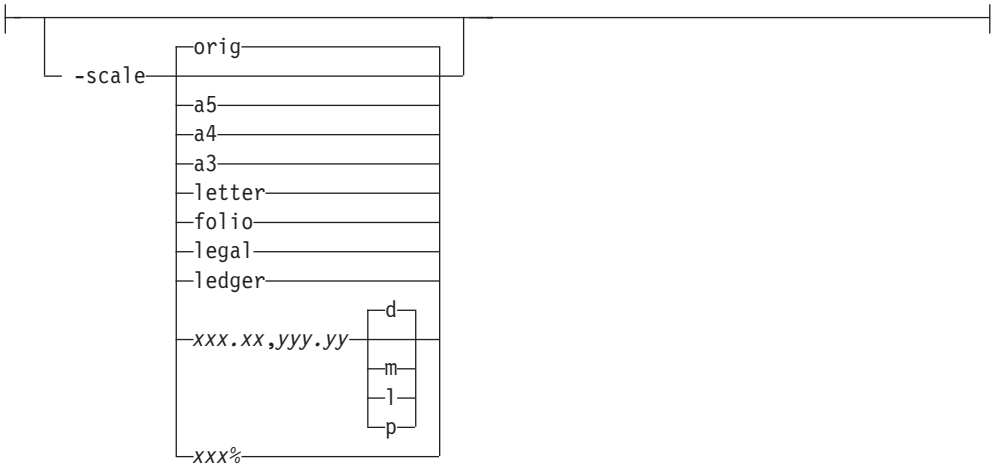
xxx.xx,yyy.yy
Horizontal and vertical page dimensions. The optional units are: **d**ots (pels), **m**illimeters, **i**nches, or **p**oints.

The default page size is **letter**. If **-paper** is not used, the paper size is increased, if necessary, to contain the output image.

The output device resolution, specified in dots per inch. The default is **300**.

- The image is rotated in the clockwise direction by the amount specified. The default is zero; that is, no rotation.

  If **p** is specified, the transform sets the output data stream in such a way that the printer does the actual image rotation. If **i** is specified, the transform rotates the output bitmap. When **i** is chosen, the transform takes much longer to run and uses much more memory. If no letter is specified, the default or any previous value remains in force.
- The default is **p**.



Specifies the output image size. The image is scaled to this size and centered in the area defined by the paper size and margin options. The supported values are:

orig Preserve the input image size, regardless of the printable paper area

a3 A3 format (297 by 420 mm or 11.69 by 16.54 inches)

a4 A4 format (210 by 297 mm or 8.27 by 11.69 inches)

a5 A5 format (148 by 210 mm or 5.83 by 8.27 inches)

letter 8.5 by 11 inches (216 by 279 mm)

folio 8.5 by 13.0 inches (216 by 330 mm)

ledger 11.0 by 17.0 inches (279 by 432 mm)

xxx.xx,yyy.yy
Horizontal and vertical page dimensions. The optional units are: **d**ots (pels), **m**illimeters, **i**nches, or **p**oints.

xxx% Magnification relative to the original image size. Numbers below 100% mean reduction, while numbers above 100% mean enlargement. For example, **-scale 200%** causes the output image to be twice as long and twice as wide as the input image.

The default image size is **orig**.

- Turns automatic conversion to black on white for bi-level images on (**-sniff**) or off (**-nosniff**). The automatic conversion algorithm counts the number of 0 and 1 bits

in the image. If there are fewer zeros, it assumes the printed features are represented by zeros (white on black), and inverts the image to be black on white. The detection and conversion are done after the conversion specified by the Photometric Interpretation tag is applied (if any).

- This option is ignored if the image is not bi-level. The default is **-nosniff**.

- Specifies a *FileName* that contains a PostScript Type 1 or Type 3 halftone dictionary. The *FileName* you specify can be a fully qualified filename. If you do not specify a path, the Transform Feature looks in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation.
- Halftone dictionaries for several different engine types and line screens are supplied with the Transform Feature and are installed in the **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation. To tune your image quality, select the file that matches your printer model.
- Alternatively, the PostScript code can specify the **setscreen** operator instead of a Type 1 dictionary. The halftone cell in the dictionary is used to overwrite the default ordered dither clustered dot halftone cell. If the PostScript code contains a transfer function, either in the halftone dictionary or specified by the **settransfer** operator, the current grayscale correction curve is overwritten as if **-gcorr** were used.

- Turns verbose mode on (**-v**) or off (**-nov**).
  - When verbose mode is on, the transform prints a message as it opens each resource file, then echoes the command line, then prints a message for each file name as it is processed.
  - When verbose mode is off, the transform prints only error messages.
- The default is **-nov**.

- Specifies the paper width. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints.
- The default unit is dots. The default page width is 8.5 inches.
- See options **-l** to set the paper length or **-paper** to set both dimensions at the same time.

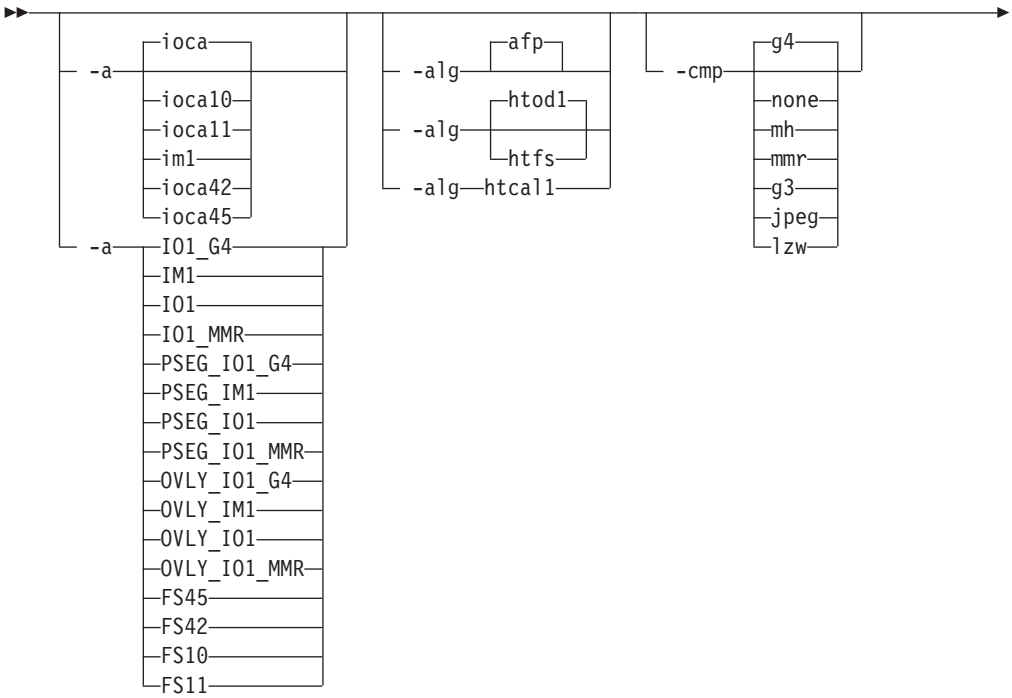
- Specifies the left margin. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints.
- The default unit is dots. The default is zero (no margin).

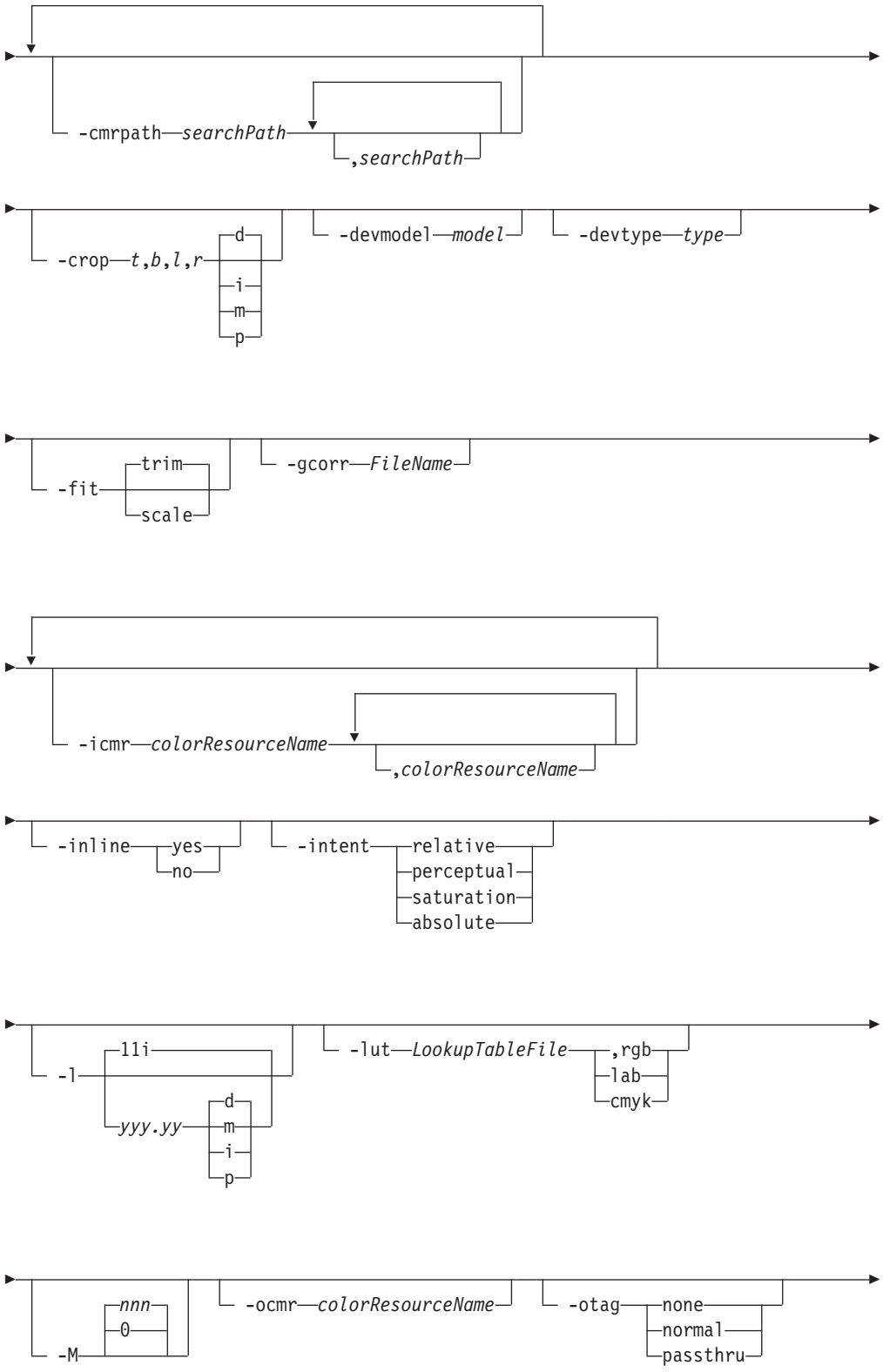
- Specifies the top margin. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints.
- The default unit is dots. The default is zero (no margin).

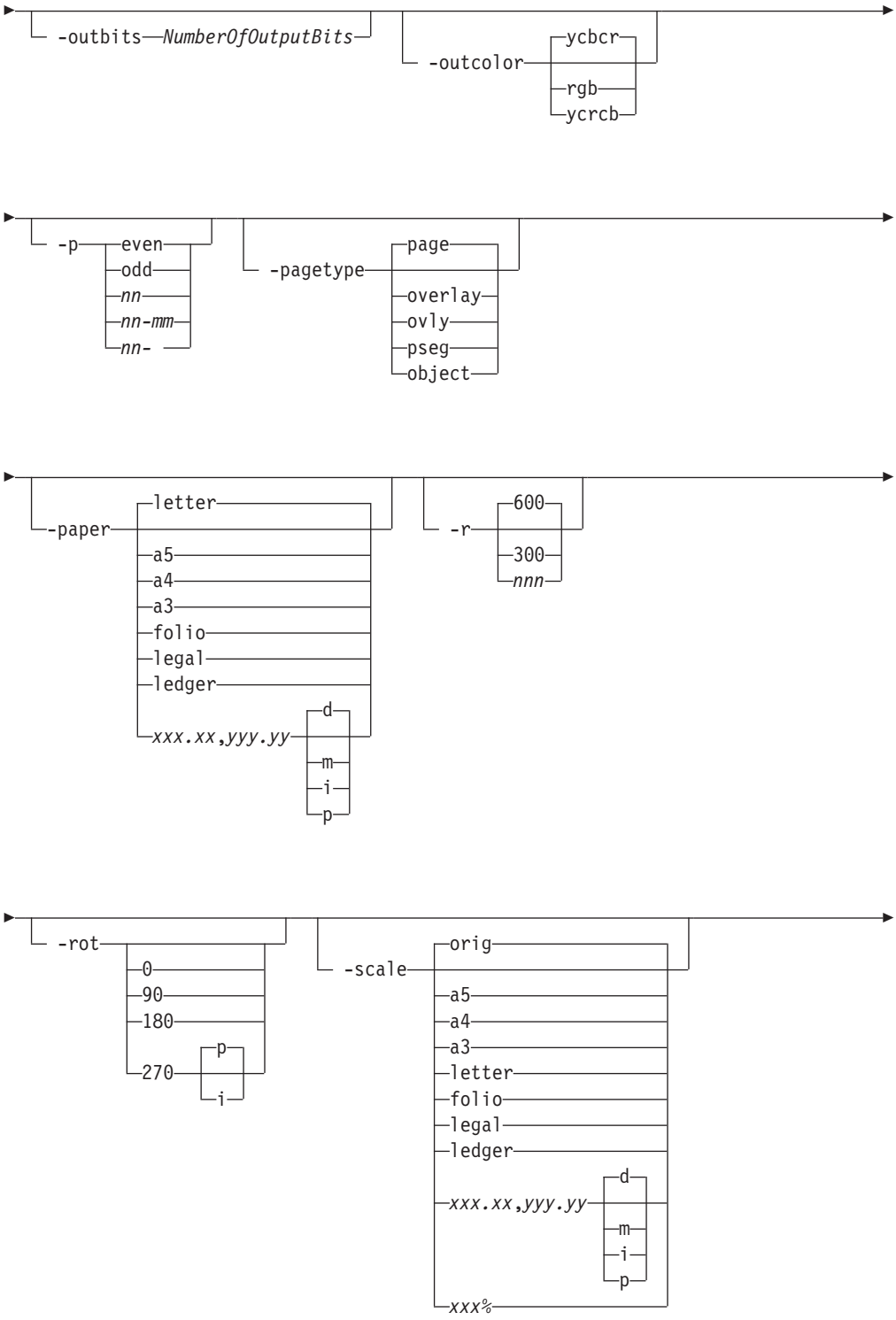
Transform JPEG data to AFP

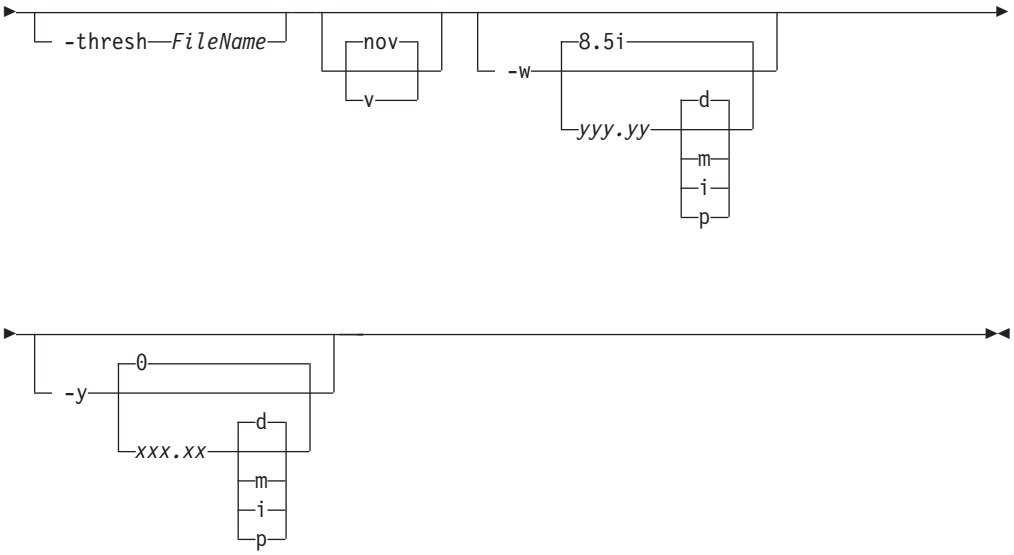
This section describes the **JPEG to AFP** transform and includes its syntax, options, and values.

Syntax




-cmrpath searchPath
,searchPath
-crop t,b,l,r
d
i
m
p
-devmodel model
-devtype type
-fit
trim
scale
-gcorr FileName
-icmr colorResourceName
,colorResourceName
-inline
yes
no
-intent
relative
perceptual
saturation
absolute
-l
11i
yyy.yy
d
m
i
p
-lut LookupTableFile
,rgb
lab
cmyk
-M
nnn
0
-ocmr colorResourceName
-otag
none
normal
passthru


-outbits
NumberOfOutputBits
-outcolor
ycbcr
rgb
ycrcb
-p
even
odd
nn
nn-mm
nn-
-pagetype
page
overlay
ovly
pseg
object
-paper
letter
a5
a4
a3
folio
legal
ledger
xxx.xx,yyy.yy
d
m
i
p
-r
600
300
nnn
-rot
0
90
180
270
p
i
-scale
orig
a5
a4
a3
letter
folio
legal
ledger
xxx.xx,yyy.yy
d
m
i
p
xxx%



Description

Use the **JPEG to AFP** transform to transform a JPEG (Joint Photographic Experts Group) data stream into an AFP (MO:DCA-P) data stream.

The transform can process images compressed using baseline lossy JPEG compression. Only 8 bits per channel and Huffman coding are supported. The output can be bi-level (IM1 or IOCA FS10), 4-bit or 8-bit gray scale, or 24-bit YCbCr color (IOCA FS11), bi-level or 4-bit banded CMYK image at 1-bit per band (IOCA FS42), or a superset of FS42 that also contains 32–bit banded CMYK images, compressed with either JPEG or LZW algorithms (IOCA FS45). The transform automatically uses halftoning to convert the gray scale and color images to bi-level.

Data transformations

If the input image is gray scale or color, and the output image type is bi-level (for example, IOCA FS10, or IM1), the transform internally scales the image to the desired size, then uses a halftoning algorithm (ordered dither, the default, or Floyd-Steinberg) to convert it to bi-level. In converting the image to bi-level, the characteristics of the output device, such as dot shape and dot gain, must be taken into consideration. The halftone screen and the calibration are extremely printer-dependent. While the transform does contain an internal default (85 LPI screen at 45 degrees), an appropriate screen should be used and the halftone should be calibrated properly for best quality.

Some printers, such as the InfoPrint 4000, have two engines, one for each side of the sheet. Each engine commonly has a different calibration. Options **-thresh** and **-gcorr** provide the mechanism to specify halftone screen, gray scale correction curves, and rules for switching calibration based on the engine used to print a particular page. For very light or very dark images, the halftoning algorithms can be automatically recalibrated to preserve detail that would be lost using the default calibration. See option **-alg**.

To maintain the image quality, scaling must be done before halftoning. The halftoning algorithm is very compute-intensive. Unless the images are small, **JPEG to AFP** might not be able to process the color images fast enough to feed even a slow printer.

To achieve good image quality for the CMYK output, the input image colors must be converted to CMYK, bearing in mind the characteristics of the particular halftones used to generate the output image. The color conversion is done using a multidimensional lookup table, which is specified with the **-lut** option. If the transform cannot determine the appropriate lookup table or the lookup table is missing, a simple conversion of RBG to CMY is done using the 255- algorithm. This conversion does not use black and generally leads to poor color quality.

The size and the position of the output image on the page depends on several factors. In addition to the size specified to the transform, the result depends on the form map specified at print time and also on the form and options loaded in the printer. If the image is too large to fit on the page, it is trimmed to size by default. Use the **-fit** option to tell the printer to scale the image to paper size. If the paper size has not been specified explicitly with the **–paper** option, the paper defaults to US letter (8.5 by 11 inches). If the image is larger than this, the paper dimensions are increased as necessary. If the paper size has been specified explicitly, it is not increased if the image will not fit on paper. Options **-l** and **-w** have the same effect as **-paper**.

The size of the actual image, as opposed to the paper size, is controlled by the **-scale** option. The **-scale** option can either specify ″**orig**″, or give an actual size. If **orig** has been specified, the output image has the same size as the input image. If **-scale** with an actual size has been specified, the output image is scaled to the desired size. A percentage enlargement/reduction can also be specified.

Even if **-scale orig** has been specified, the image might still need to be scaled if the input resolution is different from the output resolution. By default, the transform leaves scaling to the printer. The exceptions are images that are being halftoned, which are always scaled in the transform, and images that have different resolutions on the X and Y directions. The **-alg** option can be used to instruct the transform to do internal image scaling. Options **-alg** and **-ink** choose and configure various scaling algorithms used by the transform.

Note: Because JPEG files do not specify resolutions, the image is assumed to have the resolution of the output device.

If possible, **jpeg2afp** just rewraps the JPEG raster data in MO:DCA-P headers. This does not change the compression algorithm used in the data, even though it might be different than the output compression algorithm specified on the command line. The data is rewapped only if no changes are to be made in the image and if the compression algorithm is supported by the IOCA standard. Besides the uncompressed data, the bi-level compression algorithms supported both by JPEG and IOCA are ITU-TSS T.4 Group 3 and T.6 Group 4 algorithms.

For 8-bit grayscale and 24-bit color images, both TIFF and IOCA FS11 support JPEG compression algorithms. However, TIFF and JPEG standards have different subsampling defaults than IOCA FS11. Thus, most 24-bit color images are not suitable for rewrapping, even if they use a JPEG compression algorithm and a color model supported by IOCA FS11. Also, JPEG is a lossy compression algorithm.

Decompressing a JPEG image and then recompressing it again for output might result in reduced image quality. For that reason, the default is to use no compression for the gray or color output.

Be aware that not all the printers support all the recognized IOCA compression standards. To make sure that the transform decompresses the data and recompresses it using the specified algorithm, use the **-force** option. If the output image is IM1, the image is always decompressed and scaled in the transform.

The JPEG images are often divided into many segments for efficient memory handling. Some printers terminate the printing in error if the page is too complex. For that reason, **jpeg2afp** decompresses, repartitions, and compresses the data if it determines there are too many segments in the picture.

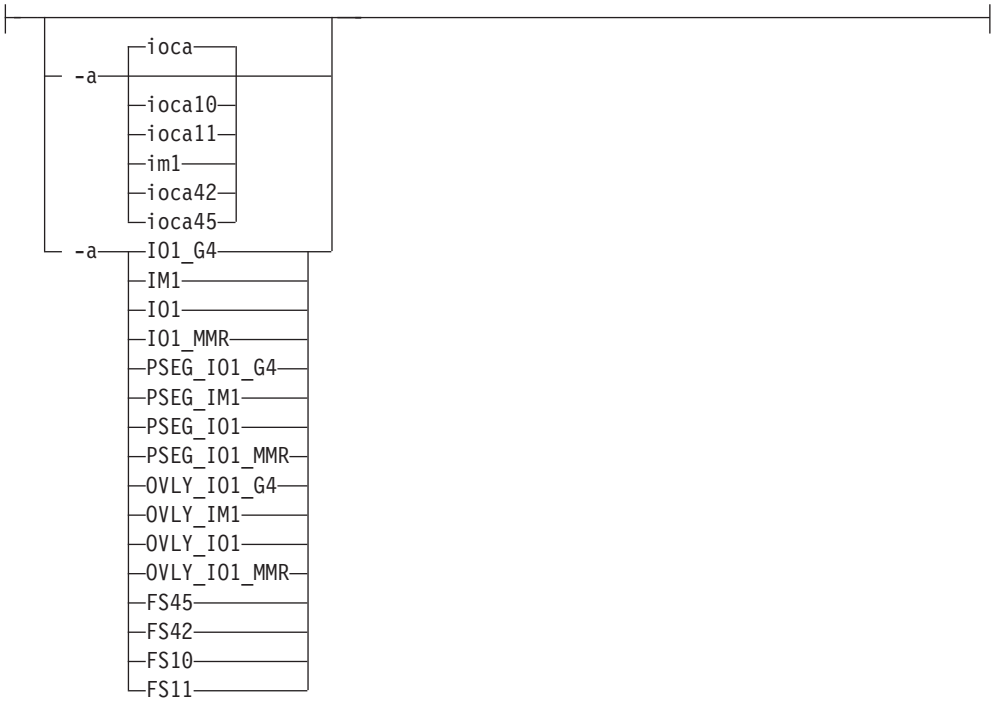
Limitations

- Only Huffman coding with baseline DCT JPEG algorithm is supported.
- 8-bit grayscale and 24-bit color are supported.

Acknowledgments

This software is based in part on the work of the Independent JPEG Group.

Options and values



- Choice of the output image type. The first syntax chooses between the IOCA FS 10 (**ioca**, **ioca10**), IOCA FS11 (**ioca11**), IM1, IOCA FS42 (**ioca42**), and IOCA FS45 (**ioca45**) output. IOCA FS10 and IM1 yield bi-level images, while IOCA FS11 results in 4-bit or 8-bit gray or 24-bit color output (see option **-outbits**). Currently, the only product that supports IOCA FS11 is AFP Workbench. IOCA FS42 can contain either bi-level or 4-bit banded CMYK image at 1-bit per band. IOCA FS45 is a superset of FS42 that also contains 32-bit banded CMYK images, compressed with either JPEG or LZW algorithms. The output

compression algorithm is set with the **-cmp** option. To set the page type (page, overlay, page segment, or object), use the **-pagetype** option. FS45 produces IOCA FS45 output.

- The second syntax is to maintain compatibility with the **PostScript to AFP** transform, and sets the image type (**IO1** for IOCA FS10 or **IM1** for IM1 output), compression (**G4** for Group 4 or **MMR** for Group 3), and page type (**PSEG** for page segment or **OVLY** for overlay). If you do not specify **PSEG** or **OVLY**, the output is a printable page. If you do not specify a compression algorithm, the output is not compressed. You cannot use the second syntax for IOCA FS11 output.
- Some older printers do not support IOCA images. In such cases, you should choose the IM1 output type. IM1 images are uncompressed, and thus, use more space. The processing might also take longer since the IM1 image cannot be scaled by the printer, so internal scaling algorithms must be used. See option **-alg**.
- The default is **ioca** for IOCA FS10 output compressed using the Group 4 algorithm.

- Choice of the scaling and halftoning algorithms. You can specify multiple choices, separated by commas, for one **-alg** option. The effect is the same as specifying multiple **-alg** options. For example, `-alg htfs,htcal` is equivalent to `-alg htfs -alg htcal`.

  The scaling algorithms are:

  – If **afp** is chosen, the scaling is done using the default algorithm in the printer. This makes the transform much faster. If the image must be reduced, however, this algorithm might drop some information from the image, such as thin lines.
- For color images with bi-level output, the scaling is always done before the halftoning algorithm. If a grayscale or color output is chosen (**-a ioca11**), this option is ignored and the algorithm is set to **afp**.
- The halftoning algorithms are:
  – **htod1** uses an ordered dither with a screen derived from the value of the **-thresh** option. The default is an 85 line per inch screen.
  – **htfs** uses the Floyd-Steinberg algorithm.
  – **htcal1** recalibrates the halftoning algorithm for each image. **htcal1** forces the transform to read the whole image into memory and requires an additional pass through the image. Use it only for very light or very dark images.
- The default is **htod1**. Each halftoning algorithm uses a different internal default calibration curve. If the automatic calibration is turned on, a different set of calibration curves is used.
- See options **-gcorr**, **-paper**, **-scale**, **-thresh**, **-l**, **-w**, **-x**, and **-y**.

- Choice of the output image compression algorithm:

  none Uncompressed output

  mh ITU-T T.4 G3 Modified Huffman

  mmr Modified Modified Read

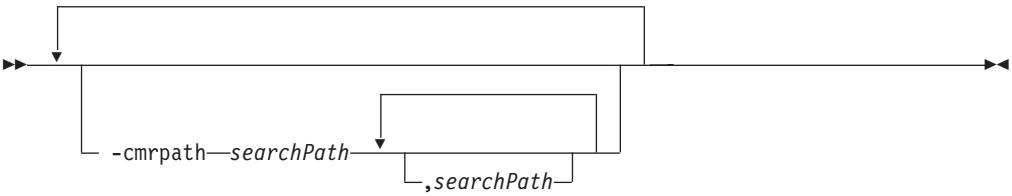
  g3 ITU-T T.4 G3 Modified Read

  g4 ITU-T T.6 G4

  jpeg JPEG non-differential Huffman coding with baseline DCT. The output image data should be compressed to reduce the file sizes and increase the printing speed.

  lzw If **lzw** is specified, linework of 600 dpi is produced; otherwise, lossy JPEG at 300 dpi is produced. **lzw** only applies to FS45.

- The default compression is ITU-T T.6 Group 4 for bi-level images and no compression for gray scale or color images. Some printers might not support Group 4 compression algorithm and require using the **-cmp** option to choose a different one. The JPEG algorithm can compress only 8-bit gray scale and 24-bit color images. 4-bit gray scale images cannot be compressed.

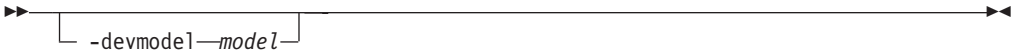


- Specifies the search order for locating color resources. This search order is a series of directory paths that color resources are located in. If you specify two or more **-cmrpath** flags, the Transform Feature will concatenate these search orders.

- Image cropping. *t,b,l,r* specify how much should be cropped from the image top, bottom, left edge, and right edge. The numbers are floating point and can be either positive or negative. Negative numbers indicate that a blank space should be inserted. The units are inches, millimeters, points, and dots (pels). The default is dots. The cropping is specified in the context of the output page, so that “top” means the top of the output page and so on, regardless of the **-rot** option. To

crop, the transform enlarges the image by the amount to be cropped, then crops the specified amount by manipulating the actual bitmap. The resulting image has the size as specified by the explicit (or implicit) **-scale** option. See also option **-j**.

- If **-fit trim** is specified, the right and the bottom edge of the image are not cropped. Instead, the image grows as necessary. Because **-fit trim** causes the output data stream to contain the “position and trim” specification, the printer discards any extra image.

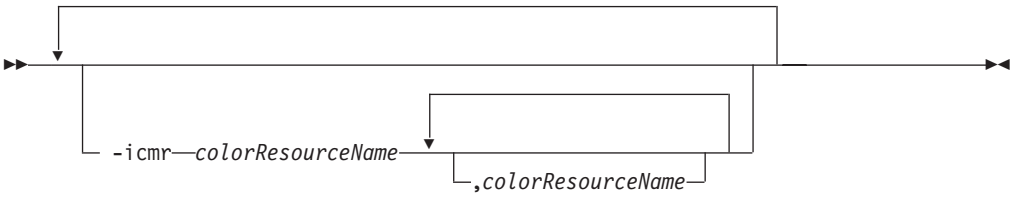


- Specify the device model of the actual device.

- Specify the device type of the actual device.

Determines whether the printer behavior will be position-and-trim or scale-to-fit if the image is too large to fit on the paper. The default is **trim**.

- Specifies a *FileName* with a gray scale mapping table for halftoning of the gray scale and color images to bi-level for output. The *FileName* you specify can be a fully qualified filename. If you do not specify a path, the Transform Feature looks in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation.
- The mapping table must be provided to compensate for the printing characteristics of the particular output device and paper type, such as dot gain. This file must contain either:
  - 256 real numbers, one for each level of gray in the 8-bit gray scale image
  - The PostScript **settransfer** operator
- The algorithm converts every image to 8-bit gray scale before applying the halftoning algorithm. The default might not produce the halftone image quality that your printer is capable of. Mapping tables for several different engine types and line screens are supplied with the Transform Feature and are installed in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation. To tune your image quality, select the file that matches your printer model. See also options **-alg** and **-thresh**. PostScript code submitted with the **-thresh** option can have the same effect as **-gcorr**.



- Specifies one or more input or audit color resources. The color resources can be either ICC Profiles or Color Management Resources (CMRs). If you specify two or more **-icmr** flags on a transform command line, InfoPrint will concatenate the resources together. If two or more resources that are specified by the **-icmr** flags are for the same color space, InfoPrint will use the last specified resource.

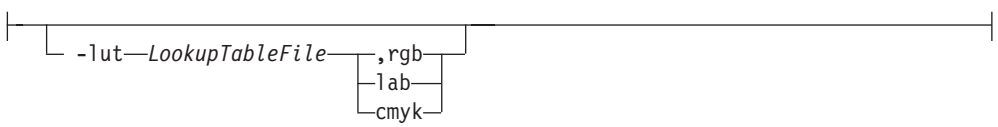
- Specifies whether the output Color Management Resource (CMR) will be placed inline in the data stream. If you specify two or more **-inline** flags on a transform command line, the Transform Feature will use the last specified value.

- Specifies the rendering intent. You can also use the **-pragma** option to specify the rendering intent by setting:

  ```
  -pragma colorRendering=relative
  ```

  If you specify two or more **-intent** flags on a transform command line, the Transform Feature will use the last specified value.

- Specifies the paper length. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints.
- The default unit is dots. If the unit is dots, decimals (if any) are ignored. The default paper length is 11 inches.
- See options **-w** to set the paper width or **-paper** to set both dimensions at the same time.

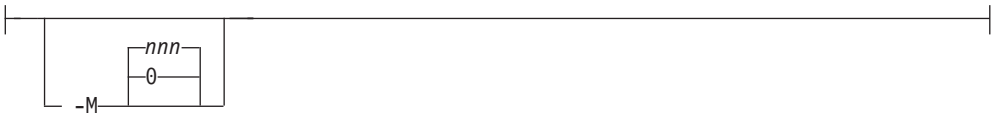


- Specifies the *FileName* for the color conversion lookup table file. The *FileName* you specify can be a fully qualified filename. If you do not specify a path, the Transform Feature looks in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation.
- Fast and accurate conversion between color spaces can be implemented as a multidimensional lookup with an interpolation algorithm for missing nodes. The file specified with the **-lut** option must contain a valid lookup table for the conversion between the input and output color spaces. The lookup tables currently come in either ASCII (.lut) or binary formats (.lutbin).
- If the optional colorspace tag is not provided, the table is assumed to match the input image. If there is a serious mismatch between the table and the image (for example, the table is RGB to CMYK and the input image is CMYK), the **-lut** is ignored for the image. Otherwise, it is used to convert the colors and any mismatch (for example, using a **lab** table for **rgb** data) results in corrupted output.
- If the colorspace tag is provided, the transform uses the lookup table only for the relevant colorspace image. Multiple **lut** tables can be specified if the you are unsure about the input colorspace. If the **lut** files are binary, parsing extra files does not slow performance much.

  Example:

  `-lut 3170-005.rgb.cmyk.perceptual.lutbin,rgb`

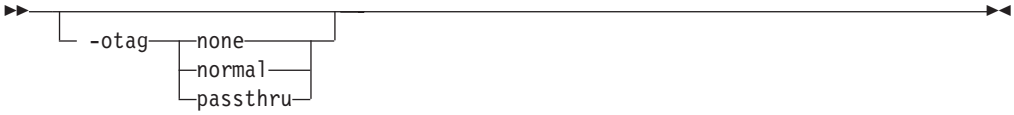
  Where `3170-005` is the model-type; `rgb.cmyk` is for RGB images; and `perceptual` is the **color-rendering-intent** value.



Limits the amount of memory available to **JPEG to AFP**. *nnn* is the maximum amount of memory in kilobytes. A value of **0** means there is no memory limit. *nnn* can be set from **0** to the maximum value that the operating system allows. The default is **0**.

See **v** or **nov**.

- Specifies an output color resource. The color resource can be either an ICC Profile or a Color Management Resource (CMR). If you specify two or more **-ocmr** flags on a transform command line, the Transform Feature will use the last specified value.



- Specifies how the output AFP will be tagged with color information. The allowed values are:

  none There will be no tagging in the output AFP.

  normal
  The Transform Feature will use the specified **-ocmr** value to tag the output AFP as an input (audit) Color Management Resource (CMR).

  passthru
  The Transform Feature will use the specified **-ocmr** value to tag the output AFP as both an input (audit) CMR and an output (instruction) CMR.

  If you specify two or more **-otag** flags on a transform command line, the Transform Feature will use the last specified value.

Sets the number of bits per pel in output. This value must be **1**, **4**, **8**, or **24**. If the output image type is IOCA FS10 or IM1, the number of output bits is set to **1** and this option is ignored. For IOCA FS11 output, the default is **24**. This number represents the maximum number of bits used per pel. Thus, even if the number of bits is set to **24**, a 4-bit grayscale image is still displayed in 4-bit format.

Sets the output color model to RGB, YCbCr, or YCrCb if the image type is IOCA FS11 and the number of output bits is 24. Otherwise, this option is ignored. The default is **ycbcr**.

- Specifies that the output should only contain the specified pages. If no **-p** option is given, all the pages are output. Multiple **-p** options can be specified. Their effect is cumulative. Regardless of the order in which the pages are specified, they are always printed in ascending order.
- The supported values are:

  even Print all even pages

  odd Print all odd pages

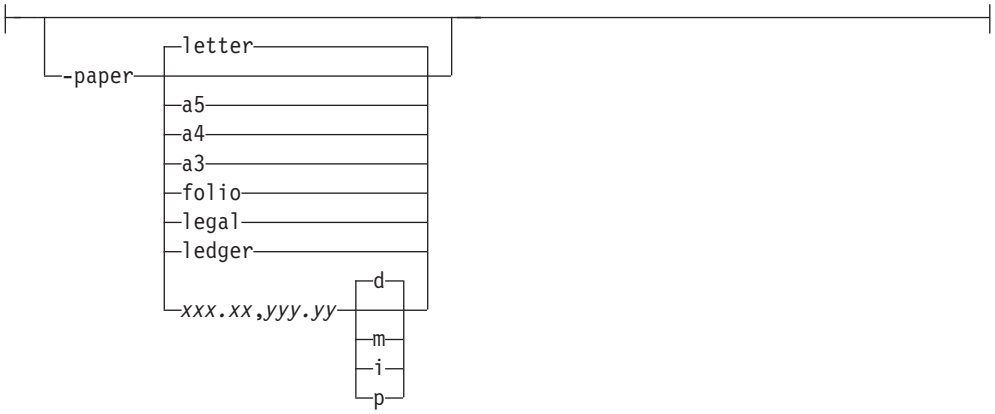
  nn Print page *nn*

  nn-mm
  Print pages *nn* to *mm*, inclusive

  nn- Print all pages starting with page *nn*

- Pages are numbered starting with 1.
- You can use **-p** when the **JPEG to AFP** transform is processing one file at a time. This flag is ignored if you specify multiple files within the same job.

- Sets the output page type to be page, overlay, page segment or object. The same page type is set for every page in the output. Thus, unless you use the **-p** option to select a single page, multiple page segments or overlays are stored in the output file.
- The default is **page**.
- See option **-a**.



- Specifies the output paper size. The supported values are:

  a3 A3 format (297 by 420 mm or 11.69 by 16.54 inches)

  a4 A4 format (210 by 297 mm or 8.27 by 11.69 inches)

  a5 A5 format (148 by 210 mm or 5.83 by 8.27 inches)

  letter 8.5 by 11 inches (216 by 279 mm)

  folio 8.5 by 13.0 inches (216 by 330 mm)

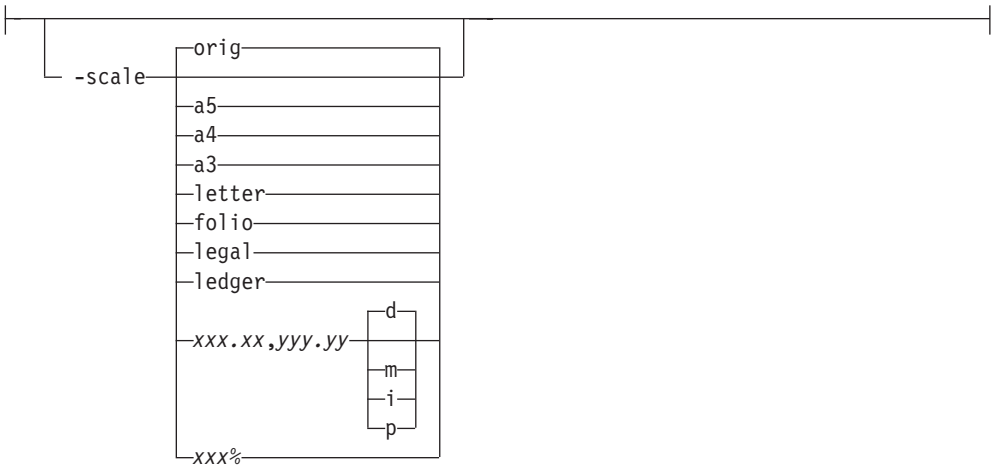
  legal 8.5 by 14.0 inches (216 by 356 mm)

  ledger 11.0 by 17.0 inches (279 by 432 mm)

  xxx.xx,yyy.yy
  Horizontal and vertical page dimensions. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints.
- The default paper size is letter. If **-paper** is not used, the paper size is increased, if necessary, to contain the output image.
- See options **-l**, **-w**, and **-scale**.

- The output device resolution, specified in dots per inch.
- The default is **600**.

- The image is rotated in the clockwise direction by the amount specified. The default is zero; that is, no rotation.
- If **p** is specified, the transform sets the output data stream in such a way that the printer does the actual image rotation. If **i** is specified, the transform rotates the output bitmap. When **i** is chosen, the transform takes much longer to run and uses much more memory. If no letter is specified, the default or any previous value remains in force.
- The default is **p**.



- Specifies the output image size. The image is scaled to this size and centered in the area defined by the paper size and margin options. The supported values are:

  orig Preserve the input image size, regardless of the printable paper area

  a3 A3 format (297 by 420 mm or 11.69 by 16.54 inches)

  a4 A4 format (210 by 297 mm or 8.27 by 11.69 inches)

  a5 A5 format (148 by 210 mm or 5.83 by 8.27 inches)

  letter 8.5 by 11 inches (216 by 279 mm)

  folio 8.5 by 13.0 inches (216 by 330 mm)

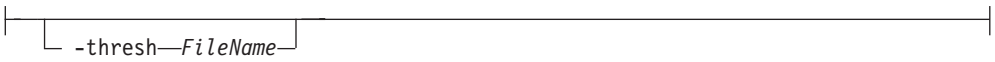
legal 8.5 by 14.0 inches (216 by 356 mm)

ledger 11.0 by 17.0 inches (279 by 432 mm)

xxx.xx,yyy.yy
Horizontal and vertical page dimensions. The optional units are: **d**ots (pels), **m**illimeters, **i**nches, or **p**oints.

xxx% Magnification relative to the original image size. Numbers below 100% mean reduction, while numbers above 100% mean enlargement. For example, **-scale 200%** causes the output image to be twice as long and twice as wide as the input image.

- The default image size is **orig**.



- Specifies a *FileName* that contains a PostScript Type 1 or Type 3 halftone dictionary. The *FileName* you specify can be a fully qualified filename. If you do not specify a path, the Transform Feature looks in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation.
- Halftone dictionaries for several different engine types and line screens are supplied with the Transform Feature and are installed in the **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation. To tune your image quality, select the file that matches your printer model.
- Alternatively, the PostScript code can specify the **setscreen** operator instead of a Type 1 dictionary. The halftone cell in the dictionary is used to overwrite the default ordered dither clustered dot halftone cell. If the PostScript code contains a transfer function, either in the halftone dictionary or specified by the **settransfer** operator, the current grayscale correction curve is overwritten as if **-gcorr** were used.

- Turns verbose mode on (**-v**) or off (**-nov**).
  - When verbose mode is on, the transform prints a message as it opens each resource file, then echoes the command line, then prints a message for each file name as it is processed.
  - When verbose mode is off, the transform prints only error messages.
- The default is **-nov**.

- Specifies the paper width. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints.
- The default unit is dots. The default page width is 8.5 inches.

- See options **-l** to set the paper length or **-paper** to set both dimensions at the same time.

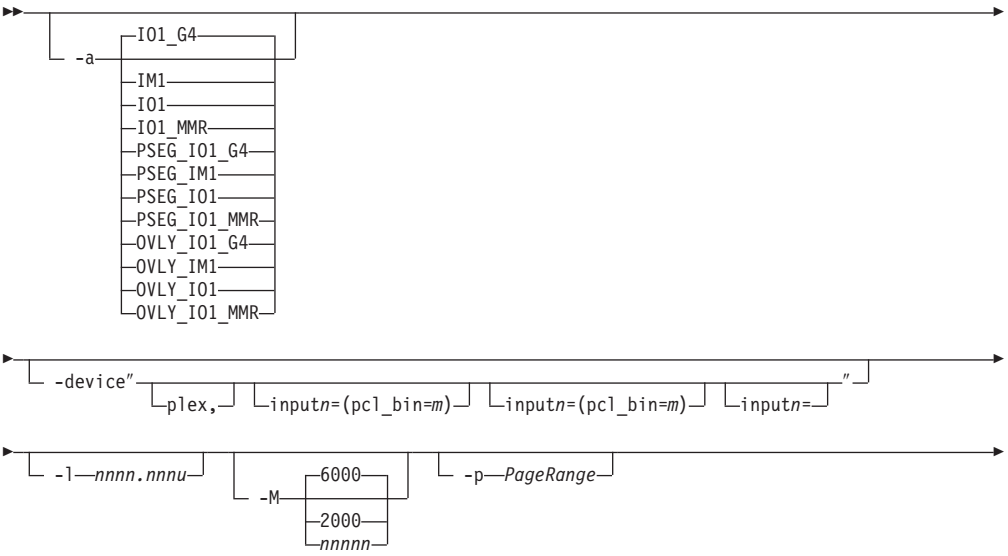
- Specifies the left margin. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints.
- The default unit is dots. The default is zero (no margin).

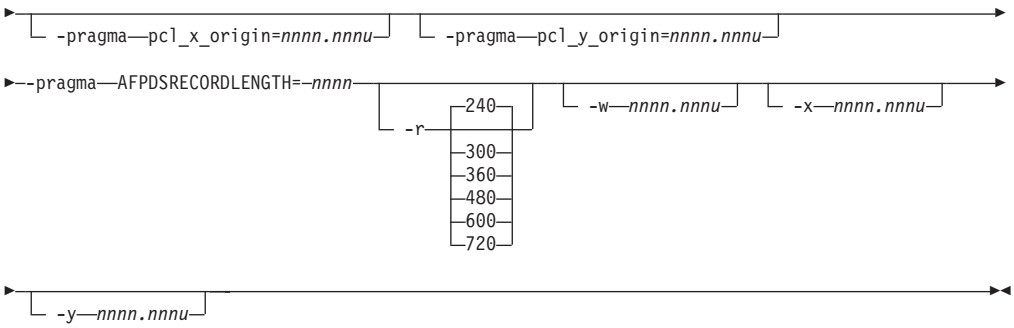
- Specifies the top margin. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints.
- The default unit is dots. The default is zero (no margin).

Transform PCL data to AFP

This section describes the **PCL to AFP** transform and includes its syntax, options, and values.

Syntax





Description

Use the **PCL to AFP** transform to transform a PCL data stream file into an AFP data stream file.

If you specify multiple values of the same flag, **PCL to AFP** uses the last value specified, except for the **-p** flag. Multiple values of the **-p** flag are accumulated and the pages identified for printing are printed in normal numerical sequence, regardless of the order you specify.

The **PCL to AFP** transform uses these Embedded Microtype Fonts:

- Albertus Medium
- Albertus Extra Bold
- Antique Olive
- Antique Olive Italic
- Antique Olive Bold
- Arial
- Arial Italic
- Arial Bold
- Arial Bold Italic
- Clarendon Condensed Bold
- Coronet
- Courier Italic
- Courier Bold
- Courier Bold Italic
- Garamond Antiqua
- Garamond Kursiv
- Garamond Halbfett
- Garamond Kursiv Halbfett
- Letter Gothic
- Letter Gothic Italic
- Letter Gothic Bold
- Marigold
- CG Omega
- CG Omega Italic
- CG Omega Bold
- CG Omega Bold Italic
- Symbol
- CG Times
- CG Times Italic
- CG Times Bold
- CG Times Bold Italic
- Times New Roman
- Times New Roman Italic

- Times New Roman Bold
- Times New Roman Bold Italic
- Univers Medium
- Univers Medium Italic
- Univers Bold
- Univers Bold Italic
- Univers Condensed Medium
- Univers Condensed Medium Italic
- Univers Condensed Bold
- Univers Condense Bold Italic
- WingDings

The **PCL to AFP** transform also uses the Line Printer embedded bitmap font.

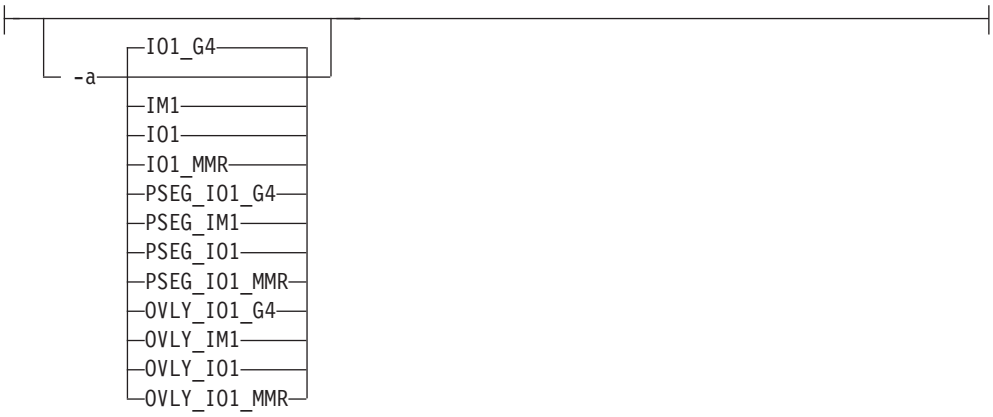
Font substitution occurs when a set of capabilities, such as Symbol Set, Spacing, Pitch, and Typeface, are compared to the fonts available to the rip, and the closest match wins. You cannot disable font substitution. If an error occurs during font substitution, the error is not logged. When a custom font is included in the data stream, and the PCL job refers to it, the custom font is used.

Limitations

- PCL data can contain device commands (for example, to begin or end duplexing or to change the input bin). The AFP architecture defines those device functions in a form definition resource instead of the print data. To access those device functions (such as duplexing and bin selection), you must specify them in the form definition or attributes file, or on a print command, when you print the job.

  Note: Duplexing is the default.
- Resolution conversion algorithms might yield degraded appearance when used to reduce the resolution of a data stream. For this reason, **PCL to AFP** might degrade the appearance of higher-resolution data streams when used with 240-pel printers. You should verify that print fidelity is satisfactory.
- There are subtle differences between PCL4 and PCL5e when it comes to handling fonts. While many PCL4 files will work with **PCL to AFP**, some might not produce the expected output.

Flags and values



- The **-a** flag determines the type of AFP data stream image to generate for each page in the PCL file.

  Values are:

IO1_G4
Compressed Image Object Content Architecture (IOCA) image in Modified TSS (formerly CCITT) T.6 G4 Facsimile Coding Scheme (G4 MMR) format. This is the recommended output type because it takes up less space on the fixed disk, and it prints faster.

Note: The 3812 and 3816 printers do not support printing with an image type of **IO1_G4**. For these printers, specify an image type of **IO1_MMR** because it is the compressed image type supported by these printers, and it will result in faster printing than uncompressed image types.

PPDS, PCL, and TCP/IP-attached IPDS™ printers can print IOCA images; however, only channel-attached printers that have the Advanced Function Image and Graphics (AFIG) feature installed can print IOCA images. Therefore, if you are printing images on channel-attached printers without the AFIG feature, select the **IM1** value.

IM1 IM1 image. This type of image is not compressed.

1O1 IOCA image. This type of image is not compressed.

IO1_MMR
Compressed IOCA image in Modified Modified Read (MMR) format.

PSEG_IO1_G4
Page segment of the specified image type.

PSEG_IM1
Page segment of the specified image type.

PSEG_IO1
Page segment of the specified image type.

PSEG_IO1_MMR
Page segment of the specified image type.

OVLY_IO1_G4
Overlay of the specified image type.

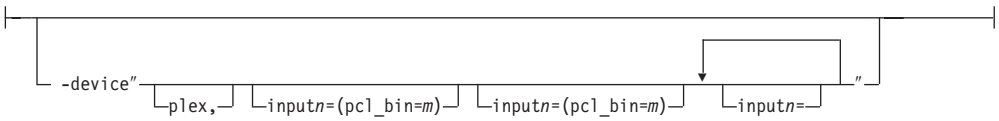
OVLY_IM1
Overlay of the specified image type.

OVLY_IO1
Overlay of the specified image type.

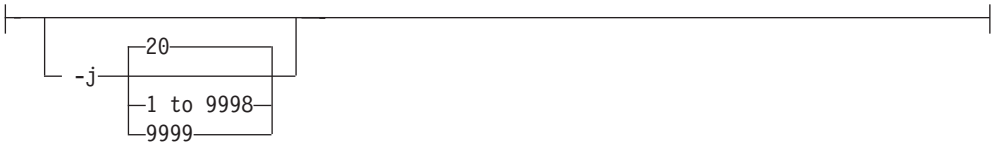
OVLY_IO1_MMR
Overlay of the specified image type.

Note: When generating page segments from multiple-page documents, you might want to use the **-p** flag to select which page is to be made into a page segment; otherwise, multiple page segments will be created, one for each page of PCL.

When generating overlays from multiple-page documents, you might want to use the **-p** flag to select which page is to be made into an overlay; otherwise, multiple overlays will be created, one for each page of PCL.



- The **plex** value specifies whether the transform recognizes or honors the plex commands in the data stream, and optionally, specifies how to associate the AFP input tray (**input*n***, where *n* is a value between 1 to 255) with the PCL bin (**pcl_bin=*m***, where *m* is a value between 0 to 59). When you do not specify **input*n*=(pcl_bin=*n*)** with **plex**, the plex command is used with no tray mappings.
- You can specify **input*n*=(pcl_bin=*m*)** up to twenty times.
- The number (*n*) you specify with **input** is the AFP input bin to be selected when the print description language tray selection characteristics are met.
- If you do not specify **plex**, the plex commands in the data stream are ignored.

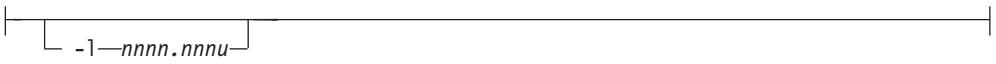


- Specifies the maximum amount of time, in minutes, to spend processing the job.
- Values are:

  20 20 minutes, the default

  1 to 9998
  The timer ranges from 1 to 9998 minutes, in one-minute increments

  9999 No time limit



- Specifies the length of the generated image; *nnnn.nnn* is a number that can optionally contain a decimal point, and *u* is the units in inches (**i**) or millimeters (**m**). If you do not specify a unit (**i** or **m**), **PCL to AFP** uses pels as the unit type.

  Note: If a text margin is already built into the file, try **-l11i** to set the length to 11 inches.
- For 240-pel resolution printers, values are:

  11i 11 inches, the default

  16 to 12720
  The length can be from 16 pels to 12720 pels, 0.065i to 53i, or 1.641m to 1346.25m. For example, these are all valid:

  ```
  -l 40m
  -l 200.5m
  -l 13i
  -l 4000
  ```
- For 300-pel resolution printers, values are:

  11i 11 inches, the default

  16 to 15900
  The length can be from 16 pels to 15900 pels, 0.052i to 53i, or 1.313m to 1346.24m. For example, these are all valid:

```
-l 40m
-l 200.5m
-l 13i
-l 5000
```

- For 480-pel resolution printers, values are:

  11i 11 inches, the default

  16 to 25440
  The length can be from 16 pels to 25440 pels, 0.033i to 53i, or 0.821m to 1346.22m. For example, these are all valid:

  ```
  -l 40m
  -l 200.5m
  -l 13i
  -l 8000
  ```

- For 600-pel resolution printers, values are:

  11i 11 inches, the default

  16 to 31800
  The length can be from 16 pels to 31800 pels, 0.0260i to 53i, or 0.657m to 1346.22m. For example, these are all valid:

  ```
  -l 40m
  -l 200.5m
  -l 13i
  -l 10000
  ```

- Determines the maximum amount of memory, in KB, that the transform can use. This flag might be useful if you are processing large PCL jobs that require a lot of memory.
- Values are:

  6000 6000KB (6MB), the default

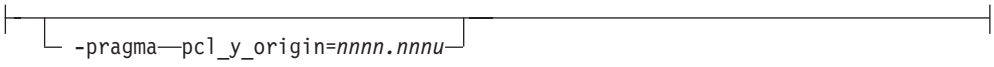
  2000 to *nnnnn*
  The maximum memory ranges from 2000 to *nnnnn* (where *nnnnn* is the maximum upper limit the operating system allows) up to 64MB.

- Specifies that the output should only contain selected pages. When you specify multiple **-p** flags, the **PCL to AFP** transform accumulates them and prints the identified pages in normal numerical order, regardless of the order you specify. Examples of values include:

  -p 1-10
  Output pages 1 through 10.

  -p 10- Output pages from page 10 until the end of the job.
- You can use **-p** when the **PCL to AFP** transform is processing one file at a time. This flag is ignored if you specify multiple files within the same job.

Specifies an X presentation page origin of the generated image; *nnnn.nnnu* is a number that can optionally contain a decimal point, and *u* is the units in inches (i) or millimeters (m). If you do not specify a unit (i or m), **PCL to AFP** uses pels as the unit type. You cannot specify fractional values (that is, you cannot use a decimal point) for pels. If this value is unspecified, zero is presumed.



Specifies an Y presentation page origin of the generated image; *nnnn.nnnu* is a number that can optionally contain a decimal point, and *u* is the units in inches (i) or millimeters (m). If you do not specify a unit (i or m), **PCL to AFP** uses pels as the unit type. You cannot specify fractional values (that is, you cannot use a decimal point) for pels. If this value is unspecified, zero is presumed.

Use *nnnnn* to specify the maximum number of bytes in a record. For example, `-pragma AFPDSRECORDLENGTH=8000` limits the record length to 8K.

The default is 32000, and the value range is 8000 to 32000.

- Specifies the resolution of the output image. Select the resolution based on the printer on which you will be printing the image.
- Values are:

  240 240 pels-per-inch (for example, InfoPrint 3812, 3825, 3827, 3835, and 3900 printers), the default

  300 300 pels-per-inch (for example, InfoPrint 3112, 3116, 4019, 4028, 4029, and 4039 printers and Hewlett-Packard printers)

  360 360 pels-per-inch (for example, InfoPrint 5000 printers)

  480 480 pels-per-inch

  600 600 pels-per-inch (for example, InfoPrint 4100 printers)

  720 720 pels-per-inch (for example, InfoPrint 5000 printers)

  Note: If you specify a resolution that the printer does not support, the image is printed under most conditions, but with degraded results. Specify the correct resolution for the printer that you will print the PCL job on.

- Specifies the width of the generated image; *nnnn.nnn* is a number that can optionally contain a decimal point, and *u* is the units in inches (**i**) or millimeters (**m**). If you do not specify a unit (**i** or **m**), **PCL to AFP** uses pels as the unit type.

  Note: If a text margin is already built into the file, try **-w8.5i** to set the width to 8.5 inches.

- For 240-pel resolution printers, values are:

  8.5i 8.5 inches, the default

  16 to 8160
  The width can be from 16 pels to 8160 pels, 0.065i to 34i, or 1.641m to 863.652m. For example, these are all valid:

  ```
  -w 40m
  -w 200.5m
  -w 13i
  -w 3300
  ```

- For 300-pel resolution printers, values are:

  8.5i 8.5 inches, the default

  16 to 10200
  The width can be from 16 pels to 10200 pels, 0.052i to 34i, or 1.313m to 863.642m. For example, these are all valid:

  ```
  -w 40m
  -w 200.5m
  -w 13i
  -w 5000
  ```

- For 480-pel resolution printers, values are:

  8.5i 8.5 inches, the default

  16 to 16320
  The width can be from 16 pels to 16320 pels, 0.033i to 34i, or 0.821m to 863.626m. For example, these are all valid:

  ```
  -w 40m
  -w 200.5m
  -w 13i
  -w 6600
  ```

- For 600-pel resolution printers, values are:

  8.5i 8.5 inches, the default

  16 to 20400
  The width can be from 16 pels to 20400 pels, 0.026i to 34i, or 0.657m to 863.621m. For example, these are all valid:

  ```
  -w 40m
  -w 200.5m
  -w 13i
  -w 10000
  ```

- Specifies an X offset (horizontal offset) of the generated image; *nnnn.nnn* is a number that can optionally contain a decimal point, and *u* is the units in inches (**i**) or millimeters (**m**). If you do not specify a unit (**i** or **m**), **PCL to AFP** uses pels as the unit type.

- An offset value specifies a border or margin around the generated image to avoid the non-printable areas of some printers. An X-offset value specifies the left and right margins of the generated image.
- For all printers, values are:

  0.167i 0.167 inches, the default

  0 to 8.5i
  The X offset must be less than half of the width (**-w**) of the generated image. For example, if you specify a width of 13i, the X offset can be no larger than 6.5i.

Note:

1. The X offset specified with **-x** must be less than half of the width specified with **-w**. If the -x value is greater than or equal to the half of the -w value, an error message is displayed.
2. The X-offset value specifies margins on *both* the left and right sides of the page.
3. PCL processing is slower when you use the **-x** flag.

- Specifies a Y offset (vertical offset) of the generated image; *nnnn.nnn* is a number that can optionally contain a decimal point, and *u* is the units in inches (**i**) or millimeters (**m**). If you do not specify a unit (**i** or **m**), **PCL to AFP** uses pels as the unit type.
- An offset value specifies a border or margin around the generated image to avoid the non-printable areas of some printers. A Y-offset value specifies the top and bottom margins of the generated image.
- For all printers, values are:

  0.167i 0.167 inches, the default

  0 to 8.5i
  The Y offset must be less than half of the length (**-l**) of the generated image. For example, if you specify a length of 14i, the Y offset can be no larger than 7.0i.

Note:

1. The Y offset specified with **-y** must be less than half of the length specified with **-l**. If the -y value is greater than or equal to the half of the -l value, an error message is displayed.
2. The Y-offset value specifies margins on *both* the top and bottom edges of the page.
3. PCL processing is slower when you use the **-y** flag.

Transforming PCL image data

The output of the **PCL to AFP** transform is AFP image data for any type of PCL input, whether it is text or images. The image created by the **PCL to AFP** transform minimizes white space within an image block by defining the image block size to be exactly the right size to contain all of the black pels of the image. A PCL image might not print if any part of the image lies outside of the valid printable area. In

addition, be aware that using form definitions that specify a non-zero logical page origin might move a valid PCL image out of the printable area; thus, the image does not print.

The **PCL to AFP** transform lets you specify the length and the width of PCL images. Before you use the **-l** and **-w** flags of the **PCL to AFP** transform, it is helpful to understand how PCL images are placed on the page.

Figure 6 shows an example of a PCL image. This image is 8.5 inches high and 11 inches wide, measured from the lower-left corner of the image.

If you want to print the entire image, specify a length of 11i and a width of 8.5i. When the image is printed, the upper-left corner of the image is placed at the point on the page called the logical page origin, which is specified in the form definition. The logical page origin is the point on the form where the page of data is positioned, and it is specified as an offset from the top-left corner of the sheet. Therefore, if the form definition has a logical page origin of 0.165 inches from both the left and top sides of the sheet, the top-left corner of the image is placed 0.165 inches down and to the left of the upper left corner of the sheet.

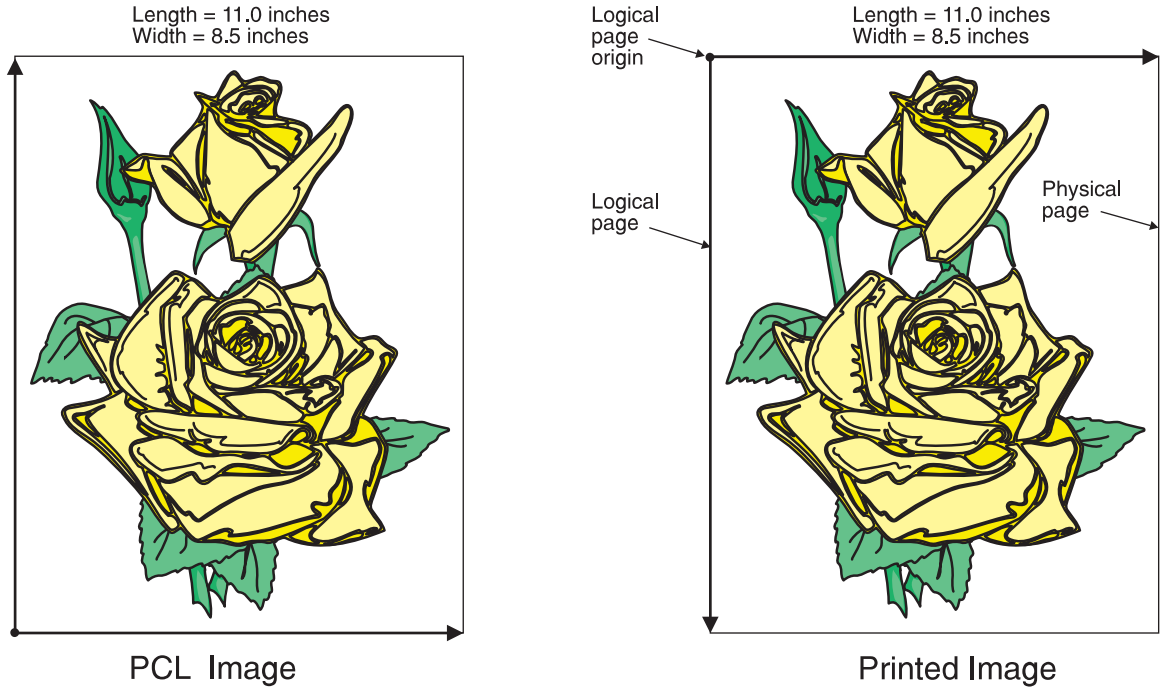


Figure 6. A PCL image

All this gets more complicated if you do not specify the entire image. For example, if you want to crop the image so that you only use the lower left corner, you would specify a width of 7i and a length of 7i with the **PCL to AFP** transform. The upper left corner of the resulting image is then placed at the logical page origin (Figure 7 on page 112).

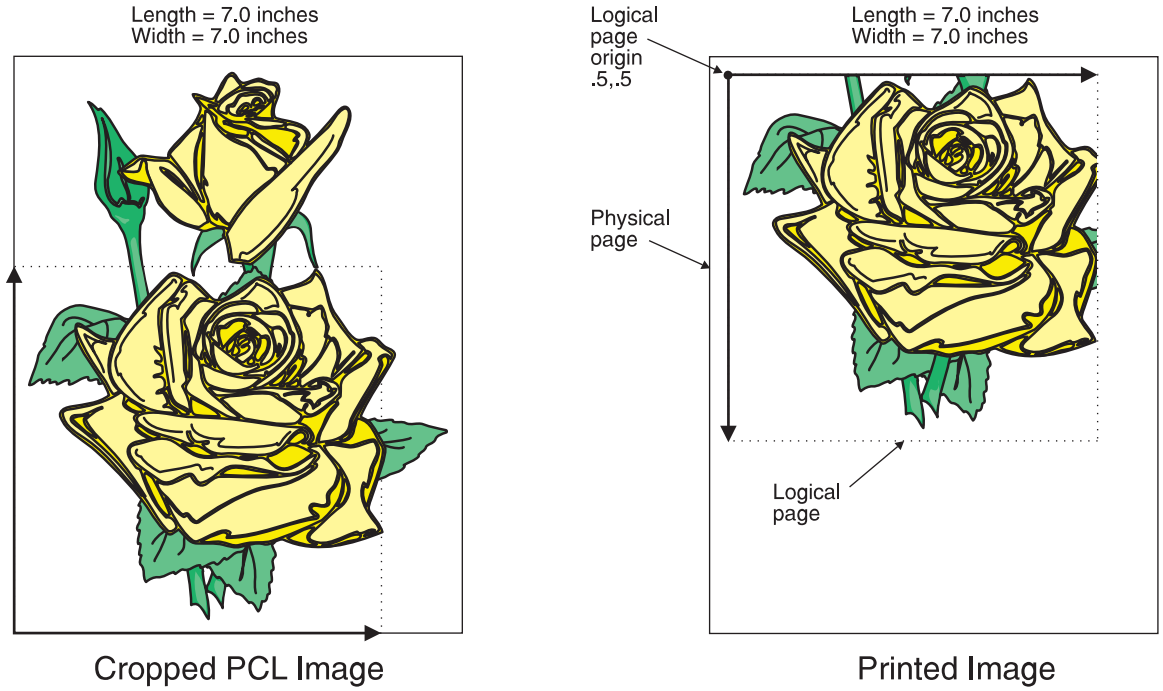


Figure 7. A cropped PCL image

In this example, specify a PCL image that is 8.5 inches wide and 11 inches high. Again, the upper-left corner of the transformed image is placed at the logical page origin. Unless you specify a form definition with the print job that has a zero logical page origin (for example, **F100S**, **F100D**, or **F100T**), the page will not print because part of the image is outside the valid printable area (Figure 8 on page 113).

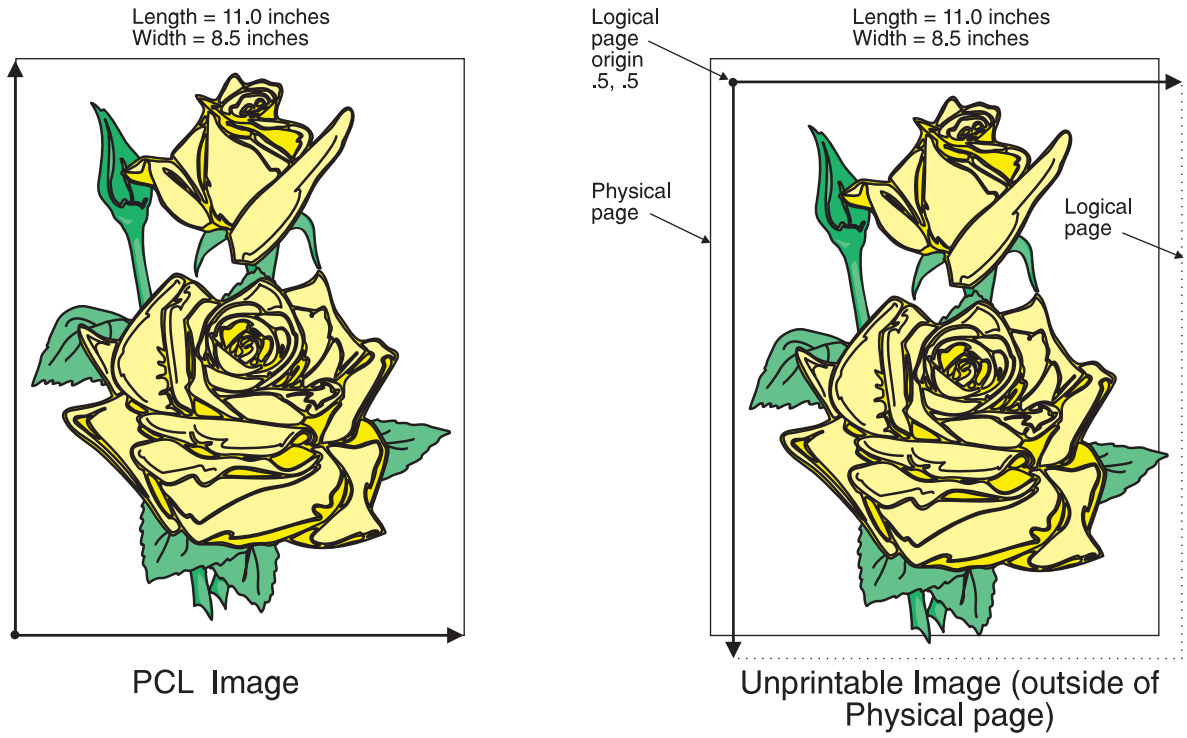


Figure 8. A PCL image offset from the top-left corner

As you can see from Figure 8, specifying the correct form definition is extremely important, particularly when you are printing a full-page image.

The default length and width values work with the default form definitions that are available for each type of printer.

However, if you want to specify exact placement of your PCL output on the page using a zero vertical and horizontal offset from the top-left corner of the page, specify one of these form definitions:

- **F100S**
- **F100D**
- **F100T**

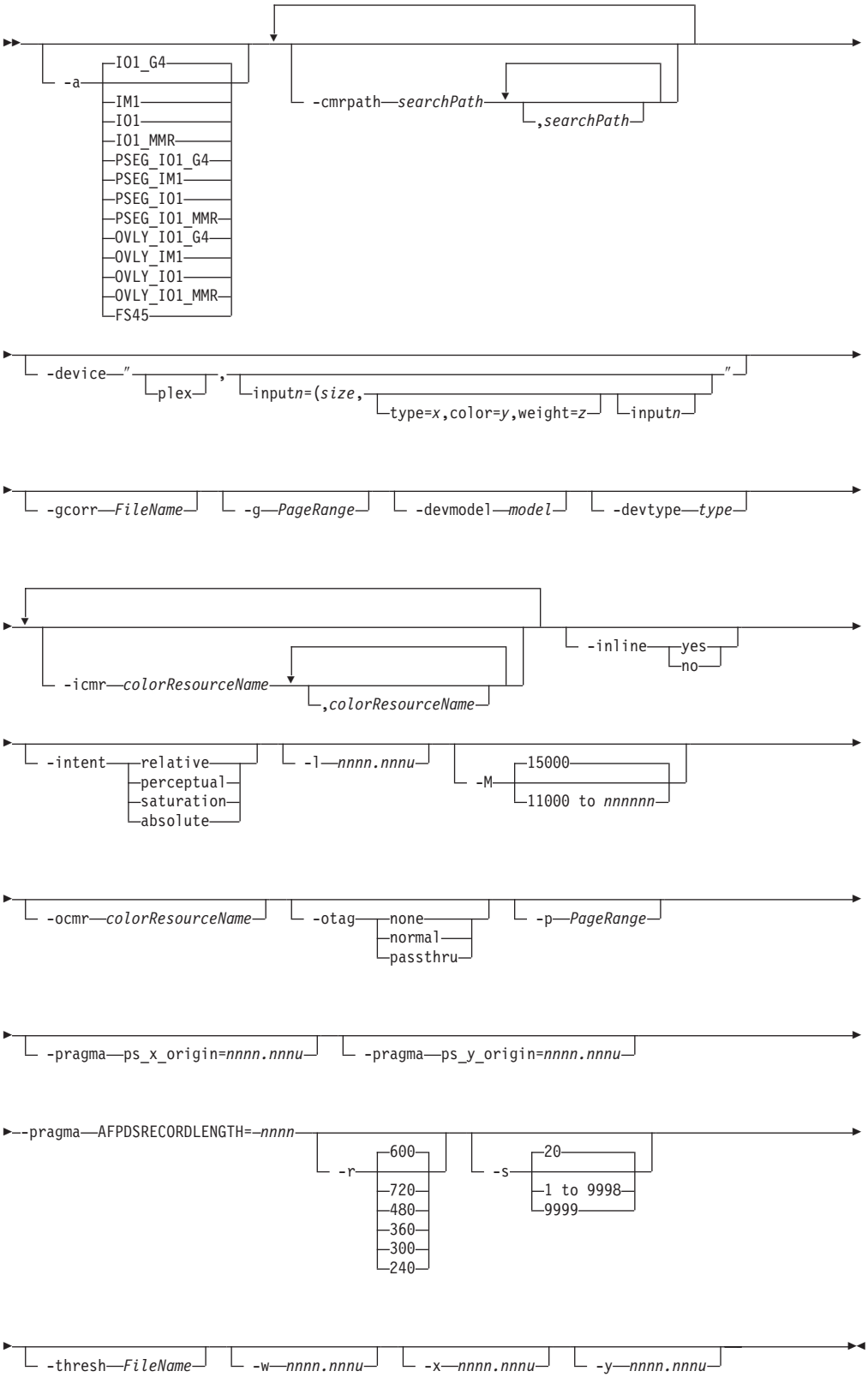
If you specify a 0 horizontal and vertical offset in the form definition, the image produced by the **PCL to AFP** transform might be printed in the unprintable area of the printer. To avoid printing in the unprintable area, you can specify the **-x** (X offset) and **-y** (Y offset) flags on the **PCL to AFP** transform. These flags add white space to the top and left side of the image produced by the transform, ensuring that no data will print in the unprintable area.

Transform PDF or PostScript data to AFP

This section describes the **PDF to AFP** transform and the **PostScript to AFP** transform. It includes syntax, options, and values.

These transforms are described in one section because they share the same program.

Syntax


-a
IO1_G4
IM1
IO1
IO1_MMR
PSEG_IO1_G4
PSEG_IM1
PSEG_IO1
PSEG_IO1_MMR
OVLY_IO1_G4
OVLY_IM1
OVLY_IO1
OVLY_IO1_MMR
FS45
-cmrpath searchPath
,searchPath
-device "
plex
,
inputn=(size,
type=x,color=y,weight=z
inputn
"
-gcorr FileName
-g PageRange
-devmodel model
-devtype type
-icmr colorResourceName
,colorResourceName
-inline
yes
no
-intent
relative
perceptual
saturation
absolute
-l nnnn.nnnu
-M
15000
11000 to nnnnnn
-ocmr colorResourceName
-otag
none
normal
passthru
-p PageRange
-pragma ps_x_origin=nnnn.nnnu
-pragma ps_y_origin=nnnn.nnnu
--pragma AFPDSRECORDLENGTH=nnnn
-r
600
720
480
360
300
240
-s
20
1 to 9998
9999
-thresh FileName
-w nnnn.nnnu
-x nnnn.nnnu
-y nnnn.nnnu

Description

Use the **PostScript to AFP** transform and the **PDF to AFP** transform to transform a PostScript or Portable Document Format (PDF) data stream file into an AFP data stream file.

If you specify multiple values of the same flag, **PostScript to AFP** uses the last value specified, except for the **-g** and **-p**, flags. Multiple values of the **-g** and **-p** flags are accumulated and the pages identified for printing are printed in normal numerical sequence, regardless of the order you specify.

Notes:

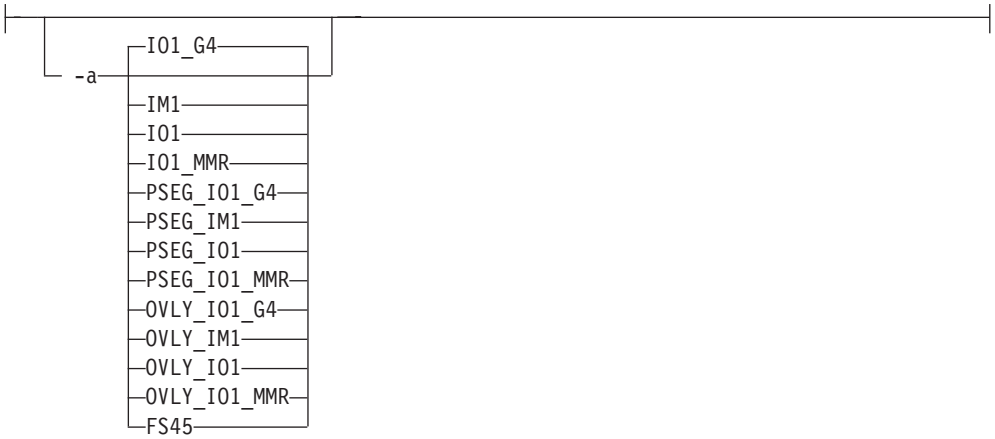
1. If the transforms fail because of missing fonts, you can use the **Set Transform Server properties** page to turn on font substitution.
2. If large files start failing to process with no explanation, you can change the hash-size value in the `/opt/IBM/itm/hn/cfg/feps.cfg` to one of these numbers:
   - 1048583
   - 2097169
   - 4194319

   The greater the number the lower the chance that you will run out of allocation slots; however, more memory is being consumed by the processes when idle.

Limitations

- PostScript data can contain device commands (for example, to begin or end duplexing or to change the input bin). Because the AFP architecture defines those device functions in a form definition resource instead of the print data, the **PostScript to AFP** transform ignores the device commands in the print data. To access those device functions (such as duplexing and bin selection), you must specify them in the form definition or attributes file, or on a print command, when you print the job.
- Resolution conversion algorithms may yield degraded appearance when used to reduce the resolution of a data stream. For this reason, **PostScript to AFP** might degrade the appearance of higher-resolution data streams when used with 240-pel printers. You should verify that print fidelity is satisfactory.
- With InfoPrint ProcessDirector for Linux, PDF Version 1.7 works with SLES 10, and PDF Version 1.6 works with SLES 9.

Flags and values



- Determines the type of AFP data stream image to generate for each page in the PostScript or PDF file.

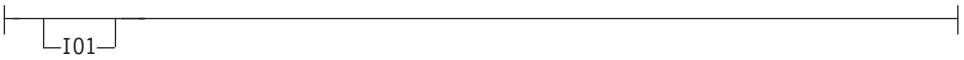
  Values are:

  – Compressed Image Object Content Architecture (IOCA) image in Modified TSS (formerly CCITT) T.6 G4 Facsimile Coding Scheme (G4 MMR) format. This is the recommended output type because it takes up less space on the fixed disk, and it prints faster.

    Note: The 3812 and 3816 printers do not support printing with an image type of **IO1_G4**. For these printers, specify an image type of **IO1_MMR** because it is the compressed image type supported by these printers. This will result in faster printing than uncompressed image types.

    PPDS, PCL, and TCP/IP-attached IPDS printers can print IOCA images; however, only channel-attached printers that have the Advanced Function Image and Graphics (AFIG) feature installed can print IOCA images. Therefore, if you are printing images on channel-attached printers without the AFIG feature, select the **IM1** value.

    IM1 image. This type of image is not compressed.



    IOCA image. This type of image is not compressed.

    Compressed IOCA image in Modified Modified Read (MMR) format.

  – Page segment of the specified image type.

    Note: When generating page segments from multiple-page documents, you might want to use the **-p** flag to select which page is to be made into a page segment; otherwise, multiple page segments will be created, one for each page of PostScript or PDF.

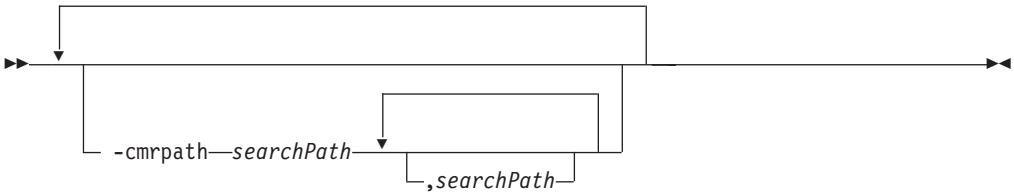
– Overlay of the specified image type.

Note: When generating overlays from multiple-page documents, you might want to use the **-p** flag to select which page is to be made into an overlay; otherwise, multiple overlays will be created, one for each page of PostScript or PDF.

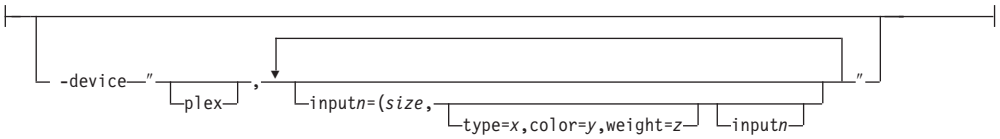
FS45 IOCA color format.

FS45.ovly
IOCA color format for overlays.

FS45.pseg
IOCA color format for page segments.



- Specifies the search order for locating color resources. This search order is a series of directory paths that color resources are located in. If you specify two or more **-cmrpath** flags, the Transform Feature will concatenate these search orders.



- The **plex** value specifies whether the transform recognizes or honors the plex commands in the data stream, and optionally, specifies how to associate the AFP input tray (**input*n***) with the contents of the output bin. When you specify **input*n***, you must specify ***size***, where ***size*** is a text string like letter, legal, a3, a4, b4, b5, ledger, or a dimension like 8.5ix11i. Dimensions can be specified as inches (i), millimeters (m), or points (p). The other three input descriptors (**type**, **color**, and **weight**) are optional, but when you specify them, you must separate them with a comma and no spaces.
- When you do not specify **input*n*=...)** with **plex**, plex commands with no additional information for the tray contents are recognized.
- You can specify [**input*n*=...** as many times as you need to.
- The number (*n*) you specify with **input** is the AFP input bin to be selected when the print description language tray selection characteristics are met.
- If you do not specify **plex**, the plex commands in the data stream are ignored.
- If only **input1** is specified, the width (**-w**) and length (**-l**) values must match the size of the media specified for **input1**. For example:

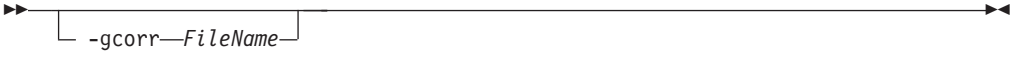
```
ps2afp test.ps -o test.afp -w 210m -l 297m -device 'plex, input1=(a4)'
```

If more than one input is specified, the **-w** and **-l** values must match one of the **input*n*** size specifications. For example:

```
ps2afp test.ps -o test.afp -w 8.5i -l 11i -device 'plex, input1=(letter), input2=(a4)'
```

- Specify the device model of the actual device.

- Specify the device type of the actual device.



- Specifies a *FileName* with a gray scale mapping table for halftoning of the gray scale and color images to bi-level for output. The *FileName* you specify can be a fully qualified filename. If you do not specify a path, the Transform Feature looks in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation.
- The mapping table must be provided to compensate for the printing characteristics of the particular output device and paper type, such as dot gain. This file must contain either:
  - 256 real numbers, one for each level of gray in the 8-bit gray scale image
  - The PostScript **settransfer** operator
- The algorithm converts every image to 8-bit gray scale before applying the halftoning algorithm. The default might not produce the halftone image quality that your printer is capable of. Mapping tables for several different engine types and line screens are supplied with the Transform Feature and are installed in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation. To tune your image quality, select the file that matches your printer model. See also options **-alg** and **-thresh**. PostScript code submitted using the **-thresh** option can have the same effect as **-gcorr**.

- Specifies that the output should only contain selected pages. When you specify multiple **-g** flags, the **PostScript to AFP** transforms only the specified pages in the PostScript or PDF input data stream, then prints the transformed pages in normal numerical order, regardless of the order you specify. Examples of values include:

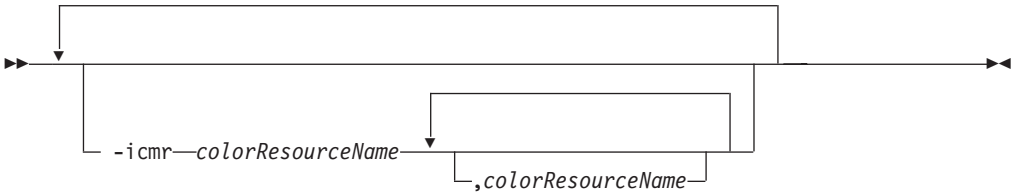
  -g even
  Output even pages.

  -g odd
  Output odd pages.

  -g 1-10
  Output pages 1 through 10.

  -g 10- Output pages from page 10 until the end of the job.

- You should only specify the **-g** flag when the input data conforms to Adobe Document Structuring Conventions (DSC). If you have any doubt about the input data, use the **-p** flag.
- You cannot specify both the **-g** flag and the **-p** flag.
- You can use **-g** when the **PostScript to AFP** transform is processing one file at a time. This flag is ignored if you specify multiple files within the same job.



- Specifies one or more input or audit color resources. The color resources can be either ICC Profiles or Color Management Resources (CMRs). If you specify two or more **-icmr** flags on a transform command line, InfoPrint will concatenate the resources together. If two or more resources that are specified by the **-icmr** flags are for the same color space, InfoPrint will use the last specified resource.

- Specifies whether the output Color Management Resource (CMR) will be placed inline in the data stream. If you specify two or more **-inline** flags on a transform command line, the Transform Feature will use the last specified value.

- Specifies the rendering intent. You can also use the **-pragma** option to specify the rendering intent by setting:

  ```
  -pragma colorRendering=relative
  ```

  If you specify two or more **-intent** flags on a transform command line, the Transform Feature will use the last specified value.

- Specifies the length of the generated image; *nnnn.nnn* is a number that can optionally contain a decimal point, and *u* is the units in inches (**i**) or millimeters (**m**). If you do not specify a unit (**i** or **m**), **PostScript to AFP** uses pels as the unit type. You cannot specify fractional values (that is, you cannot use a decimal point) for pels.

  Note: If a text margin is already built into the file, try **-l11i** to set the length to 11 inches.

  For 240-pel resolution printers, values are:

11i 11 inches, the default

16 to 12720
The length can be from 16 pels to 12720 pels, 0.065i to 53i, or 1.641m to 1346.2m. For example, these are all valid:

```
-l 40m
-l 200.5m
-l 13i
-l 4000
```

For 300-pel resolution printers, values are:

11i 11 inches, the default

16 to 15900
The length can be from 16 pels to 15900 pels, 0.052i to 53i, or 1.313m to 1346.2m. For example, these are all valid:

```
-l 40m
-l 200.5m
-l 13i
-l 5000
```

For 480-pel resolution printers, values are:

11i 11 inches, the default

16 to 25440
The length can be from 16 pels to 25440 pels, 0.065i to 53i, or 1.641m to 1346.2m. For example, these are all valid:

```
-l 40m
-l 200.5m
-l 13i
-l 8000
```

For 600-pel resolution printers, values are:

11i 11 inches, the default

16 to 31800
The length can be from 16 pels to 31800 pels, 0.052i to 53i, or 1.313m to 1346.2m. For example, these are all valid:

```
-l 40m
-l 200.5m
-l 13i
-l 10000
```

- Determines the maximum amount of memory, in KB, that the transform can use. This flag can be useful if you are processing large PostScript or PDF jobs that require a lot of memory.

  Values are:

  15000 15000KB (15MB)

  11000 to *nnnnnn*
  The maximum memory ranges from 11000 to *nnnnnn* (where *nnnnnn* is the maximum upper limit the operating system allows) up to 999MB. 15000 is the default.

- Specifies an output color resource. The color resource can be either an ICC Profile or a Color Management Resource (CMR). If you specify two or more **-ocmr** flags on a transform command line, the Transform Feature will use the last specified value.

- Specifies how the output AFP will be tagged with color information. The allowed values are:

  none There will be no tagging in the output AFP.

  normal
  The Transform Feature will use the specified **-ocmr** value to tag the output AFP as an input (audit) Color Management Resource (CMR).

  passthru
  The Transform Feature will use the specified **-ocmr** value to tag the output AFP as both an input (audit) CMR and an output (instruction) CMR.

  If you specify two or more **-otag** flags on a transform command line, the Transform Feature will use the last specified value.

- Specifies that the output should only contain selected pages. When you specify multiple **-p** flags, the **PostScript to AFP** transforms all the pages in the input, then extracts the specified MO:DCA-P pages and prints them in normal numerical order, regardless of the order you specify.

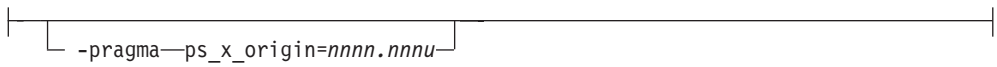
  Examples of values include:

  -p even
  Output even pages.

  -p odd
  Output odd pages.

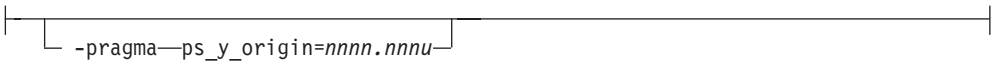
  -p 1-10
  Output pages 1 through 10.

  -p 10- Output pages from page 10 until the end of the job.
- You cannot specify both the **-g** flag and the **-p** flag.
- You can use **-p** when the **PostScript to AFP** transform is processing one file at a time. This flag is ignored if you specify multiple files within the same job.



Specifies an X presentation page origin of the generated image; *nnnn.nnnu* is a number that can optionally contain a decimal point, and *u* is the units in inches

(i) or millimeters (m). If you do not specify a unit (i or m), **PostScript to AFP** uses pels as the unit type. You cannot specify fractional values (that is, you cannot use a decimal point) for pels. If this value is unspecified, zero is presumed.



Specifies an Y presentation page origin of the generated image; *nnnn.nnnu* is a number that can optionally contain a decimal point, and *u* is the units in inches (i) or millimeters (m). If you do not specify a unit (i or m), **PostScript to AFP** uses pels as the unit type. You cannot specify fractional values, that is, you cannot use a decimal point, for pels. If this value is unspecified, zero is presumed.

Use *nnnnn* to specify the maximum number of bytes in a record. For example, `-pragma AFPDSRECORDLENGTH=8000` limits the record length to 8K.

The default is 32000, and the value range is 8000 to 32000.

- Specifies the resolution of the output image. Select the resolution based on the printer on which you will be printing the image.

  Values are:

  240 240 pels-per-inch (for example, 3812, 3825, 3827, 3835, and 3900 printers)

  300 300 pels-per-inch (for example, 4019, 4028, 4029, and 4039 printers and Hewlett-Packard printers)

  360 360 pels-per-inch (for example, InfoPrint 5000 printers)

  480 480 pels-per-inch

  600 600 pels-per-inch (for example, InfoPrint 4100 printers), the default

  720 720 pels-per-inch (for example, InfoPrint 5000 printers)

- Specifies the maximum amount of time, in minutes, that the PostScript interpreter remains idle between jobs before it goes down. When the PostScript interpreter is running, it uses some of the workstation memory.

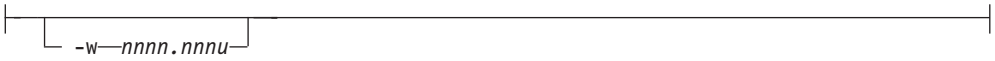
  Values are:

  20 The default time is 20 minutes.

1 to 9998
The time is the number of minutes specified in one-minute increments.

9999 There is no time limit.

- Specifies a *FileName* that contains a PostScript Type 1 or Type 3 halftone dictionary. The *FileName* you specify can be a fully qualified filename. If you do not specify a path, the Transform Feature looks in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation.
- Halftone dictionaries for several different engine types and line screens are supplied with the Transform Feature and are installed in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation. To tune your image quality, select the file that matches your printer model.
- Alternatively, the PostScript code can specify the **setscreen** operator instead of a Type 1 dictionary. The halftone cell in the dictionary is used to overwrite the default ordered dither clustered dot halftone cell. If the PostScript code contains a transfer function, either in the halftone dictionary or specified by the **settransfer** operator, the current grayscale correction curve is overwritten as if **-gcorr** were used.



- Specifies the width of the generated image; *nnnn.nnn* is a number that can optionally contain a decimal point, and *u* is the units in inches (**i**) or millimeters (**m**). If you do not specify a unit (**i** or **m**), **PostScript to AFP** uses pels as the unit type. You cannot specify fractional values (that is, you cannot use a decimal point) for pels.

  Note: If a text margin is already built into the file, try **-w8.5i** to set the width to 8.5 inches.

  For 240-pel resolution printers, values are:

  8.5i 8.5 inches, the default

  16 to 10200
  The width can be from 16 pels to 10200 pels, 0.052i to 34i, or 1.313m to 863.628m. For example, these are all valid:

  ```
  -w 40m
  -w 200.5m
  -w 13i
  -w 5000
  ```

  For 300-pel resolution printers, values are:

  8.5i 8.5 inches, the default

  16 to 10200
  The width can be from 16 pels to 10200 pels, 0.052i to 34i, or 1.313m to 863.628m. For example, these are all valid:

  ```
  -w 40m
  -w 200.5m
  -w 13i
  -w 5000
  ```

  For 600-pel resolution printers, values are:

8.5i 8.5 inches, the default

16 to 20400
The width can be from 16 pels to 20400 pels, 0.052i to 34i, or 1.313m to 863.628m. For example, these are all valid:

```
-w 40m
-w 200.5m
-w 13i
-w 5000
```

- Specifies an X offset (horizontal offset) of the generated image; *nnnn.nnn* is a number that can optionally contain a decimal point, and *u* is the units in inches (**i**) or millimeters (**m**). If you do not specify a unit (**i** or **m**), **PostScript to AFP** uses pels as the unit type. You cannot specify fractional values (that is, you cannot use a decimal point) for pels.

  An offset value specifies a border or margin around the generated image to avoid the non-printable areas of some printers. An X-offset value specifies the left and right margins of the generated image.

  Values are:

  0 No border is specified. This is the default.

  0 to 17i
  The X offset must be less than half of the width (**-w**) of the generated image. For example, if you specified -w=12i, this value can be no greater than 6i.

- Specifies a Y offset (vertical offset) of the generated image; *nnnn.nnn* is a number that can optionally contain a decimal point, and *u* is the units in inches (**i**) or millimeters (**m**). If you do not specify a unit (**i** or **m**), **PostScript to AFP** uses pels as the unit type. You cannot specify fractional values (that is, you cannot use a decimal point) for pels.

  An offset value specifies a border or margin around the generated image to avoid the non-printable areas of some printers. A Y-offset value specifies the top and bottom margins of the generated image.

  Values are:

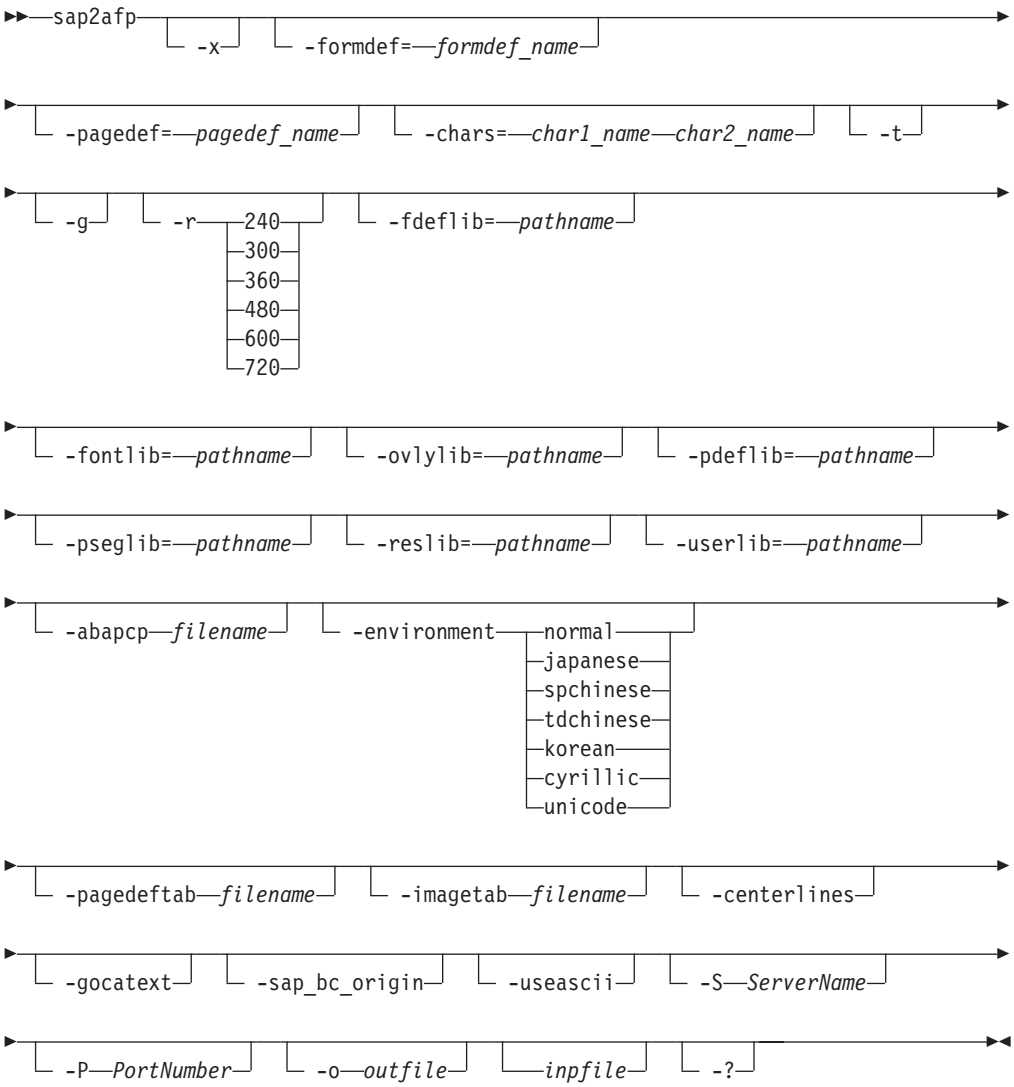
  0 No border is specified. This is the default.

  0 to 17i
  The Y offset must be less than half of the length (**-l**) of the generated image. For example, if you specified -l=16i, this value can be no greater than 8i.

Transform SAP OTF or ABAP data to AFP

Syntax

sap2afp



Description

Use the **sap2afp** command to transform an SAP Output Text Format (OTF) or Advanced Business Application Programming (ABAP) file into an AFP data stream file.

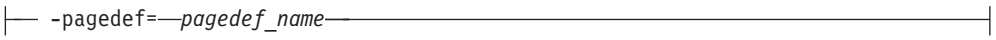
Automatic invocation

The PSF DSS automatically invokes the **sap2afp** transform command whenever you submit a OTF or ABAP file for printing. You can pass options to **sap2afp** using the **other-transform-options** attribute on the **pdpr** command or the **-o** flag of the AIX print commands and the **lprafp** command. You can also pass options to **sap2afp** through InfoPrint Submit Express or InfoPrint Job Ticketer with the Print-on-Demand feature of InfoPrint Manager. Parameters that are not supported, such as **-r 300**, can be passed in InfoPrint Submit Express by clicking **Advanced** tab and entering them in the **Transform options** field or in InfoPrint Job Ticketer by clicking **Transform Settings** page and entering them in the **Transform options** field.

Flags

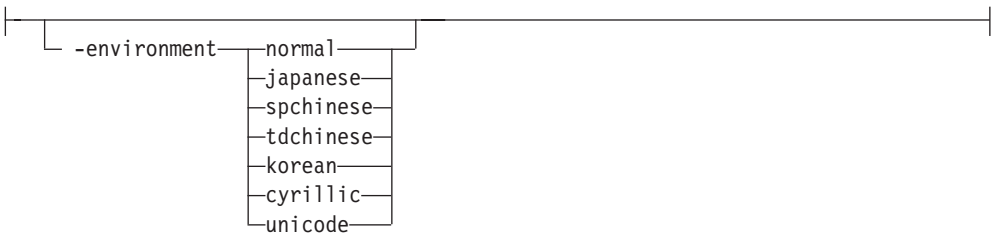
This flag is available for backward compatibility purposes. When calling the **sap2afp** command, the resources specified in the appropriate `pagedef tab` file are used and therefore, entering the **-x** parameter is not necessary. The parameters `-formdef`, `-pagedef` and `-chars` will take precedence, regardless of the fact that **-x** was specified or not.

Specifies the name of the form definition to be used to transform an SAP file into an AFP data stream file.



Specifies the name of the page definition to be used to transform an Advanced Business Application Programming (ABAP) file into an AFP data stream file.

Specifies the name of the fonts to be used by ACIF in order to transform an Advanced Business Application Programming (ABAP) file into an AFP data stream file in a non-Unicode environment.



Specifies one of the legal values for the possible environments. You can only use this flag when you are transforming an ASCII-encoded ABAP file.

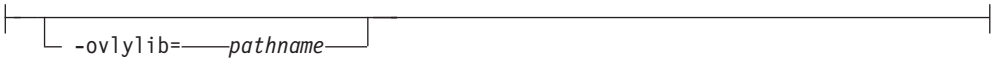
Traces program execution.

Invokes the Graphics Object Content Architecture (GOCA) feature of the printer device. The GOCA feature lets you print boxes with four different levels of shading, as well as clear and solid boxes.

Specifies the printer resolution as dots-per-inch (DPI) used to print image data in the job. If you do not specify the **-r** flag, the **DEFRES** value in the **image.tab** file is used. In the **image.tab** file shipped with InfoPrint, the **DEFRES** value is **600**.

Specifies the *pathname* for the form definition resources. You can only use this flag when you are transforming an ABAP file.

Specifies the *pathname* for the font resources. You can only use this flag when you are transforming an ABAP file.



Specifies the *pathname* for the overlay resources. You can only use this flag when you are transforming an ABAP file.

Specifies the *pathname* for the page definition resources. You can only use this flag when you are transforming an ABAP file.

Specifies the *pathname* for the page segment resources. You can only use this flag when you are transforming an ABAP file.

Specifies the *pathname* for the system resources. You can only use this flag when you are transforming an ABAP file.

Specifies the *pathname* for the user resources. You can only use this flag when you are transforming an ABAP file.

Specifies the *filename* to use instead of the information in the default defcp tab file selected. You can only use this flag when you are transforming an ABAP file.

Specifies the *filename* to use instead of the information in the default pagedef tab file selected.

Specifies the *filename* to use instead of the information in image.tab.

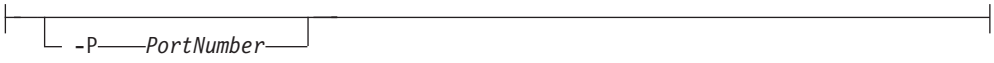
Specifies the use of the SAP specification for centering BX boxes.

Specifies the use of GOCA fonts from the 6400fonts.tab for ST text data.

Specifies the SAP bar code orientation point as the lower left corner.

Specifies that data should be interpreted as ASCII in SAPGOF files with ST commands that use CP4102 or CP4103 with simple lengths.

Specifies the name of the server to be used for processing.



Specifies the port number that the server monitors (set by the **-S** flag).

Specifies the name of the output file.

Specifies the input file.

Displays the **sap2afp** help file.

The sap2afp configuration files

This section contains examples for the configuration files required with the **sap2afp** transform:

- **barcode.tab**
- **defcp.tab**
- **defcp.tab.unicode**
- **defcp.tab.japan**
- **defcp.tab.korea**
- **defcp.tab.spchinese**
- **defcp.tab.tdchinese**
- **defcp.tab.cyr**
- **fonts.tab**
- **fonts.tab.unicode**
- **image.tab**
- **pagedef.tab**
- **pagedef.tab.unicode**
- **pagedef.tab.japan**
- **pagedef.tab.korea**
- **pagedef.tab.spchinese**
- **pagedef.tab.tdchinese**
- **pagedef.tab.cyr**
- **userenv**
- *xxxxyyyy*.**tab**

Notes:

1. All tables can contain comments (starting with **//** in column 1) and empty lines. These lines are ignored by the **sap2afp** transform.
2. All table entries are case-sensitive.

barcode.tab configuration file

This table describes the bar code mappings. SAP calls bar codes by names that must be mapped into the matching bar codes available with Bar Code Object Content Architecture™ (BCOCA™).

barcode.tab uses these keyword-value pairs:

BarCode
Specifies the OTF bar code names (**SAPBARCODE** parameter of the **BC** OTF command). The maximum length of this field is 8 bytes. It can contain any value.

Type Specifies the AFP bar code type as defined in *InfoPrint Data Stream and Object Architectures: Bar Code Object Content Architecture Reference* for the **Barcode Type** parameter of the **Barcode Data Descriptor** Structured

Field. The content can be any decimal value between 0 and 999. The **sap2afp** transform does not verify that this value maps to a valid hexadecimal barcode type.

Mode Specifies the modifier byte in the **Barcode Modifier** parameter of the **Barcode Data Descriptor** Structured Field. Any numeric value between 0 and 999 is accepted and not verified.

Flag Controls the printing of the Human Readable Interface (**HRI**) character. Specify one of these values:

0 Causes the **HRI** character to be printed

128 Causes the **HRI** character not to be printed

ModWidth=*n*

This optional keyword specifies the width of the smallest defined bar code element, using mils (thousandths of an inch). For bar code types that explicitly specify the module width, such as POSTNET or RM4SCC, this field is ignored. The range of values allowed is 1–254. If **ModWidth** is not specified, the printer default ModWidth is used.

n specifies the width of each module, using thousandths of an inch (1/1000) as the unit of measurement.

Ratio=*n*

This optional keyword specifies the ratio between the width of the wide and the narrow bar code elements. The range of values allowed is 100–500, but you must specify a value appropriate for your printer and bar code type. If the values you specify are not appropriate for your printer, error messages are issued at printing time. If **Ratio** is not specified, the printer default Ratio is used.

n specifies the **Ratio** as a percent value. The ratio value should be between 200 and 300 in the form*nnn*. For example, 200 represents a ratio of 2 to 1; 250 represents a ratio of 2.5 to 1. For bar code types that explicitly specify the module width (for example, POSTNET and RM4SCC, this field is ignored. If RATIO is not specified, the default ratio for the bar code symbol is used.

Note: Many barcode types do not support Ratio values or if they do, the Ratio values are in certain ranges that are type-specific.

This example uses both the **Ratio** and **ModWidth** optional keywords:

```
BarCode=BC_CD39 Type=001 Mode=001 Flag=128 Ratio=200 ModWidth=10
```

Notes:

1. The system administrator is responsible for the values entered in the table. Incorrect values are not verified and might result in errors.
2. The second group of bar codes in the **barcode.tab** file (following the blank line) is supported from R/3 Release 3.0A only.
3. Although 2D barcode support has been added to InfoPrint Manager, the system administrator needs to update the `barcode.tab` with the information for 2D barcode for users who need to use them.

Figure 9 on page 131 shows a sample **barcode.tab** configuration file.

```
// Barcode table

// Format : Barcode=ARTNR Type=017 Mode=002

//BarCode = 30F9     Type = 001 Mode = 001 Flag = 000
//BarCode = 30F91    Type = 001 Mode = 002 Flag = 000
//BarCode = MSI      Type = 002 Mode = 002 Flag = 000
//BarCode = UPCA     Type = 003 Mode = 000 Flag = 000
//BarCode = UPCE     Type = 005 Mode = 000 Flag = 000
//BarCode = UPC2     Type = 006 Mode = 000 Flag = 000
//BarCode = UPC5     Type = 007 Mode = 000 Flag = 000
//BarCode = EAN8     Type = 008 Mode = 000 Flag = 000
//BarCode = EAN13    Type = 009 Mode = 000 Flag = 000
//BarCode = IND25    Type = 010 Mode = 002 Flag = 000
//BarCode = MAT25    Type = 011 Mode = 002 Flag = 000
//BarCode = INTER    Type = 012 Mode = 002 Flag = 000
//BarCode = CODA     Type = 013 Mode = 002 Flag = 000
//BarCode = C128     Type = 017 Mode = 002 Flag = 000
//BarCode = EAN2     Type = 022 Mode = 000 Flag = 000
//BarCode = EAN5     Type = 023 Mode = 000 Flag = 000
//BarCode = POST     Type = 024 Mode = 002 Flag = 000
//BarCode = AUFNR    Type = 001 Mode = 001 Flag = 128

BarCode = ARTNR    Type = 017 Mode = 002 Flag = 000
BarCode = AUFNR    Type = 017 Mode = 002 Flag = 000
BarCode = BARCLVS  Type = 001 Mode = 001 Flag = 000

BarCode = BC_C128B Type = 017 Mode = 002 Flag = 128
BarCode = BC_CD39  Type = 001 Mode = 001 Flag = 128
BarCode = BC_CD39C Type = 001 Mode = 002 Flag = 128
BarCode = BC_EAN13 Type = 009 Mode = 000 Flag = 128
BarCode = BC_EAN8  Type = 008 Mode = 000 Flag = 128
BarCode = BC_I25   Type = 012 Mode = 001 Flag = 128
BarCode = BC_I25C  Type = 012 Mode = 002 Flag = 128
BarCode = BC_MSI   Type = 002 Mode = 001 Flag = 128
BarCode = BC_MSIC  Type = 002 Mode = 002 Flag = 128
BarCode = BC_MSIC1 Type = 002 Mode = 003 Flag = 128
BarCode = BC_MSIC2 Type = 002 Mode = 005 Flag = 128

BarCode = KUNAUNR  Type = 017 Mode = 002 Flag = 000
BarCode = KUNAUPS  Type = 017 Mode = 002 Flag = 000
BarCode = MBBARC   Type = 017 Mode = 002 Flag = 000
BarCode = MBBARC1  Type = 008 Mode = 000 Flag = 000
BarCode = RSNUM    Type = 017 Mode = 002 Flag = 000
BarCode = RSPOS    Type = 017 Mode = 002 Flag = 000
BarCode = RUECKNR  Type = 017 Mode = 002 Flag = 000
```

Figure 9. Sample barcode.tab configuration file

defcp.tab configuration file

Figure 10 on page 132 shows the default conversion table for the conversion of ASCII characters into EBCDIC. The **sap2afp** transform uses this table for ABAP data conversion.

The left column consists of the ASCII code, while the right column contains the corresponding EBCDIC value. The values are checked for a decimal numeric value between 0 and 255.

```
// Linedata CodePage
//--------------------------------------------------
// This file is used internally by sap2afp, as well as
// to convert ABAP data to linedata.

// Format : Ascii=Ebcdic

// T1000819 + box characters -> T1DABASE

000 = 064
001 = 064
002 = 064
:
253 = 064
254 = 062
255 = 223
```

Figure 10. Sample defcp.tab configuration file

defcp.tab.unicode configuration file

This file is used for processing ABAP files in a Unicode environment. Its structure is the same as the `defcp.tab` file with the addition of the Unicode conversion directives.

defcp.tab.japan configuration file

This file is used for processing ASCII-encoded ABAP files containing Japanese characters in a non-Unicode environment. The structure of the file is the same as the `defcp.tab` file with the addition of some conversion directives.

defcp.tab.korea configuration file

This file is used for processing ASCII-encoded ABAP files containing Korean characters in a non-Unicode environment. The structure of the file is the same as the `defcp.tab` file with the addition of some conversion directives.

defcp.tab.spchinese configuration file

This file is used for processing ASCII-encoded ABAP files containing Simplified Chinese characters in a non-Unicode environment. The structure of the file is the same as the `defcp.tab` file with the addition of some conversion directives.

defcp.tab.tdchinese configuration file

This file is used for processing ASCII-encoded ABAP files containing Traditional Chinese characters in a non-Unicode environment. The structure of the file is the same as the `defcp.tab` file with the addition of some conversion directives.

defcp.tab.cyr configuration file

This file is used for processing ASCII-encoded ABAP files containing Cyrillic characters in a non-Unicode environment. The structure of the file is the same as the `defcp.tab` file with the addition of some conversion directives.

fonts.tab configuration file

This table maps the fonts used in the OTF data stream to AFP fonts in a non-Unicode environment.

The following font families are predefined:

FONTFAMILY
Font

COURIER
Courier

HELVE
Helvetica

LETGOTH
Letter Gothic

LNPRINT
Line Print

TIMES
Times New Roman

OCRA Optical Character Recognition A

OCRB Optical Character Recognition B

JPMINCHO
Heisei Mincho

DBMINCHO
Heisei Mincho

DBGOTHIC
Heisei Gothic

Note: JPMINCHO and **DBMINCHO** are different names for the same font.

A font named **BARCODE** must be defined for the **HRI** character of a bar code.

These parameters in the **fonts.tab** configuration file set the format of the fonts you use to print:

DefCodePage
Specifies the default SBCS code page used if no **FC** OTF command is given or if the requested font is not found in the **fonts.tab** table.

DefCharSet
Specifies the default SBCS character set used if no **FC** OTF command is given or if the requested font is not found in the **fonts.tab** table.

DBDefCodePage
Specifies the default DBCS code page used if no **FC** OTF command is given or if the requested font is not found in the **fonts.tab** table.

DBDefCharSet
Specifies the default DBCS character set used if no **FC** OTF command is given or if the requested font is not found in the **fonts.tab** table.

SBDefCodePage
Specifies the default SBCS code page used for half-width characters in DBCS fonts if no **FC** OTF command is given or if the requested font is not found in the **fonts.tab** table.

SBDefCharSet
Specifies the default SBCS character set used for half-width characters in DBCS fonts if no **FC** OTF command is given or if the requested font is not found in the **fonts.tab** table.

Font Describes the font family (**FONTFAMILY** parameter of the **FC** OTF command). The maximum size is 8 bytes and content is not verified.

Size Specifies the font size in 1/10 of a point (**FONT SIZE** parameter of the **FC** OTF command). The value must be numeric and is not verified.

Type Defines the font type (**BOLD** and **ITALIC** parameter of the **FC** OTF command). **Type=0** is normal, **Type=1** is italic, **Type=2** is bold, and **Type=3** is italic bold. Any other value is not valid.

CodePage
Specifies the code page and requires a valid AFP code page name (8 bytes). The value is not verified. An incorrect name can result in an error message.

CharSet
Specifies the AFP font character set. The content is not verified.

CodedFont
Specifies the AFP coded font. The content is not verified.

DB Specifies whether the font is an SBCS font (**DB=0**) or a DBCS font (**DB=1**).

SBCodePage
Specifies the single-byte code page used for half-width characters in DBCS fonts. The value is not verified. An incorrect name can result in an error message.

SBCharSet
Specifies the AFP single-byte font character set used for half-width characters in DBCS fonts. The content is not verified.

SBCodedFont
Specifies the AFP single-byte coded font used for half-width characters in DBCS fonts. The content is not verified.

If an SBCS font that matches the **Font**, **Size** and **Type** values is not found, the code page and font character set from the **DefCodePage** and **DefCharSet** keywords are used and a warning message is displayed. If a DBCS font that matches the **Font**, **Size** and **Type** values is not found, the code pages and font character sets from the **DBDefCodePage**, **SBDefCodePage**, **DBDefCharSet**, and **SBDefCharSet** keywords are used and a warning message is displayed.

ISO 8859-1 (Latin-1) is the default code page that maps to the **1148** code page in the **fonts.tab** configuration table. This ISO code page maps to the German **T1V10273** code page and must be modified for non-Latin-1 installations. You can make this change on the *xxxxyyyy***.tab** configuration file that is used to convert data from ASCII data to EBCDIC data so that these characters are mapped correctly.

Use the font Letter Gothic Latin1 of the coordinated font family for ABAP listings. If you do not want to install the coordinated font family and plan to use the traditional Gothic text fonts found in the IBM Compatibility Fonts, you can adjust the font names in the **pagedef.tab** configuration file.

If you wish to use fonts that are not supported, take these steps:

1. Obtain the font as Adobe Type 1.

2. Convert the font into a raster using the Type Transformer that can be downloaded from the IBM Web site for no-charge, unsupported use at http://www-01.ibm.com/support/docview.wss?uid=psd1P4000840.
3. Contact your InfoPrint representative for further details.

Figure 11 and Figure 12 show examples of sections of the **fonts.tab** configuration file.

```
// Fonts table
// Format : Font=COURIER Size=070 Type=0 CodePage=T1V10273 CharSet=C0420070 DB=0
//          or
//          Font=COURIER Size=090 Type=0 CodedFont=X0GT2A DB=0
//          or
//          Font=JPMINCHO Size=060 Type=0 CodePage=T10300 CharSet=CZJHMN DB=1 SBCodePage=T1H01027 SBCharSet=CZJHMN
//          or
//          Font=JPMINCHO Size=060 Type=0 CodedFont=XZJHMN DB=1 SBCodedFont=XZN16J
DefCodePage = T1V10273
DefCharSet  = C0420000
DBDefCodePage = T10300
DBDefCharSet  = CZJHMN
SBDefCodePage = T1H01027
SBDefCharSet  = CZJHMN

// Courier
Font=COURIER  Size=070 Type=0 CodePage=T1V10273 CharSet=C0420070 DB=0
Font=COURIER  Size=070 Type=1 CodePage=T1V10273 CharSet=C0430070 DB=0
Font=COURIER  Size=070 Type=2 CodePage=T1V10273 CharSet=C0440070 DB=0
Font=COURIER  Size=070 Type=3 CodePage=T1V10273 CharSet=C0450070 DB=0
Font=COURIER  Size=080 Type=0 CodePage=T1V10273 CharSet=C0420080 DB=0
Font=COURIER  Size=080 Type=1 CodePage=T1V10273 CharSet=C0430080 DB=0
Font=COURIER  Size=080 Type=2 CodePage=T1V10273 CharSet=C0440080 DB=0
Font=COURIER  Size=080 Type=3 CodePage=T1V10273 CharSet=C0450080 DB=0
Font=COURIER  Size=100 Type=0 CodePage=T1V10273 CharSet=C0420000 DB=0
Font=COURIER  Size=100 Type=1 CodePage=T1V10273 CharSet=C0430000 DB=0
Font=COURIER  Size=100 Type=2 CodePage=T1V10273 CharSet=C0440000 DB=0
Font=COURIER  Size=100 Type=3 CodePage=T1V10273 CharSet=C0450000 DB=0
Font=COURIER  Size=120 Type=0 CodePage=T1V10273 CharSet=C04200B0 DB=0
Font=COURIER  Size=120 Type=1 CodePage=T1V10273 CharSet=C04300B0 DB=0
Font=COURIER  Size=120 Type=2 CodePage=T1V10273 CharSet=C04400B0 DB=0
Font=COURIER  Size=120 Type=3 CodePage=T1V10273 CharSet=C04500B0 DB=0
Font=COURIER  Size=140 Type=0 CodePage=T1V10273 CharSet=C04200D0 DB=0
Font=COURIER  Size=140 Type=1 CodePage=T1V10273 CharSet=C04300D0 DB=0
Font=COURIER  Size=140 Type=2 CodePage=T1V10273 CharSet=C04400D0 DB=0
Font=COURIER  Size=140 Type=3 CodePage=T1V10273 CharSet=C04500D0 DB=0
Font=COURIER  Size=200 Type=0 CodePage=T1V10273 CharSet=C04200J0 DB=0
Font=COURIER  Size=200 Type=1 CodePage=T1V10273 CharSet=C04300J0 DB=0
Font=COURIER  Size=200 Type=2 CodePage=T1V10273 CharSet=C04400J0 DB=0
Font=COURIER  Size=200 Type=3 CodePage=T1V10273 CharSet=C04500J0 DB=0
```

Figure 11. Header and Courier portions of a sample fonts.tab configuration file

```
// Japanese Gothic
Font=DBGOTHIC  Size=060 Type=0 CodePage=T10300 CharSet=CZJHKG DB=1 SBCodePage=T1H01027 SBCharSet=CZJHKG
Font=DBGOTHIC  Size=080 Type=0 CodePage=T10300 CharSet=CZJHKG DB=1 SBCodePage=T1H01027 SBCharSet=CZJHKG
Font=DBGOTHIC  Size=100 Type=0 CodePage=T10300 CharSet=CZJHKG DB=1 SBCodePage=T1H01027 SBCharSet=CZJHKG
Font=DBGOTHIC  Size=100 Type=1 CodePage=T10300 CharSet=CZJHKG DB=1 SBCodePage=T1H01027 SBCharSet=CZJHKG
Font=DBGOTHIC  Size=120 Type=0 CodePage=T10300 CharSet=CZJHKG DB=1 SBCodePage=T1H01027 SBCharSet=CZJHKG
Font=DBGOTHIC  Size=140 Type=0 CodePage=T10300 CharSet=CZJHKG DB=1 SBCodePage=T1H01027 SBCharSet=CZJHKG
Font=DBGOTHIC  Size=160 Type=0 CodePage=T10300 CharSet=CZJHKG DB=1 SBCodePage=T1H01027 SBCharSet=CZJHKG
Font=DBGOTHIC  Size=180 Type=0 CodePage=T10300 CharSet=CZJHKG DB=1 SBCodePage=T1H01027 SBCharSet=CZJHKG
```

Figure 12. Heisei Gothic portion of a sample fonts.tab configuration file

fonts.tab.unicode configuration file

The `fonts.tab.unicode` file is used for processing **OTF** files in a Unicode environment. The structure of the file is the same as the `fonts.tab` file.

image.tab configuration file

This table defines values used to print image data. It contains these parameters:

DEFRES
Specifies the default resolution used for printing image data if you do not specify a value for the **-r** flag of the **sap2afp** command. Valid values are **240**, **300**, **360**, **480**, **600**, and **720**.

Width Specifies the width of the dither matrix.

Height
Specifies the height of the dither matrix.

Cell Specifies the values for the dither matrix.

Transform
Specifies 256 grayscale correction values.

Figure 13 shows an example of the **image.tab** configuration file.

```
// image.tab
// from image.tab.85lr
//
// This file is used to determine the dither matrix and the
// grayscale correction values.

// Define the default output resolution
DEFRES = 600

// Define the dither matrix
Width = 78
Height = 78
Cell =
 15  63 184 219 249 240 158 109  98  54  82 118 133 113  75  64
 87 104 166 215 234 229 179  62  38   4  15  59 186 220 246 240
166 123  87  61  65 108 133 118  78  64 100 105 167 219 234 230
:
 28  73 193 223 253 247 199  76  31   8  20  93 148 156 203 178
136 126 144 186 201 155 151  90  43  24  28  75 199 222 254 251
196  79  31   7

//
// Grayscale correction values
//

Transform =
0
1
2
:
248
252
255
```

Figure 13. Sample image.tab configuration file

pagedef.tab configuration file

The pagedef table provides the **PAGEDEF** and **FORMDEF** values used from the value of the ***PJPAPER** parameter that is passed to the **sap2afp** transform with any access method that can submit SAPGOF to **sap2afp**, including the **E** or **L** access method. It also provides the fonts used for ABAP data.

The name of a **PAGEDEF** for line data is restricted to five digits instead of the usual six characters. The reason for this restriction is that the **PJPAPER** field is twelve bytes long and **must** begin with a **Z**. This restriction applies to ABAP reports (line data) with user-specific formatting only.

Paper Specifies the value of the OTF print option parameter **PJPAPER**. The value is not verified.

FormDef
Specifies the name of the form definition to be used for printing both OTF and ABAP reports. This value is not verified. An error results if the form definition is not found on the print server system.

PageDef
Specifies the name of the page definition to be used for printing ABAP reports. This value is not verified. An error results if the page definition is not found on the print server system.

FontNorm
Specifies the normal coded font used for line data printing. The value is not verified.

FontBold
Specifies the bold coded font used for line data printing. The value is not verified.

Figure 14 shows a sample **pagedef.tab** configuration file:

```
// PageDef table
// Format : Paper=X_65_132 FormDef=F1A10111 PageDef=P1H01SP1
// FontNorm = 50D0 FontBold = 50F0

// Notes:
// ======
// 1) The pagedefs apply to letter size paper.
//    A4 paper size might require modifying the PageDef field.
// 2) Z_INCH12 is a sample for a user specification
Paper=X_65_132 FormDef=F1A10111 PageDef=P1V06683 FontNorm = GB2A FontBold = GB2A
Paper=X_44_120 FormDef=F1A10111 PageDef=P1V06683 FontNorm = GB2A FontBold = GB2A
Paper=X_58_170 FormDef=F1A10111 PageDef=P1V06683 FontNorm = GT8A FontBold = GT8A
Paper=X_65_255 FormDef=F1A10111 PageDef=P1V06683 FontNorm = GT24 FontBold = GT24
Paper=X_65_80  FormDef=F1A10111 PageDef=P1C09182 FontNorm = GT2A FontBold = GB2A
Paper=X_90_120 FormDef=F1A10111 PageDef=P1C09182 FontNorm = GT5A FontBold = GT5A
Paper=X_PAPER  FormDef=F1A10111 PageDef=P1C09182 FontNorm = GT2A FontBold = GB2A
// Sample of an added user-defined pagedef entry:
// Paper=Z_INCH12 FormDef=F1SAPFD  PageDef=P1SAPPD  FontNorm = GT2A FontBold = GB2A
```

Figure 14. Sample pagedef.tab configuration file

pagedef.tab.unicode configuration file

The `pagedef.tab.unicode` file is used for processing the **ABAP** files in Unicode environment. The structure is the same as the `pagedef.tab` file.

The two new page definitions mapping the Courier Unicode font are used by default. If you need to process **ABAP** files containing CJK characters, specify the names of the corresponding pagedefs for Japanese, Simplified Chinese, Traditional Chinese, or Korean in the `pagedef.tab.unicode` configuration file.

If you have your own custom page definitions that you want to use for Unicode processing, modify your sources to include mappings and associations for the needed Unicode fonts and recompile them. Specify the name of the custom page definition either in the `pagedef.tab.unicode` configuration file or with the `-pagedef` parameter to **sap2afp**.

pagedef.tab.japan configuration file

This file is used for processing ASCII-encoded ABAP files containing Japanese characters in a non-Unicode environment. The file structure is the same as the `pagedef.tab` file.

pagedef.tab.korea configuration file

This file is used for processing ASCII-encoded ABAP files containing Korean characters in a non-Unicode environment. The file structure is the same as the `pagedef.tab` file.

pagedef.tab.spchinese configuration file

This file is used for processing ASCII-encoded ABAP files containing Simplified Chinese characters in a non-Unicode environment. The file structure is the same as the `pagedef.tab` file.

pagedef.tab.tdchinese configuration file

This file is used for processing ASCII-encoded ABAP files containing Traditional Chinese characters in a non-Unicode environment. The file structure is the same as the `pagedef.tab` file.

pagedef.tab.cyr configuration file

This file is used for processing ASCII-encoded ABAP files containing Cyrillic characters in a non-Unicode environment. The file structure is the same as the `pagedef.tab` file.

userenv configuration file

The `userenv` configuration file is used to specify the environment for the ASCII-encoded **ABAP** files. The configuration file may contain the following values:

NORMAL - specifies European non-Unicode environment. The `defcp.tab` and `pagedef.tab` files are used.

JAPANESE - specifies Japanese non-Unicode environment. The `defcp.tab.japan` and `pagedef.tab.japan` files are used.

KOREAN - specifies Korean non-Unicode environment. The `defcp.tab.korea` and `pagedef.tab.korea` files are used.

SPCHINESE - specifies Simplified Chinese non-Unicode environment. The `defcp.tab.spchinese` and `pagedef.tab.spchinese` files are used.

TDCHINESE - specifies Traditional Chinese non-Unicode environment. The `defcp.tab.tdchinese` and `pagedef.tab.tdchinese` files are used.

CYRILLIC - specifies Cyrillic non-Unicode environment. The `defcp.tab.cyr` and `pagedef.tab.cyr` files are used.

UNICODE - specifies Unicode environment. The `defcp.tab.unicode` and `pagedef.tab.unicode` files are used

xxxxyyyy.tab configuration file

These tables are used for the mapping of characters of an individual SAP ASCII code page into an EBCDIC codepage. SAP uses two kinds of code pages: input code pages and output code pages.

SAP provides the the code page configuration files listed in Table 5.

Table 5. SAP code page configuration files

File Name	*Input Code Page*	*Description*	*Output Code Page*	*Description*
00000000.tab	T1000819	Latin-1 ISO ANSI 8-bit	T1V10273	Germany F.R./Austria-CECP
11000000.tab	T1000819	Latin-1 ISO ANSI 8-bit	T1V10273	Germany F.R./Austria-CECP
40010000.tab	T1000876 [1]	OCR-A ASCII	T1000892	OCR-A
40040000.tab	T1000877 [1]	OCR-B ASCII	T1000893	OCR-B
80000000.tab	IBM-943C	Japanese	IBM-1399-SAP2AFP	Japanese

1. Both the OCR-A and the OCR-B code pages are equivalent to ISO-8859/1 with the special characters **hook**, **fork**, and **chair**.

The file names correspond to the 4-digit value of the **INPUTCODEPAGE** plus the 4-digit value **OUTPUTCODEPAGE** parameter of the **CP** OTF command.

```
// Codepage table

// Inp CodePage 0000
// Out CodePage 0000

// Format : Ascii=Ebcdic

000 = 000
001 = 001
002 = 002
003 = 003
:
253 = 064
254 = 062
255 = 223
```

Figure 15. Sample xxxxyyyy.tab configuration file (single-byte code pages)

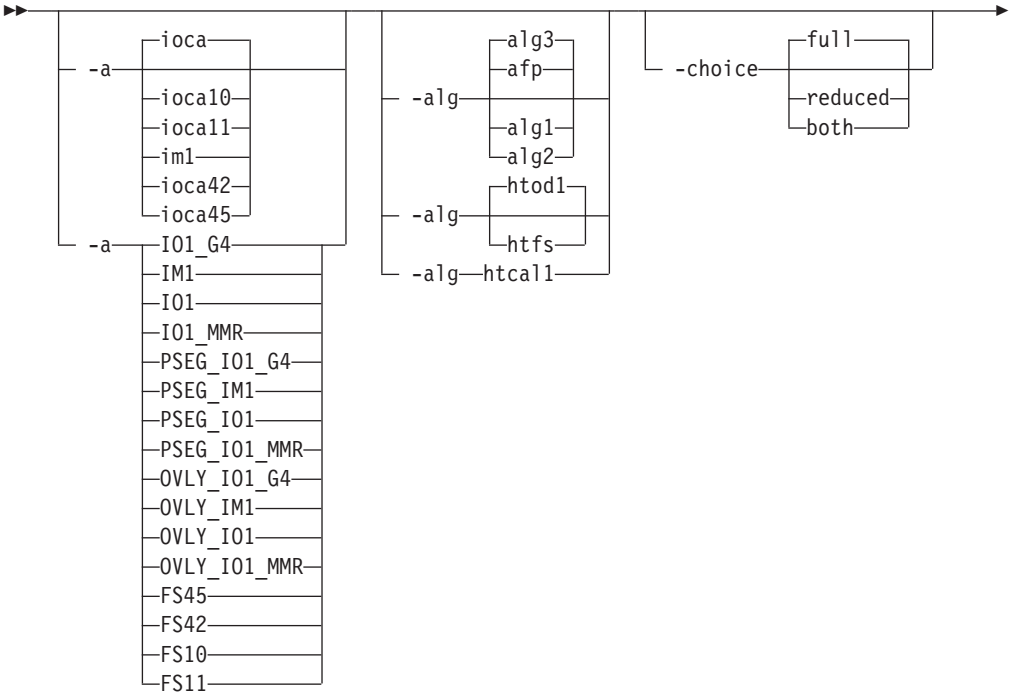
```
// Japanese
// SAP2AFP is configured to use IBM-943C-SAP2AFP as the uconv
// "From" value.
// This table sets the "To" value to IBM-1399-SAP2AFP.
//

CONVERT FOR=8000
CONVERT TO=IBM-1399-SAP2AFP
```

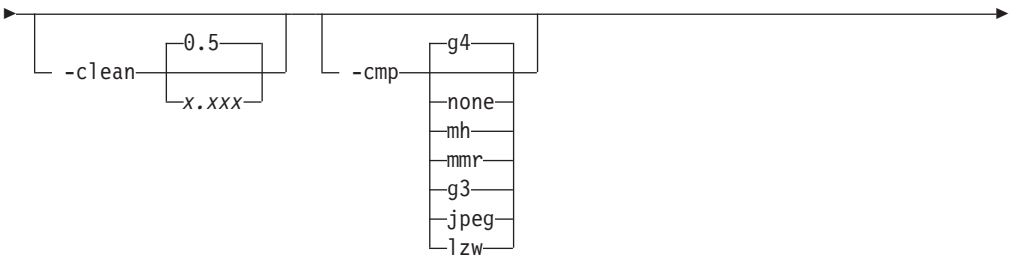
Figure 16. Sample xxxxyyyy.tab configuration file (Double-Byte Code Pages)

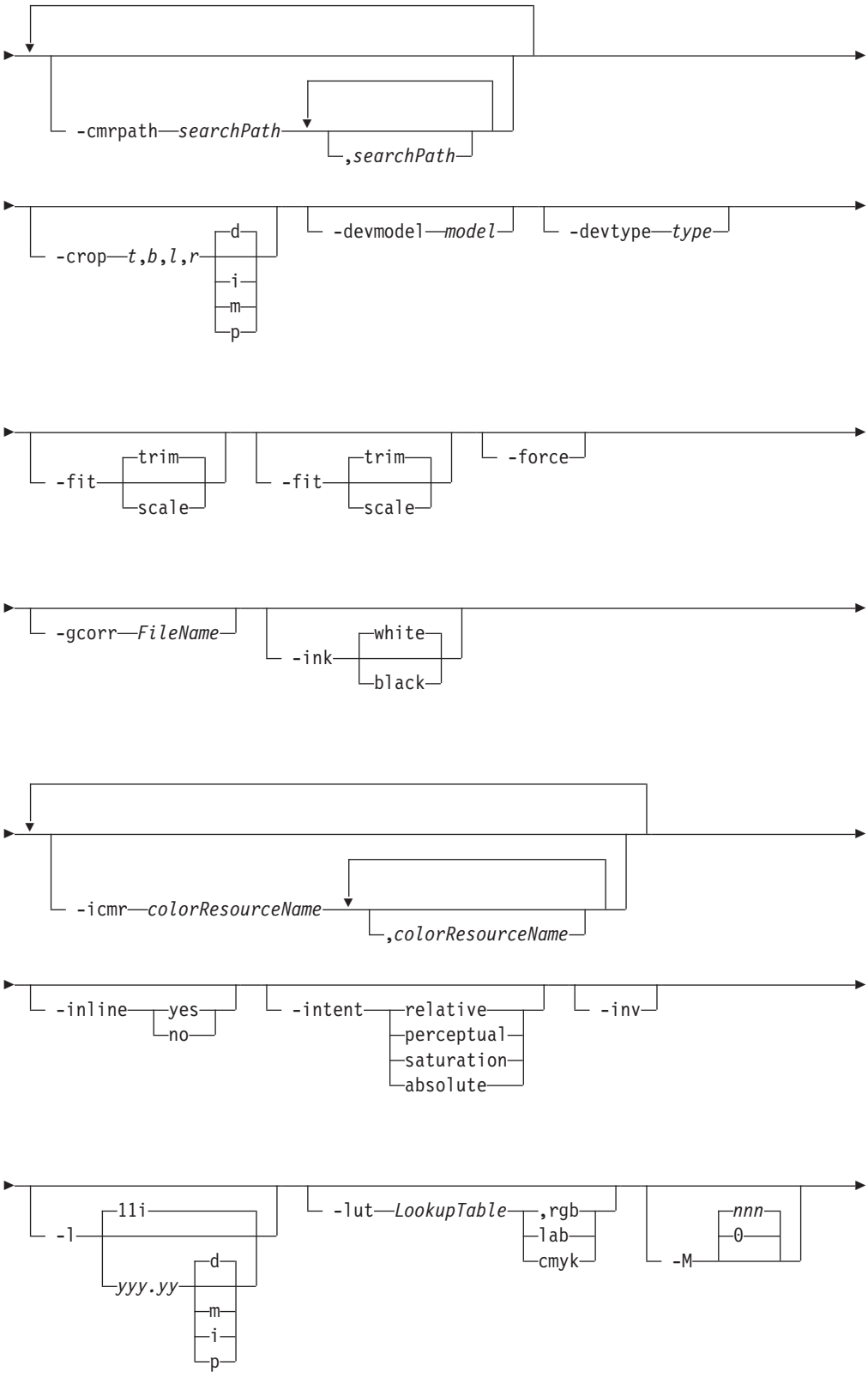
Transform TIFF data to AFP

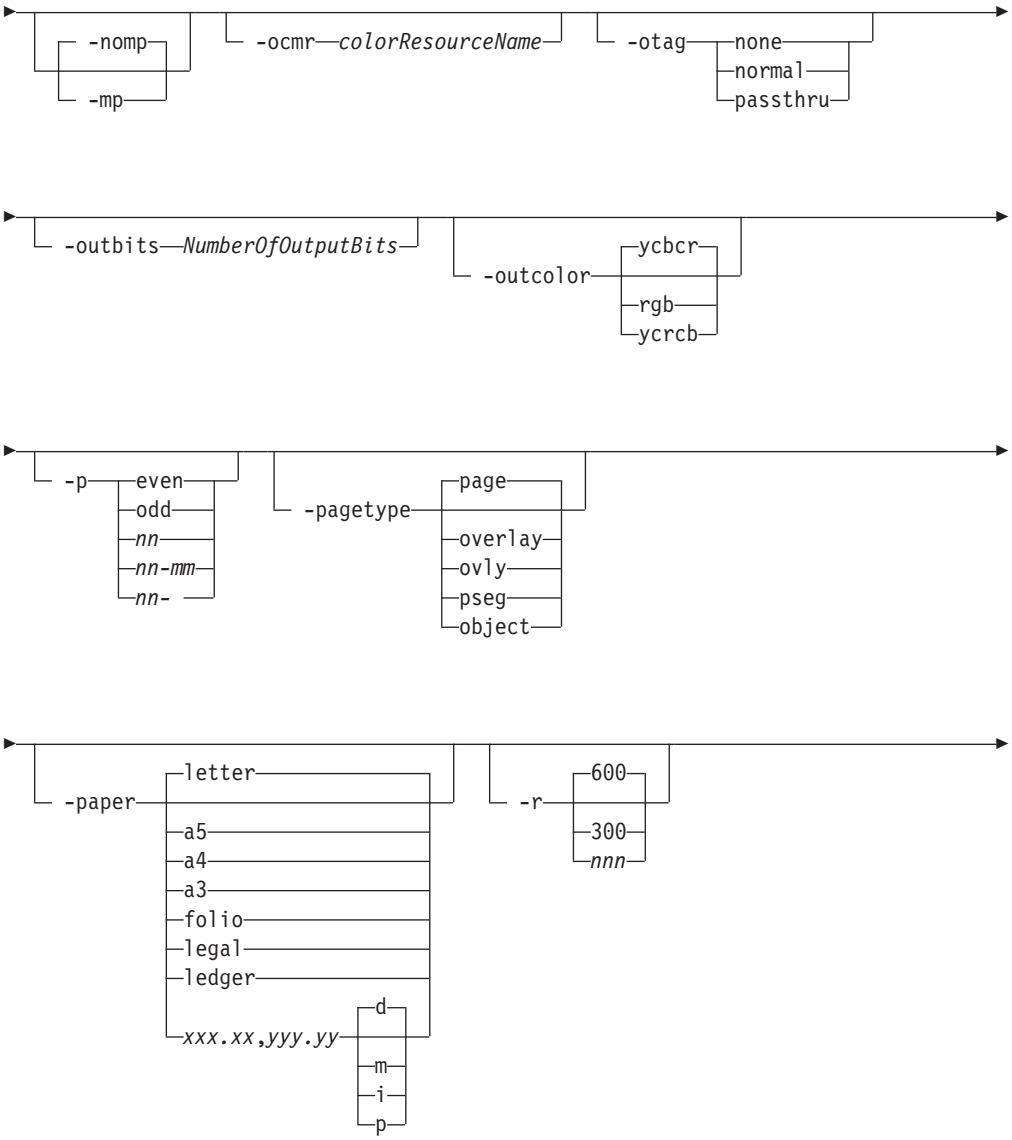
This section describes the **TIFF to AFP** transform and includes its syntax, options, and values.

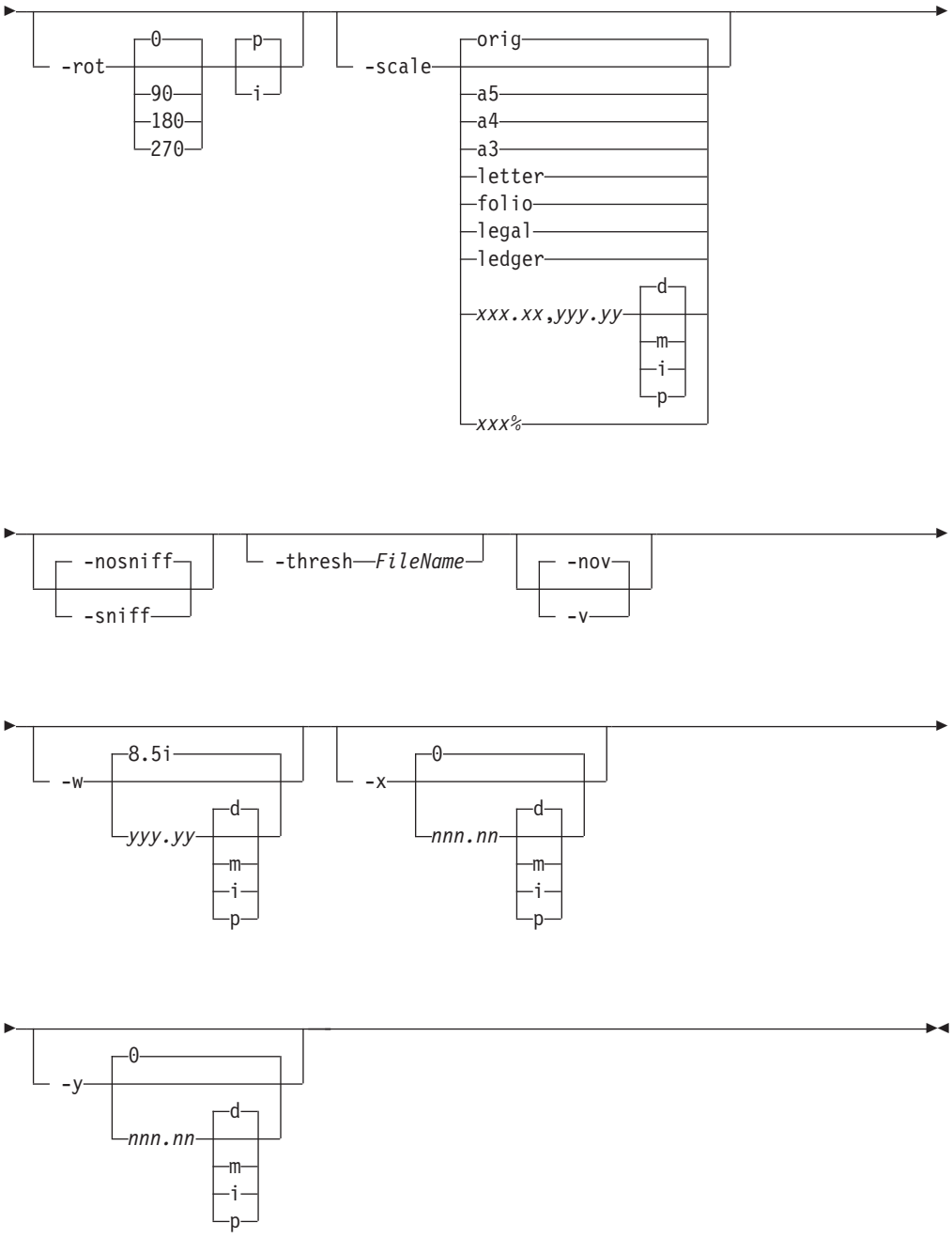
Syntax






-cmrpath searchPath
,searchPath
-crop t,b,l,r
d
i
m
p
-devmodel model
-devtype type
-fit
trim
scale
-fit
trim
scale
-force
-gcorr FileName
-ink
white
black
-icmr colorResourceName
,colorResourceName
-inline
yes
no
-intent
relative
perceptual
saturation
absolute
-inv
-l
11i
yyy.yy
d
m
i
p
-lut LookupTable
,rgb
lab
cmyk
-M
nnn
0


-nomp
-mp
-ocmr colorResourceName
-otag none normal passthru
-outbits NumberOfOutputBits
-outcolor ycbcr rgb ycrcb
-p even odd nn nn-mm nn-
-pagetype page overlay ovly pseg object
-paper letter a5 a4 a3 folio legal ledger xxx.xx,yyy.yy d m i p
-r 600 300 nnn



Description

Use the **TIFF to AFP** transform to transform a TIFF (Tag Image Format File) data stream into an AFP (MO:DCA-P) data stream.

The transform can process extended TIFF Revision 6.0 images, including bi-level, gray scale, and color images. The output can be bi-level (IM1 or IOCA FS10), 4-bit or 8-bit gray scale, or 24-bit YCbCr color (IOCA FS11), bi-level or 4-bit banded CMYK image at 1-bit per band (IOCA FS42), or a superset of FS42 that also

contains 32–bit banded CMYK images, compressed with either JPEG or LZW algorithms (IOCA FS45). The transform automatically uses halftoning to convert the gray scale and color images to bi-level.

Data transformations

If the input image is gray scale or color, and the output image type is bi-level (for example, IOCA FS10, or IM1), the transform internally scales the image to the desired size. The transform then uses a halftoning algorithm (ordered dither, the default, or Floyd-Steinberg) to convert it to bi-level. In converting the image to bi-level, the characteristics of the output device, such as dot shape and dot gain, must be taken into consideration. The halftone screen and the calibration are extremely printer-dependent. While the transform does contain an internal default (85 LPI screen at 45 degrees), an appropriate screen should be used and the halftone should be calibrated properly for best quality.

Some printers, such as the InfoPrint 4000, have two engines, one for each side of the sheet. Each engine commonly has a different calibration. Options **-thresh** and **-gcorr** provide the mechanism to specify halftone screen, grayscale correction curves, and rules for switching calibration based on the engine used to print a particular page. For very light or very dark images, the halftoning algorithms can be automatically recalibrated to preserve detail that would be lost using the default calibration. See option **-alg**.

To maintain the image quality, scaling must be done before halftoning. The halftoning algorithm is very compute-intensive. Unless the images are small, **TIFF to AFP** might not be able to process the color images fast enough to feed even a slow printer.

To achieve good image quality for the CMYK output, the input image colors must be converted to CMYK, bearing in mind the characteristics of the particular halftones used to generate the output image. The color conversion is done using a multidimensional lookup table, which is specified with the **-lut** option. If the transform cannot determine the appropriate lookup table or the lookup table is missing, a simple conversion of RBG to CMY is done using the 255-algorithm. This conversion does not use black and generally leads to poor color quality.

The size and the position of the output image on the page depends on several factors. In addition to the size specified to the transform, the result depends on the form map specified at print time and also on the form and options loaded in the printer. If the image is too large to fit on the page, it is trimmed to size by default. Use the **-fit** option to tell the printer to scale the image to paper size. If the paper size has not been specified explicitly with the **–paper** option, the paper defaults to US letter (8.5 by 11 inches). If the image is larger than this, the paper dimensions are increased as necessary. If the paper size has been specified explicitly, it is not increased if the image will not fit on paper. Options **-l** and **-w** have the same effect as **-paper**.

The size of the actual image, as opposed to the paper size, is controlled by the **-scale** option. The **-scale** option can either specify ″**orig**″, or give an actual size. If **orig** has been specified, the output image has the same size as the input image. If **-scale** with an actual size has been specified, the output image is scaled to the desired size. A percentage enlargement/reduction can also be specified.

Even if **-scale orig** has been specified, the image may still need to be scaled if the input resolution is different from the output resolution. By default, the transform

leaves scaling to the printer. The exceptions are images that are being halftoned, which are always scaled in the transform, and images that have different resolutions on the X and Y directions. The **-alg** option can be used to instruct the transform to do internal image scaling. Options **-alg**, **-clean**, and **-ink** choose and configure various scaling algorithms used by the transform.

If possible when the input image data matches the output image segments, **TIFF to AFP** just rewraps the TIFF raster data in MODCA-P headers.

The TIFF images are often divided into many segments for efficient memory handling. Some printers will terminate the printing in error if the page is too complex. For that reason, **TIFF to AFP** decompresses, repartitions, and compresses the data if it determines there are too many segments in the picture.

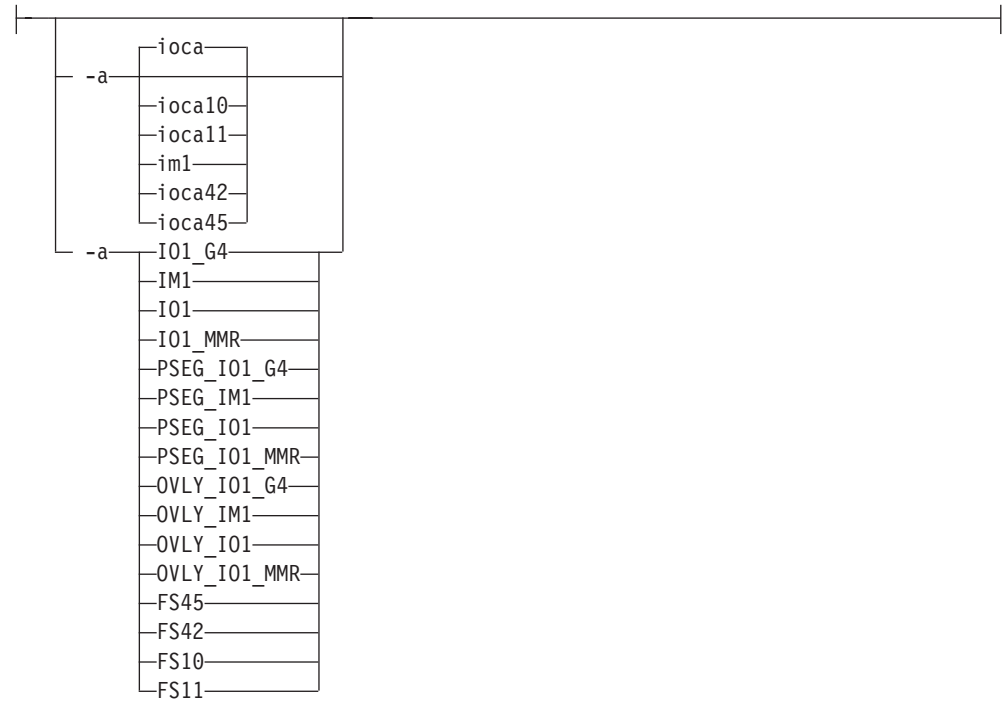
Limitations

- Only Huffman coding with baseline DCT JPEG algorithm is supported.
- Old style JPEG specification (Photometric Interpretation 6) is not supported. Photometric Interpretation 6 is obsolete and will be removed from the TIFF specification. Use the Photometric Interpretation 7 to incorporate the JPEG compressed images in TIFF files.
- Additional color information, such as alpha data, is disregarded.
- Transparency maps are ignored.
- 8-bit gray scale and 24-bit color are supported.

Acknowledgments

This software is based in part on the work of the Independent JPEG Group.

Options and values



- Choice of the output image type. The first syntax chooses between the IOCA FS 10 (**ioca**, **ioca10**), IOCA FS11 (**ioca11**), IM1, IOCA FS42 (**ioca42**), and IOCA

FS45 (**ioca45**) output. IOCA FS10 and IM1 yield bi-level images, while IOCA FS11 results in 4-bit or 8-bit gray or 24-bit color output (see option **-outbits**). Currently, the only product that supports IOCA FS11 is AFP Workbench. IOCA FS42 can contain either bi-level or 4-bit banded CMYK image at 1-bit per band. IOCA FS45 is a superset of FS42 that also contains 32-bit banded CMYK images, compressed with either JPEG or LZW algorithms. The output compression algorithm is set with the **-cmp** option. To set the page type (page, overlay, page segment, or object), use the **-pagetype** option. FS45 produces IOCA FS45 output.

- The second syntax is to maintain compatibility with the **PostScript to AFP** transform, and sets the image type (**IO1** for IOCA FS10 or **IM1** for IM1 output), compression (**G4** for Group 4 or **MMR** for Group 3), and page type (**PSEG** for page segment or **OVLY** for overlay). If you do not specify **PSEG** or **OVLY**, the output is a printable page. If you do not specify a compression algorithm, the output is not compressed. You cannot use the second syntax for IOCA FS11 output.
- Some older printers do not support IOCA images. In such cases, you should choose the IM1 output type. IM1 images are uncompressed, and thus, use more space. The processing might also take longer since the IM1 image cannot be scaled by the printer, so internal scaling algorithms must be used. See option **-alg**.
- The default is **ioca** for IOCA FS10 output compressed using Group 4 algorithm.

- Choice of the scaling and halftoning algorithms. You can specify multiple choices, separated by commas, for one **-alg** option. The effect is the same as specifying multiple **-alg** options. For example, `-alg htfs,htcal` is equivalent to `-alg htfs -alg htcal`.
- The scaling algorithms are:
  - If **afp** is chosen, the scaling is done using the default algorithm in the printer. This makes the transform run much faster. If the image must be reduced, however, this algorithm might drop some information from the image, such as thin lines.
  - **alg1** activates the internal scaling algorithm to scale the image explicitly to the specified size. This algorithm is guaranteed not to discard any ink. “White space” in the image, however, might be lost (that is, features close to one another might merge). This algorithm makes the transform run longer, and might occasionally make for a “dirty” image, since the occasional “noise pixels” in the scanned images tend to be amplified.
  - **alg2** activates the more flexible version of **alg1**. If this algorithm is selected, option **-clean** can be used to specify the amount of ink “cleanup” to be done. Option **-clean 0.0** makes the algorithm **alg2** perform like **alg1** (although more slowly). Increasing the value specified in **-clean** discards more and more ink, until **-clean 1.0** results in a blank page.

  - **alg3** activates a scaling algorithm that works by deleting or duplicating rows and columns in the image. This is a fast general-purpose algorithm.
- For bi-level images, the default is **afp** if the output image type is IOCA and **alg3** if the output image type is IM1. For color images with bi-level output, the scaling is always done before the halftoning algorithm. If a grayscale or color output is chosen (**-a ioca11**), this option is ignored and the algorithm is set to **afp**.
- The halftoning algorithms are:
  - **htod1** uses an ordered dither with a screen derived from the value of the **-thresh** option. The default is an 85 line per inch screen.
  - **htfs** uses the Floyd-Steinberg algorithm.
  - **htcal1** recalibrates the halftoning algorithm for each image. **htcal1** forces the transform to read the whole image into memory and requires an additional pass through the image. Use it only for very light or very dark images.
- The default is **htod1**. Each halftoning algorithm uses a different internal default calibration curve. If the automatic calibration is turned on, a different set of calibration curves is used.
- See options **-clean**, **-gcorr**, **-ink**, **-paper**, **-scale**, **-thresh**, **-l**, **-w**, **-x**, and **-y**.

- TIFF image files can contain both full and reduced resolution versions of each image. The transform can output both versions, or full resolution only, or reduced resolution only, depending on the value for this option. The default is to output the full resolution images only.
- See the **-mp** and **-nomp** options.

- The internal scaling algorithm **alg2** allows for variable thresholding. The scaled pixel is declared painted if the fraction of its area greater than the threshold is painted in the original image. The value *x.xxx* is a real number between zero and 1 inclusive and gives this threshold.
- If the option **-clean 0.0** is issued, **alg2** behaves like **alg1** and turns on a pixel as long as any part of the pixel has been painted in the original image. **-clean 1.0** results in a blank image because the output pixels are never painted.
- The setting **-clean 0.95** and **0.9999999** turns on the pixels that had essentially all the area painted in the original picture. Depending on the data, most of the image will probably be preserved. Increasing **-clean** by a small amount to **1.0** erases the image. If the scaling algorithm is not **alg2**, this option is ignored. The default is **-clean 0.5**.

- Choice of the output image compression algorithm:

  none Uncompressed output

  mh ITU-T T.4 G3 Modified Huffman

  mmr IBM Modified Modified Read

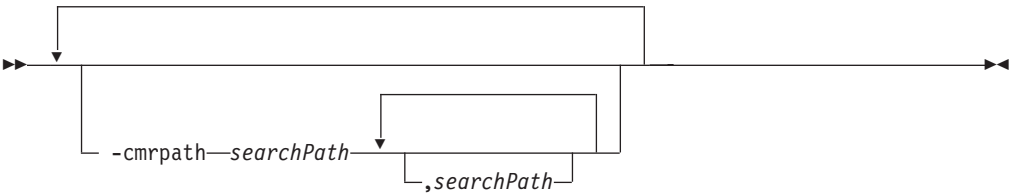
  g3 ITU-T T.4 G3 Modified Read

  g4 ITU-T T.6 G4

  jpeg JPEG non-differential Huffman coding with baseline DCT. The output image data should be compressed to reduce the file sizes and increase the printing speed.

  lzw If **lzw** is specified, linework of 600 dpi is produced; otherwise, lossy JPEG at 300 dpi is produced. **lzw** only applies to FS45.

  The default compression is ITU-T T.6 Group 4 for bi-level images and no compression for gray scale or color images. Some printers might not support Group 4 compression algorithm and require using the **-cmp** option to choose a different one. The JPEG algorithm can compress only 8-bit gray scale and 24-bit color images. 4-bit grayscale images cannot be compressed.

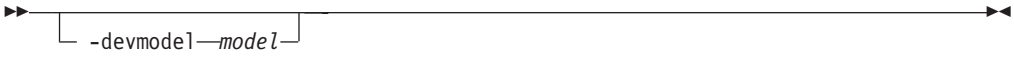


- Specifies the search order for locating color resources. This search order is a series of directory paths that color resources are located in. If you specify two or more **-cmrpath** flags, the Transform Feature will concatenate these search orders.

- Image cropping. *t,b,l,r* specify how much should be cropped from the image top, bottom, left edge, and right edge. The numbers are floating point and can be either positive or negative. Negative numbers indicate that a blank space should be inserted. The units are inches, millimeters, points, and dots (pels). The default is dots. The cropping is specified in the context of the output page, so that “top” means the top of the output page and so on, regardless of the **-rot** option. To

crop, the transform enlarges the image by the amount to be cropped, then crops the specified amount by manipulating the actual bitmap. The resulting image has the size as specified by the explicit (or implicit) **-scale** option. See also option **-j**.

- If **-fit trim** is specified, the right and the bottom edge of the image are not cropped. Instead, the image grows as necessary. Because **-fit trim** causes the output data stream to contain the “position and trim” specification, the printer discards any extra image.

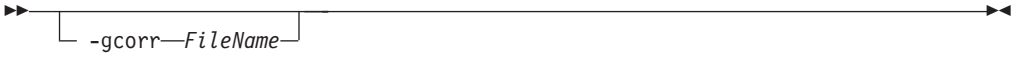


- Specify the device model of the actual device.

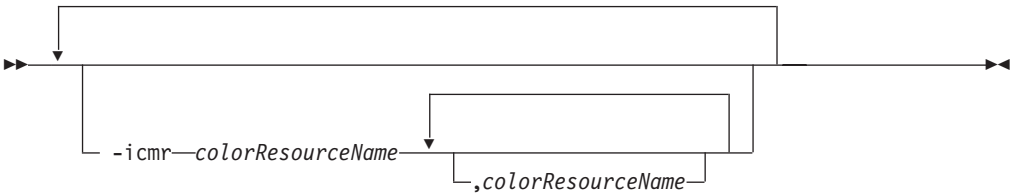
- Specify the device type of the actual device.

Determines whether the printer behavior will be position-and-trim or scale-to-fit if the image is too large to fit on the paper. The default is **trim**.

If present, this option forces **TIFF to AFP** to decompress and recompress the image, regardless of other factors.



- Specifies a *FileName* with a gray scale mapping table for halftoning of the gray scale and color images to bi-level for output. The *FileName* you specify can be a fully qualified filename. If you do not specify a path, the Transform Feature looks in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation.
- The mapping table must be provided to compensate for the printing characteristics of the particular output device and paper type, such as dot gain. This file must contain either:
  - 256 real numbers, one for each level of gray in the 8-bit gray scale image
  - The PostScript **settransfer** operator
- The algorithm converts every image to 8-bit gray scale before applying the halftoning algorithm. The default might not produce the halftone image quality that your printer is capable of. Mapping tables for several different engine types and line screens are supplied with the Transform Feature and are installed in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation. To tune your image quality, select the file that matches your printer model. See also options **-alg** and **-thresh**. PostScript code submitted using the **-thresh** option can have the same effect as **-gcorr**.



- Specifies one or more input or audit color resources. The color resources can be either ICC Profiles or Color Management Resources (CMRs). If you specify two or more **-icmr** flags on a transform command line, InfoPrint will concatenate the resources together. If two or more resources that are specified by the **-icmr** flags are for the same color space, InfoPrint will use the last specified resource.

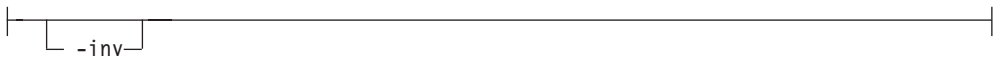
- Specifies whether the output Color Management Resource (CMR) will be placed inline in the data stream. If you specify two or more **-inline** flags on a transform command line, the Transform Feature will use the last specified value.

- You only use this option with scaling algorithm **alg1** or **alg2**. The TIFF images can be either black on white or white on black. The internal scaling algorithm must know which, because “ink” is preserved at the expense of “non-ink”. The default value, “black”, indicates that the image is black on white.
- If you use the **-inv** option to print the reversed image, the inversion is done as the data is read by the transform, before any processing is done. The black or white must thus be specified in the terms of the printed image, not in the terms of the input TIFF image.

- Specifies the rendering intent. You can also use the **-pragma** option to specify the rendering intent by setting:

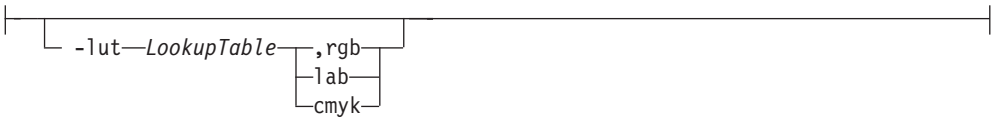
  ```
  -pragma colorRendering=relative
  ```

  If you specify two or more **-intent** flags on a transform command line, the Transform Feature will use the last specified value.



  Reverses the image. Areas that are black in the original image become white and vice versa. The reversed image might be either black on white or white on black, depending on the original image.

Specifies the paper length. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints. The default unit is dots. If the unit is dots, decimals (if any) are ignored. The default paper length is 11 inches. See options **-w** to set the paper width or **-paper** to set both dimensions at the same time.



- Specifies the *FileName* for the color conversion lookup table file. The *FileName* you specify can be a fully qualified filename. If you do not specify a path, the Transform Feature looks in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation.
- Fast and accurate conversion between color spaces can be implemented as a multidimensional lookup with an interpolation algorithm for missing nodes. The file specified with the **-lut** option must contain a valid lookup table for the conversion between the input and output color spaces. The lookup tables currently come in either ASCII (.lut) or binary formats (.lutbin).

  If the optional colorspace tag is not provided, the table is assumed to match the input image. If there is a serious mismatch between the table and the image (for example, the table is RGB to CMYK and the input image is CMYK), the **-lut** is ignored for the image. Otherwise, it is used to convert the colors and any mismatch (for example, using a **lab** table for **rgb** data) results in corrupted output.

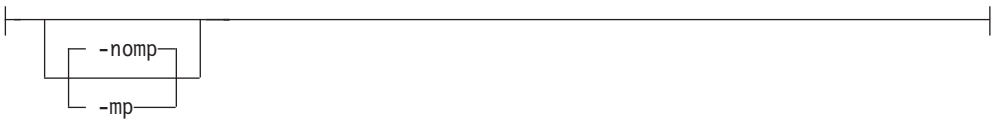
  If the colorspace tag is provided, the transform uses the lookup table only for the relevant colorspace image. Multiple **lut** tables can be specified if you are unsure about the input colorspace. If the **lut** files are binary, parsing extra files does not slow performance much.

  Example:

  ```
  -lut 3170-005.rgb.cmyk.perceptual.lutbin,rgb
  ```

  Where `3170-005` is the model-type; `rgb.cmyk` is for RGB images; and `perceptual` is the **color-rendering-intent** value.

Limits the amount of memory available to **TIFF to AFP**. *nnn* is the maximum amount of memory in kilobytes. A value of **0** means there is no memory limit. *nnn* can be set from **0** to the maximum value that the operating system allows. The default is **0**.



Each TIFF image is supposed to have a marker bit set if there are multiple TIFF images in the file. This marker is sometimes missing, even if there are multiple images present in the file. The **-mp** option instructs the transform to behave as if the multipage marker bit were set. The transform then processes all the images in the file, subject to the **-p** and **-choice** options. The default is to leave the marker bit unset (**-nomp**).

-nomp
See **-mp**.

-nosniff
See **-sniff**.

-nov See **-v**.

- Specifies an output color resource. The color resource can be either an ICC Profile or a Color Management Resource (CMR). If you specify two or more **-ocmr** flags on a transform command line, the Transform Feature will use the last specified value.

- Specifies how the output AFP will be tagged with color information. The allowed values are:

  none There will be no tagging in the output AFP.

  normal
  The Transform Feature will use the specified **-ocmr** value to tag the output AFP as an input (audit) Color Management Resource (CMR).

  passthru
  The Transform Feature will use the specified **-ocmr** value to tag the output AFP as both an input (audit) CMR and an output (instruction) CMR.

  If you specify two or more **-otag** flags on a transform command line, the Transform Feature will use the last specified value.

Sets the number of bits per pel in output. This value must be **1**, **4**, **8**, or **24**. If the output image type is IOCA FS10 or IM1, the number of output bits is set to **1** and this option is ignored. For IOCA FS11 output, the default is **24**. This number represents the maximum number of bits used per pel. Thus, even if the number of bits is set to **24**, a 4-bit gray scale image is still displayed in 4-bit format.

Sets the output color model to RGB, YCbCr, or YCrCb if the image type is IOCA FS11 and the number of output bits is 24. Otherwise, this option is ignored. The default is **ycbcr**.

- Specifies that the output should only contain the specified pages. If no **-p** option is given, all the pages are output (but see the **-choice** option for printing full or reduced resolution images of each page). Multiple **-p** options can be specified. Their effect is cumulative. Regardless of the order in which the pages are specified, they are always printed in ascending order.
- The recognized values are:

  even Print all even pages

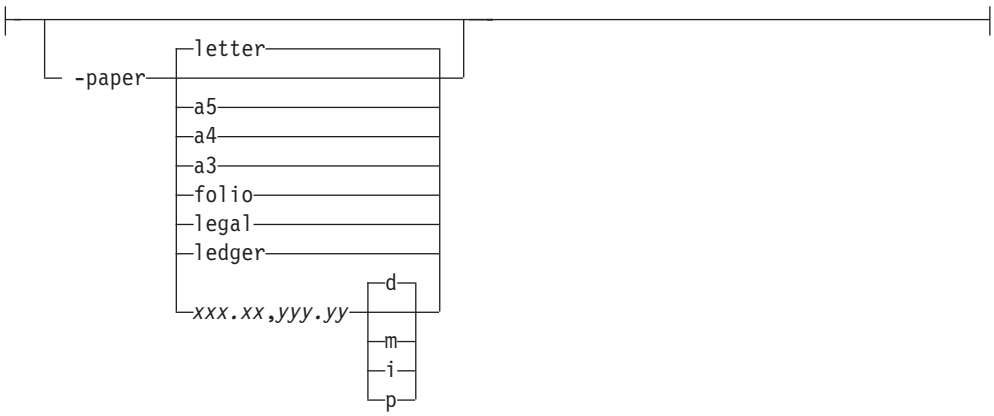
  odd Print all odd pages

  nn Print page *nn*

  nn-mm
  Print pages *nn* to *mm*, inclusive

  nn- Print all pages starting with page *nn*
- Pages are numbered starting with 1.

Sets the output page type to be page, overlay, page segment, or object. The same page type is set for every page in the output. Thus, unless you use the **-p** option to select a single page, multiple page segments or overlays are stored in the output file. The default is **page**. See option **-a**.



- Specifies the output paper size. The supported values are:

  a3 A3 format (297 by 420 mm or 11.69 by 16.54 inches)

  a4 A4 format (210 by 297 mm or 8.27 by 11.69 inches)

  a5 A5 format (148 by 210 mm or 5.83 by 8.27 inches)

  letter 8.5 by 11 inches (216 by 279 mm)

  folio 8.5 by 13.0 inches (216 by 330 mm)

  legal 8.5 by 14.0 inches (216 by 356 mm)

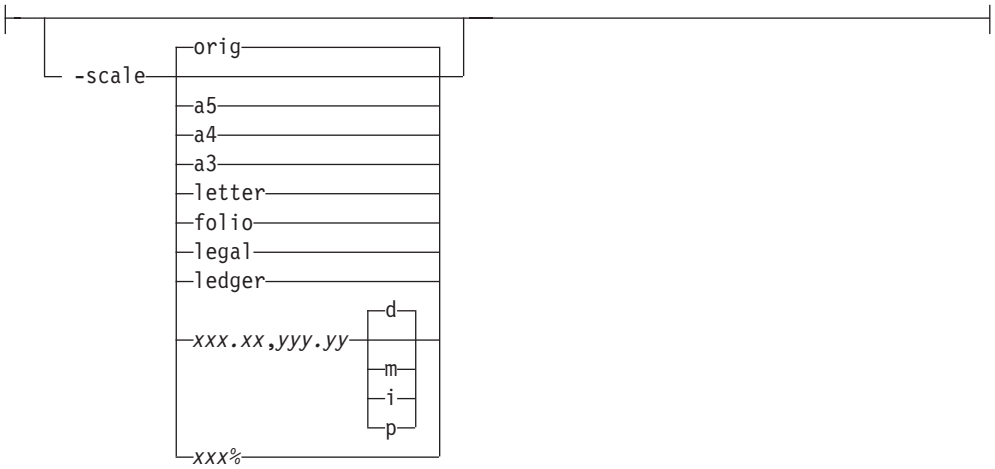
  ledger 11.0 by 17.0 inches (279 by 432 mm)

  xxx.xx,yyy.yy
  Horizontal and vertical image dimensions. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints.
- The default paper size is letter. If **-paper** is not used, the paper size is increased, if necessary, to contain the output image.
- See options **-l**, **-w**, and **-scale**.

The output device resolution, specified in dots per inch. The default is **600**.

- The image is rotated in the clockwise direction by the amount specified. The default is zero (that is, no rotation).
- If **p** is specified, the transform sets the output data stream so that the printer does the actual image rotation. If **i** is specified, the transform rotates the output bitmap. When **i** is chosen, the transform takes much longer to run and uses much more memory. If no letter is specified, the default or any previous value remains in force.

- The default is **p**.



- Specifies the output image size. The image is scaled to this size and centered in the area defined by the paper size and margin options. The supported values are:

  orig Preserve the input image size, regardless of the printable paper area

  a3 A3 format (297 by 420 mm or 11.69 by 16.54 inches)

  a4 A4 format (210 by 297 mm or 8.27 by 11.69 inches)

  a5 A5 format (148 by 210 mm or 5.83 by 8.27 inches)

  letter 8.5 by 11 inches (216 by 279 mm)

  folio 8.5 by 13.0 inches (216 by 330 mm)

  legal 8.5 by 14.0 inches (216 by 356 mm)

  ledger 11.0 by 17.0 inches (279 by 432 mm)

  xxx.xx,yyy.yy
  Horizontal and vertical image dimensions. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints.

  xxx% Magnification relative to the original image size. Numbers below 100% mean reduction, while numbers above 100% mean enlargement. For example, **-scale 200%** causes the output image to be twice as long and twice as wide as the input image.
- The default image size is **orig**.

- Turns automatic conversion to black on white for bi-level images on (**-sniff**) or off (**-nosniff**). The automatic conversion algorithm counts the number of 0 and 1 bits in the image. If there are fewer zeros, it assumes the printed features are represented by zeros (white on black), and inverts the image to be black on white. The detection and conversion are done after the conversion specified by the Photometric Interpretation tag is applied (if any).
- This option is ignored if the image is not bi-level.

- The default is **-nosniff**.

- Specifies a *FileName* that contains a PostScript Type 1 or Type 3 halftone dictionary. The *FileName* you specify can be a fully qualified filename. If you do not specify a path, the Transform Feature looks in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation.
- Halftone dictionaries for several different engine types and line screens are supplied with the Transform Feature and are installed in **/opt/IBM/itm/hn/resources/common/color** on the Linux workstation. To tune your image quality, select the file that matches your printer model.
- Alternatively, the PostScript code can specify the **setscreen** operator instead of a Type 1 dictionary. The halftone cell in the dictionary is used to overwrite the default ordered dither clustered dot halftone cell. If the PostScript code contains a transfer function, either in the halftone dictionary or specified by the **settransfer** operator, the current grayscale correction curve is overwritten as if **-gcorr** were used.

- Turns verbose mode on (**-v**) or off (**-nov**).
  - When verbose mode is on, the transform prints a message as it opens each resource file, then echoes the command line, then prints a message for each file name as it is processed.
  - When verbose mode is off, the transform prints only error messages.

  The default is **-nov**.

Specifies the paper width. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints. The default unit is dots. The default page width is 8.5 inches. See options **-l** to set the paper length or **-paper** to set both dimensions at the same time.

Specifies the left margin. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints. The default unit is dots. The default is zero (no margin).

Specifies the top margin. The optional units are **d**ots (pels), **m**illimeters, **i**nches, or **p**oints. The default unit is dots. The default is zero (no margin).

Transform Manager messages

This section lists the Transform Manager messages.

EJZ00143E The Transform Server {0} was not removed because the server is Starting or Stopping.

Explanation:

A Transform Server cannot be removed because this operation cannot be performed when the server is in a Starting or Stopping state.

System action:

Processing continues.

User response:

To remove a Transform Server, wait until its state changes from Starting or Stopping.

EJZ00175E The transform server {0} was not updated because you cannot change the Host Name and Port Number while the server is Ready or Transforming.

Explanation:

The Host Name and Port Number attributes cannot be changed when the transform server is in the Ready or Transforming state.

System action:

Processing continues.

User response:

To change the Host Name or Port Number, you must stop the transform server, change the attributes, and then restart the transform server.

EJZ00176E The transform server {0} was not updated because only the Host Name and Port Number can be changed while the server is Stopped or Lost Connection.

Explanation:

Any changes to attributes other than Host Name or Port Number result in an error when the transform server is in the Stopped or Lost Connection state because the new values must be passed to the transform server to be recognized. Only the Host Name and Port Number attributes can be changed when the transform server is in a Stopped or Lost Connection state.

System action:

Processing continues.

User response:

To change any attributes except Host Name and Port Number, you must start the transform server, wait until it is in the Ready or Transforming state, and then make the modifications.

EJZ00177E The transform server {0} was not updated because you cannot change any attributes while the server is Starting or Stopping.

Explanation:

When the transform server is in the Starting or Stopping state, it cannot accept any requests from Transform Manager to change attributes. Wait until the transform server is Stopped if you want to change the Host Name or Port Number, or wait until the transform server is in the Ready or Transforming state to change any of the other attributes.

System action:

Processing continues.

User response:

To change the Host Name or Port Number, wait until the transform server is in the Stopped or Lost Connection state. To change any other attributes, wait until the transform server is in the Ready or Transforming state. You may need to start or stop the transform server for it to be in the required state.

EJZ00221E Please use the Browse... button to select the resource you want to copy.

Explanation:

The user did not select a resource file or you entered the path directly instead of using the **Browse** button.

System action:

None.

User response:

Use the **Browse** button to select the resource you want to copy.

EJZ00222E Transform Manager did not copy the resource file.

Explanation:

Transform Manager did not copy the resource file {0} as a {2} resource type for {3} because it could not be uploaded.

System action:

None.

User response:

Make sure you use the **Browse** button to select the correct file and try again.

EJZ00223E Transform Manager received the command to copy the resource file {0} as a {2} resource type for {3} to the following transform servers: *list of servers***.**

Explanation:

A resource file was sent to the coordinator to be copied to the list of selected transform servers.

System action:

Processing continues.

User response:

None.

EJZ00224E Transform Manager did not copy the resource file.

Explanation:

Transform Manager did not copy the resource file.

System action:

Processing continues.

User response:

If the transform server is not in Lost Connection state, update the version of transform server to 1.2.5 or later.

EJZ00225E Transform Manager did not copy the resource file.

Explanation:

Transform Manager did not copy the resource file.

System action:

None.

User response:

Restart Transform Manager on the transform server that reported the error by using the **Restart Transform Manager** button or by rebooting the machine. When the transform server is available again, reissue the request.

EJZ00226E Transform Manager did not copy the resource file.

Explanation:

Transform Manager did not copy the resource file.

System action:

The shell script did not process a write command (mkdir, cp) on a resource directory. This situation applies both to the local computer or a compute node from a blade configuration.

User response:

If this is a valid request, update the permissions for the target resources directory with these commands:

```
chown –R ibmitm.itm /opt/IBM/itm/xforms
chmod –R u+rwx /opt/IBM/itm/xforms
```

EJZ00227E Transform Manager did not copy the resource file.

Explanation:

Transform Manager did not copy the resource file.

System action:

The user specified that the uploaded file is an archive but the shell script could not unpack it.

User response:

If the file is an archive, make sure it is created with the resource packaging tools included with Transform Manager or with a supported archiving tool, such as pkzip, zip, tgz, or gzip. Otherwise, change the archive setting of the file and resubmit the job.

EJZ00228E Transform Manager did not copy the resource file {0} as a {2} resource type for {3} on the Transform Server {1} because some files were already present.

Explanation:

Transform Manager did not copy the resource file.

System action:

None.

User response:

If you still want to distribute the resources, choose a different value for the **Existing Files** field.

EJZ00229E Transform Manager did not copy the resource file {0} as a {2} resource type for {3} on the Transform Server {1} because an internal error occurred.

Explanation:

A usage, configuration, or unexpected type of error occurred while copying the resource. More information might be stored in the log files.

System action:

None.

User response:

Try resubmitting the job, and if this error appears again, save the traces for that transform server using the **Export Traces** button. Contact InfoPrint Solutions Company customer service.

EJZ00230I Transform Manager successfully copied the resource file {0} as a {2} resource type for {3} on the Transform Server {1}.

Explanation:

The resource copy process was successful on the specified transform server.

System action:

Processing continues.

User response:

None.

EJZ00231W Transform Manager successfully copied the resources file {0} as a {2} resource type for {3} on the Transform Server {1}, but some files were skipped.

Explanation:

Some files were already found in one of the target directories, and the user specified that the distribution should skip the files that already exist.

System action:

Processing continues. Existing files were skipped.

User response:

None.

EJZ00232W Transform Manager successfully copied the resources file {0} as a {2} resource type for {3} on the Transform Server {1}, but some files were overwritten.

Explanation:

Some files were already found in one of the target directories, and the user specified that the distribution should overwrite the files that already exist.

System action:

Processing continues. Existing files were overwritten.

User response:

None.

EJZ00233E Transform Manager did not copy the resource file {0} as a {2} resource type for {3} on the Transform Server {1} because the Transform Server does not support the selected transform or resource type.

Explanation:

This error can be caused by a transform shipped as a PRPQ that is installed on the local transform server, but that is not on the transform server reporting the error.

System action:

None.

User response:

When the transform that you are copying resources for is shipped as a PRPQ, make sure that the transform is installed on the transform server that reported the error. You should also make sure that the transform server that reported the error is not an older version than the local transform server.

EJZ00246E Transform Manager could not recognize the hostname {0} on this network while trying to unregister with the print server {1}.

Explanation:

Transform Manager did not find the print server's host name when trying to unregister with it.

System action:

The print server was deleted from the transform feature's list.

User response:

None.

EJZ00247E Transform Manager encountered a communication error while trying to unregister with the print server {0}.

Explanation:

Transform Manager found a communication problem when trying to unregister with the specified print server.

System action:

The print server was deleted from the Transform Manager list.

User response:

None.

EJZ00248E Transform Manager failed to unregister with the print server at address {0} and port {1} because the print server initialization failed with the following message: {2}

Explanation:

The specified print server returned an error when Transform Manager tried to unregister from it.

System action:

None.

User response:

Fix the problem indicated in the error message and try to unregister the print server again.

EJZ00249W Transform Manager successfully removed the print server {0}, but the print server is still registered with Transform Manager.

Explanation:

Transform Manager detected that at some time the print server was associated with this Transform Manager and the unregistration process could not be completed.

System action:

Future jobs may still be sent to this Transform Manager.

User response:

Add the printer server and then remove it. If you see an initialization error message when adding the print server, fix the indicated problem.

EJZ00250E Transform Manager received the command to reconnect to these print servers: *list of print servers***.**

Explanation:

The user issued the command to reconnect to list of print servers.

System action:

Transform Manager reconnects the list of print servers.

User response:

None.

EJZ00251E Transform Manager could not reconnect to the print server {0} because it is no longer associated with Transform Manager.

Explanation:

Transform Manager could not find the specified print server in the list of print servers because it has been removed, and the main page has not refreshed yet.

System action:

None.

User response:

None.

EJZ00252E Transform Manager could not reconnect to the print server at the host name {0}.

Explanation:

This host name is not recognized on this network. This could be caused by a network communication error.

System action:

Transform Manager could not find the specified hostname on the network.

User response:

Make sure that the hostname is recognized on the network and resubmit the command. If the hostname is incorrect, remove the print server and add it again with the correct host name.

EJZ00253E Transform Manager encountered a communication error with the print server {0} when trying to reconnect to it.

Explanation:

Transform Manager could not connect to the specified print server.

System action:

None.

User response:

Contact your network administrator to resolve connectivity issues.

EJZ00254E Transform Manager could not reconnect to the print server at address {0} and port {1} because the print server initialization failed with the following message: {2}

Explanation:

The specified print server returned an error when Transform Manager tried to register with it.

System action:

None.

User response:

Fix the problem indicated in the error message and try to reconnect again.

EJZ00255I Transform Manager successfully reconnected to the print server {0}.

Explanation:

The specified print server reconnected to Transform Manager.

System action:

Transform Manager completed the registration process for the specified print server

User response:

None.

EJZ00256W Transform Manager did not attempt to reconnect to the print server {0} because this operation is not supported for this type of printer.

Explanation: You cannot use this type of printer with Transform Manager.

System action:

None.

User response:

None.

EJZ00257W Transform Manager failed to reconnect to the print server {0} that was registered with Transform Manager.

Explanation: Transform Manager could not reconnect to the specified print server, but Transform Manager was registered with the print server some time in the past. Therefore, future jobs might still be sent to this Transform Manager.

System action:

None.

User response:

None.

FUY04001 Failed opening connection. Host: <IP address or host name> Port: <port number>.

Explanation:

An error occurred when the print server tried to open the connection with Transform Manager. The connection was not opened.

System action:

Processing stops.

User response:

Make sure that you specified the *IP address* or *host name* and *port number* of Transform Manager correctly. Validate that the print server can have bi-directional communication with the transform feature using ports 6984 and 6986. For more information, see the documentation for InfoPrint ProcessDirector.

FUY04002 Failed opening connection. Socket number: <socket number>.

Explanation:

An error occurred when the print server tried to open the connection with Transform Manager. The connection was not opened.

System action:

Processing stops.

User response:

Verify that the *socket number* number for Transform Manager is correct in the print server configuration.

FUY04003 Error sending data.

Explanation:

The Print server interface reported an error when trying to send data to Transform Manager.

System action:

Processing stops.

User response:

Verify that a connection to Transform Manager is still available and resubmit the data.

FUY04004 Error generated by Transform Manager.

Explanation:

The Print server interface received a message from Transform Manager that states that an error has occurred.

System action:

Processing stops.

User response:

Verify that Transform Manager is running correctly. Resubmit the request.

FUY04005 Transform not supported: <transform ID>.

Explanation:

The Print server interface requested a transform ID that is not supported by Transform Manager.

System action:

Processing stops.

User response:

Resubmit with a valid transform ID, as shown in “Transform IDs” on page 165.

FUY04006 Key not supported by Transform Manager: <name of key>.

Explanation:

The Print server interface sent a *key* that is not supported by Transform Manager.

System action:

Processing stops.

User response:

Contact Software Support.

FUY04007 Input data type not recognized by sniffer.

Explanation:

Transform Manager found an error when running the sniffer. The data type was not recognized by the sniffer.

System action:

Processing stops.

User response:

Determine if the data type is valid, and if not, adjust the request as appropriate.

FUY04008 Output file <file name> does not exist or cannot be accessed.

Explanation:

Transform Manager found an error when trying to open or create the output file *file name*. This error can occur because Transform Manager could not create the output file, the output file does not exist, the permissions are incorrect, or the path is specified incorrectly.

System action:

Processing stops.

User response:

Verify that the output file is accessible and resubmit the job.

FUY04009 Input file <file name> does not exist or cannot be accessed.

Explanation:

Transform Manager found an error when trying to open the input file *file name*. This error can occur because the file does not exist, the permissions are incorrect, or the path is specified incorrectly.

System action:

Processing stops.

User response:

Verify that the input file is accessible and resubmit the job.

FUY04010 Resource <resource name> does not exist or cannot be accessed.

Explanation:

Transform Manager found an error when trying to open a resource *resource name*. This error can occur because the resource does not exist, the permissions are incorrect, or the path is specified incorrectly.

System action:

Processing stops.

User response:

Verify that the resource is accessible. Correct any errors before resubmitting the job.

FUY04011 An invalid <key/value> pair was provided to the Print server interface.

Explanation:

The print server interface received an invalid *key/value* pair.

System action:

Processing stops.

User response:

Verify that the parameters are correct and resubmit. Contact Software Support for the print server you are using.

FUY04012 The Print server interface encountered a syntax error.

Explanation:

The Print server interface found a syntax problem. It can be a missing argument, handler, or key.

System action:

Processing stops.

User response:

Contact Software Support.

FUY04013 The Print server interface encountered a logic error.

Explanation:

The Print server interface found a program error. Possibilities are: multiple transforms for a single instance, multiple tasks for a single instance, or task state mismatch.

System action:

Processing stops.

User response:

Contact Software Support.

FUY04014 The Print server interface encountered a trace error.

Explanation:

The print server interface found a tracing problem. It had a problem using the trace handler.

System action:

Processing stops.

User response:

Contact Software Support.

FUY04015 The Print server interface encountered a message catalog error.

Explanation:

The Print server interface could not open a message catalog or request a message from the message catalog.

System action:

Processing stops.

User response:

Contact Software Support.

FUY04016 The Print server interface encountered a failure.

Explanation:

The Print server interface failed.

System action:

Processing stops.

User response:

Contact Software Support.

FUY04017 Flag <flag name> is followed by an invalid value.

Explanation:

Transform Manager found a flag that has an invalid value or missing value.

System action:

Processing stops.

User response:

Verify that the value specified with the *flag name* is valid and resubmit the job.

FUY04018 The Print server interface encountered an internal error.

Explanation:

The Print server interface found an error while using the communication protocol.

System action:

Processing stops.

User response:

Contact Software Support.

FUY04019 Error receiving data.

Explanation:

The Print server interface reported an error when trying to receive data from Transform Manager.

System action:

Processing stops.

User response:

Verify that a connection to Transform Manager is still available.

FUY04020 Job failed in Transform Manager with job error: <job error>.

Explanation:

Transform Manager reported that the job has failed. In the message text, *job error* is a numeric code that can help Software Support diagnose the problem. When *job error* is 100, an optional transform, such as **afp2pdf**, is not installed.

System action:

Processing stops.

User response:

Determine what job error occurred and resubmit the job. To determine what error occurred, look at the associated transform messages, if any. The transform messages might be printed on a separate page at the end of the output or in the print server's message log. If you need assistance, contact Software Support and provide the numeric code in the message.

When *job error* is 100, determine which transform is not installed, install the optional transform, and resubmit the job.

FUY04021 Transform Manager has processed <number of pages> pages.

Explanation:

Transform Manager has sent a status update of the number of pages that have been processed.

System action:

Processing continues.

User response:

None.

FUY04022 Missing a required argument or flag.

Explanation:

Transform Manager driver was called with a missing required flag.

System action:

Processing stops.

User response:

Verify that the command contains all required flags. When using a control/configuration file, verify that the combination of command line flags and arguments in the control/configuration file contains all required arguments or flags.

FUY04023 Invalid flag: <flag>.

Explanation:

Transform Manager driver was executed with an invalid flag.

System action:

Processing stops.

User response:

Remove the invalid flag and resubmit the request.

FUY04024 Error opening control/configuration file: <filename>.

Explanation:

Transform Manager driver was executed with the **-C** flag, but an invalid configuration file was provided.

System action:

Processing stops.

User response:

Verify and correct the configuration/control file, and resubmit the request.

FUY04025 Error reading control/configuration file: <filename>.

Explanation:

Transform Manager driver could not read the control/configuration file. This error can be caused by file reading procedures or an incorrectly built control/configuration file.

System action:

Processing stops.

User response:

Verify that the control/configuration file is valid and resubmit the request.

FUY04026 Attribute <attribute name> doesn't have a value.

Explanation:

Transform Manager driver read an attribute from the control/configuration file, but the argument had no value.

System action:

Processing stops.

User response:

Modify the configuration/control file and provide the corresponding value for the attribute.

FUY04027 Attribute <attribute name> is not supported.

Explanation:

Transform Manager driver read an invalid attribute from the control/configuration file.

System action:

Processing stops.

User response:

Remove the invalid attribute from the control/configuration file.

FUY04028 Error parsing Transforms' options and values.

Explanation:

Transform Manager driver could not parse the Transforms' options and values, known as the Transform flags that are sent to the Transform Manager server.

System action:

Processing stops.

User response:

Verify that the **-F** flag or the **trans_flags** argument contains a correct list of Transform options and values.

FUY04029 Error reading command line flags and values.

Explanation:

Transform Manager driver could not read the command line flags and values.

System action:

Processing stops.

User response:

Verify that the command line flags are correct and resubmit the request.

Transform IDs

This section lists the transform IDs. In most cases, administrators and job submitters do not need to know the transform IDs.

Data stream	Transform ID
AFP	8040
DSC-compliant PostScript	8009
Encapsulated PostScript	8010
JPEG, GIF, and TIFF	8000
PCL	8033
PDF	8012
PostScript	8011
SAP	8050

Chapter 11. Password

Use this field to enter your login password.

To change the password, click **Preferences** to open the **Change Login Password** dialog.

Related tasks

“Changing passwords” on page 21
If you want to change the password for Transform Manager, you need to know the current password.

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Chapter 12. Current Password

Use this field to enter the current password that you want to change.

Related tasks

“Changing passwords” on page 21
If you want to change the password for Transform Manager, you need to know the current password.

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Chapter 13. New Password

Use this field to enter a new password.

Passwords can only be alphanumeric characters (a-z A-Z 0-9) and the special characters (! @ # $ % ^ & * ( )) on the keyboard that are accessed by pressing the shift key for the numbers 0-9. Passwords are limited to 128 characters. Zero-length passwords are allowed. The default password is an empty string, which means you do not need to specify a password.

Related tasks

"Changing passwords" on page 21
If you want to change the password for Transform Manager, you need to know the current password.

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Chapter 14. Confirm the new password

Use this field to enter the new password again.

The password you type here must match the new password you typed in the **New password** field.

Related tasks

“Changing passwords” on page 21
If you want to change the password for Transform Manager, you need to know the current password.

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Chapter 15. Server Type

Use the pull-down list to select the server type that you want to add as a print server.

You have these choices:

InfoPrint Manager for Windows/AIX without DCE

InfoPrint Manager for AIX with DCE

InfoPrint ProcessDirector

Infoprint Server for z/OS

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Chapter 16. Server Name

This field contains the required server name.

fyodor is an example of a server name.

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Chapter 17. Host Name

This field contains a required host name, such as **ps1.boulder.ibm.com**, or IP address, such as **9.99.178.58**.

The server name and host name can be the same. Valid values are alphanumeric character strings with no spaces.

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Chapter 18. Port Number

This field contains a required port number.

The port number can only be a numeric value between 0 and 65535. The default port is **6874**.

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Chapter 19. Host Name

Use this field to change the host name or IP address of the specified transform server.

This is a required field. The default is the current name of the specified transform server. The host name can be a maximum of 255 characters.

Related concepts

“Set Transform Server properties for *host*” on page 7
The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

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Chapter 20. Port Number

Use this field to change the port number of the specified transform server.

This is a required field. The default is the current port number of the specified transform server. The port number can only be a numeric value between 0 and 65535.

Related concepts

“Set Transform Server properties for *host*” on page 7
The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

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Chapter 21. Font Substitution

Use this field to turn font substitution on or off.

Sometimes jobs fail to print because fonts are not included inline or are not part of the Adobe-supplied fonts. When **Font Substitution** is **On**, the Courier font is used if a font is found that is not available. When **Font Substitution** is **Off** and a PostScript or PDF file references a font that is not available, the job stops.

From the **Font Substitution** pull-down list, select **On** or **Off**.

This is a required field. The default value is **Off**.

Related concepts

"Set Transform Server properties for *host*" on page 7
The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

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Chapter 22. Transforms

Use this field to list the transforms that are available for use with Transform Manager.

Use the slider on the right side of the field to move the contents up and down.

This is an informational field that you cannot make changes to.

Related concepts

“Set Transform Server properties for *host*” on page 7
The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

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Chapter 23. Status

This field contains the status of the selected transform server.

The status may be one of these:

Starting
The transform server is initializing to accept new transform requests.

Ready The server is running and accepting jobs. No jobs are currently being transformed.

Transforming
The server is running and is accepting jobs. At least one job is being transformed, and one or more jobs may be in the queue.

Stopping
The server is in the process of stopping. It is not accepting any new transform requests.

Stopped
The server has stopped accepting new transform requests.

Lost Connection
The connection to the server has been lost.

Related concepts

“Set Transform Server properties for *host*” on page 7
The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

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Chapter 24. CPU Utilization

This field contains the CPU utilization of the selected transform server shown as a percent bar.

The CPU utilization refers only to the machine that the selected transform server is running on.

Related concepts

“Set Transform Server properties for *host*” on page 7
The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

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Chapter 25. Jobs Queued

This field contains the number of jobs that are in the queue and waiting to be transformed.

This number does not include the jobs that are processing currently.

Related concepts

“Set Transform Server properties for *host*” on page 7
The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

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Chapter 26. Jobs Processed

This field contains the number of jobs that have been processed by the selected transform server since the server was started.

Related concepts

“Set Transform Server properties for *host*” on page 7
The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

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Chapter 27. Total Pages

This field contains the number of total pages processed for the jobs that are already completed.

Related concepts

“Set Transform Server properties for *host*” on page 7
The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

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Chapter 28. Pages/Minute

This field contains the number of pages being processed per minute for the jobs that are already completed.

Related concepts

“Set Transform Server properties for *host*” on page 7
The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

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Chapter 29. Tracing

Use this field to run a trace to help diagnose a problem. This field contains a pull-down list with these choices: **Enabled** and **Disabled**.

The default is **Enabled**.

Note: You should use this page only when Software Support asks you to run a trace to help diagnose a problem.

Related concepts

"Set Transform Server properties for *host*" on page 7
The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

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Chapter 30. Trace Settings

Use this field to specify the items to be traced.

You can trace these things:

- Internal Flow
- Head Node
- Transforms
- Front End
- Compute Nodes
- Sources

You can select multiple items in the list by holding the Control or Shift keys and clicking multiple items.

Related concepts

“Set Transform Server properties for *host*” on page 7
The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

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Chapter 31. Custom Trace Settings

Use this field to specify trace settings supplied by Software Support.

Related concepts

“Set Transform Server properties for *host*” on page 7
The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

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Chapter 32. Host Name

This field contains a required host name, such as **ts1.boulder.ibm.com**, or IP address, such as **9.99.178.58**.

The server name and host name can be the same. Valid values are alphanumeric character strings with no spaces.

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Chapter 33. Port Number

This field contains the required port number.

The port number can only be a numeric value between 0 and 65535. The default port is **6986**.

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Chapter 34. Started within

This field contains the number of days or hours that you want the Job Log to display.

- If the **Days** button is selected, specify **1-7** days or specify **All** to specify all messages.
- If the **Hours** button is selected, specify **1-24** hours or specify **All** to specify all messages.

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Chapter 35. Issued within

This field contains the number of days or hours that you want the Job Log to display.

- If the **Days** button is selected, specify **1-7** days or specify **All** to specify all messages.
- If the **Hours** button is selected, specify **1-24** hours or specify **All** to specify all messages.

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Chapter 36. Message Severity

This field contains one-word descriptions of the severity of messages on the Job Log.

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Chapter 37. DSC PostScript Job Segmenting

Use this field to turn DSC PostScript job segmenting on or off.

Sometimes a job fails to print because it is too large. When **DSC PostScript Job Segmenting** is **On** and the job is DSC-compliant, PostScript jobs are separated into smaller jobs to improve throughput. When **DSC PostScript Job Segmenting** is **Off** and a PostScript or PDF file is too large, the job stops.

From the **DSC PostScript Job Segmenting** pull-down list, select **On** or **Off**.

This is a required field. The default value is **Off**.

Related concepts

"Set Transform Server properties for *host*" on page 7
The **Set Transform Server properties for *host*** (where *host* is the host name or TCP/IP address of a transform server) contains a list of the properties and values for the transform server. To access the properties page, click the host name on the Transform Manager main page.

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Chapter 38. Reset Transform Manager

You use the **Reset Transform Manager** dialog to reset Transform Manager.

Specify the password you used to log in to the user interface.

Reset password
Use this field to specify the password you used to log in to the user interface.

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Chapter 39. Transform servers

This field lists the transform servers where the resources will be copied.

This is an informational field that you cannot make changes to.

Use the slider on the right side of the field to move the contents up and down.

Related concepts

“Resources distributor” on page 33
You use the **Resources distributor** dialog to copy resources within the directory structure of Transform Manager. You can copy a single resource or an archive of multiple resources.

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Chapter 40. Transforms

This field lists the transforms that you can copy resources for.

When you select a transform, the contents of the **Resources Type** field changes.

This is an informational field that you cannot make changes to.

Use the slider on the right side of the field to move the contents up and down.

Related concepts

“Resources distributor” on page 33
You use the **Resources distributor** dialog to copy resources within the directory structure of Transform Manager. You can copy a single resource or an archive of multiple resources.

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Chapter 41. Resources Type

This field lists the resources types for the selected transform.

When you select a transform, the contents of the **Resources Type** field changes.

Select the resource type that matches the file to be copied.

Use the slider on the right side of the field to move the contents up and down.

Related concepts

“Resources distributor” on page 33
You use the **Resources distributor** dialog to copy resources within the directory structure of Transform Manager. You can copy a single resource or an archive of multiple resources.

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Chapter 42. Resources File

This field lists the file to be copied that you select with the **Browse** button.

Click **Browse** to select the file to be copied.

The file can be a single resource file or an archive file with a file type of `tgz` or `zip`.

Note: The size of the resource file must be less than 250 MB.

Related concepts

"Resources distributor" on page 33
You use the **Resources distributor** dialog to copy resources within the directory structure of Transform Manager. You can copy a single resource or an archive of multiple resources.

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Chapter 43. Archive

Use this field to specify if the file to be copied is an archive file.

From the pull-down list, click **Yes** if you are copying an archive file or click **No** if you are copying a single resource file.

Transform Manager unpacks the archive file and copies the contents to the selected transform's resources directory. A single resource file is copied to the selected transform's resource directory.

Related concepts

"Resources distributor" on page 33
You use the **Resources distributor** dialog to copy resources within the directory structure of Transform Manager. You can copy a single resource or an archive of multiple resources.

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Chapter 44. Existing Files

This field lists what action to take when a resource file already exists on a machine.

Select an action from the pull-down list:

Fail Before copying any files, Transform Manager checks to see if any files would be overwritten by the copy process. When **Fail** is selected, resource copying ends and you see message EJZ00228E .

Skip A resource file is copied only if it does not already exist.

Overwrite
A resource file is copied and overwrites a file with the same name if it already exists.

Related concepts

"Resources distributor" on page 33
You use the **Resources distributor** dialog to copy resources within the directory structure of Transform Manager. You can copy a single resource or an archive of multiple resources.

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Chapter 45. User interface password

Use this field to specify the password you used to log in to the user interface.

Type the password you used to log in to the user interface and then click **Reset ITM**.

Related information

Chapter 38, “Reset Transform Manager,” on page 221
You use the **Reset Transform Manager** dialog to reset Transform Manager.

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Chapter 46. Accessibility

Accessibility features are an important part of Transform Manager.

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, use software products successfully. The major accessibility features in Transform Manager let users:

- Use assistive technologies such as screen-readers and screen magnifier software.
- Operate specific or equivalent features 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 Transform Manager. Consult the assistive technology documentation for specific information when using it to access Transform Manager.

Keyboard navigation of the user interface

The Transform Manager user interface complies with the accessibility guidelines for HTML. Users can use keyboard shortcuts or function keys (PF keys) to access the Transform Manager user interface. See your browser documentation for keyboard shortcuts and default settings for the PF keys and for explanations about how to modify their functions.

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Glossary

This glossary defines technical terms and abbreviations used in Transform Manager.

A

access control. In computer security, the methods and facilities used to ensure that a computer system and the data, system software, and application programs stored in it can be accessed only by authorized users in authorized ways.

Advanced Function Presentation (AFP). A set of licensed programs, together with user applications, that use the all-points-addressable concept to print data on a wide variety of printers or display data on a variety of display devices. AFP also includes creating, formatting, archiving, retrieving, viewing, and distributing information.

AFP. See *Advanced Function Presentation*.

AIX. Advanced Interactive Executive operating system, which is IBM's implementation of the UNIX® operating system.

C

client. In a distributed file system environment, a system that is dependent on a server to provide it with programs or access to programs.

client/server. In communications, the model of interaction in distributed data processing in which a program at one site sends a request to a program at another site and awaits a response. The requesting program is called a client; the answering program is called a server.

command. A request from a terminal or a specification in a batch-processing print file for the performance of an operation or the running of a particular program.

F

file. (1) A collection of related data that is stored and retrieved by an assigned name. (2) Linear data that can be opened, written, read, and closed. A file can also contain information about the file, such as authorization information. The name used to obtain a file includes the directories in the path to the file.

G

GIF. Graphics interchange format for images.

H

host name. (1) The network name for a print server or transform server. The host name is the fully qualified domain name or a specific subname of a fully qualified domain name. For example, if printserver1.boulder.ibm.com is the fully qualified domain name, either printserver1.boulder.ibm.com or printserver1 can be the host name. (2) See also *IP address*.

I

InfoPrint Manager for AIX or Windows. A software component of InfoPrint Solutions Company. InfoPrint Manager for AIX or Windows is a print server that handles the scheduling, archiving, retrieving, and assembly of a print job and its related resource files. It also tracks the finishing and packaging of the printed product.

IP address. (1) In the Internet suite of protocols, the 32-bit address of a print server or transform server, expressed in dotted decimal notation. For example: 9.99.9.143. (2) See also *host name*.

J

JPEG. Joint Photographic Experts Group image format.

L

Linux. An open source implementation of the UNIX system.

M

mount. To make a file system accessible.

N

network. A collection of data processing products that are connected by communication lines for information exchange between locations.

P

PDF. See *Portable Document Format*.

persistent. Pertaining to data that is maintained across session boundaries, usually in nonvolatile storage such as a database system or a directory.

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port. (1) A part of the system unit or remote controller to which cables for external devices (display stations, terminals, or printers) are attached. The port is an access point for data entry or exit. (2) A specific communications endpoint within a host. A port is identified by a port number.

Portable Document Format (PDF). A universal file format that preserves the fonts, images, graphics, and layout of any source document so it can be viewed and printed on a variety of platforms.

PostScript (PS). A page description language with graphics capabilities that was developed by Adobe Systems, Incorporated.

print server. A computer to which one or more printers are connected or the process that manages those printers.

processor. In a computer, a functional unit that interprets and executes instructions.

PS. See *PostScript*.

R

root. The user name for the system user with the most authority.

S

server. (1) On a network, the computer that contains the data or provides the facilities to be accessed by other computers on the network. (2) A program that handles protocol, queuing, routing, and other tasks necessary for data transfer between devices in a computer system.

spool. The system function of putting files or jobs into disk storage for later processing or printing.

T

trace. A record of the execution of a computer program. It exhibits the sequences in which the instructions were executed.

transform server. The process that manages data and image transforms.

TIFF. Tagged image file format.

W

Web browser. A client program that initiates requests to a Web server and displays the information that the server returns.

Web server. The program that is capable of servicing Hypertext Transfer Protocol (HTTP) requests for display in a Web browser.

write access. The authority to record data in a storage device or on a data medium.

X

X Window System. A network-based graphics windowing system that provides the foundation on which a graphical user interface (GUI) can be built.

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