

# Understanding Transforms and the Configurable Transform Subsystem

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## Transforms

*Transforms* are Infoprint objects (like queues and destinations) that you create and configure in Infoprint Manager. Transforms receive data in a particular format or formats, process the data in some way, and output the changed data. When you create a transform, you have complete control over what data format or formats it operates on and what type of processing it does. The processing that the transform performs can be anything from simply copying the data to a different place on disk, to filtering the data stream that the transform receives (for example, to remove a particular PostScript order), to transforming the data to a completely different format (for example, converting PCL to AFP).

When you create a transform, you specify several things, including:

- **Input data format**

The data stream that is sent to the transform. The input data format is what the transform uses to determine whether or not it has any work to do. If you send a PostScript job through a transform that has its input data stream set only to **PCL**, the job will bypass the transform without being changed at all. You can set the transform to accept multiple input data formats.

- **Transform options**

The program or command that actually does the work of the transform; what happens during the *processing* stage. The transform options can be system commands (such as **copy**), programs provided with Infoprint Manager (such as **ps2afp**), or your own custom transform programs (for example, **mypclfixup**).

When you create a transform, you specify the complete command line needed to invoke this program or command. Within this command line, you can also specify various *substitution variables*, place holders which Infoprint Manager replaces with a value when Infoprint Manager runs the transform. For example, if you include `%i` in the line, Infoprint Manager will replace it with the name of the file that the transform receives; if you include `%o`, it will be replaced with the name of the file that the transform puts the changed data into.

- **Output data format**

The data stream that results from the transform. You can only specify one output data format.

In addition, you can specify whether or not you want the file that the transform produces to be printed. If the transform doesn't submit the file to be printed (for example, if the transform completes its processing and saves the file to a different location), it is called a *terminating transform*.

## Transform Sequences

Transforms do not do anything by themselves. They remain inactive until you associate them with an actual destination as a transform sequence. A *transform sequence* is an attribute of an actual destination that contains an ordered list of transforms. Every job that is submitted to that actual destination is sent through that list of transforms in the order specified before it is printed.

**Note:** If you include a terminating transform in a transform sequence, it must be the last transform in the sequence.

### Transform Sequence Example

You want to define an actual destination that will copy AFP versions of all print jobs sent to it into a directory on your Infoprint Manager server system. This directory is used as an archive of AFP versions of print jobs that may need to be viewed later.

To accomplish this, you use the Infoprint Manager Administration GUI to create these three transforms:

1. **tranps**

You set the input data format to PostScript, the Transform options to use ps2afp, and the output data format to MODCA-P (Mixed Object Document Content Architecture).

2. **tranpcl**

You set the input data format to PCL, the Transform options to use pcl2afp, and the output data format to MODCA-P.

3. **saveafp**

You set the input data format to AFP, the Transform options to issue a **copy** command, and the output data format to MODCA-P. In addition, you make this a terminating transform by selecting **Transform only** in the **Create Transform** dialog.

Then, create an actual destination that you want to perform the transform sequence. When the Printer Creation wizard asks if you want to change the configuration for the printer, select yes, then click the **Configuration** tab to define the transform sequence as follows:

1. transps
2. transpcl
3. saveafp

**Note:** If you already have the destination created, open the properties notebook for that actual destination and click the **Configuration** tab to define the transform sequence.

Now, when you send a job to this actual destination, the following sequence of actions occurs:

1. **transps** checks to see if the incoming data is PostScript. If it is PostScript, **transps** transforms the data into AFP using ps2afp. If it is not PostScript, **transps** does nothing.
2. **tranpcl** checks to see if the incoming data is PCL. If it is PCL, **tranpcl** transforms it to AFP using pcl2afp. If it is not PCL, **tranpcl** does nothing.
3. **saveafp** copies the AFP file produced by either of the above steps into a specific directory.

4. Since **saveafp** is a terminating transform, the job is not printed but is marked complete at this point.

For more details on transform objects and transform sequences, see the Administration Procedures **Working with Infoprint Manager Transform Programs** and **Using Data Stream Transform Sequences** on your Infoprint Manager Publication CD or on the IBM Printing Systems website at <http://www.ibm.com/printers>. On the Printing Systems homepage, click Infoprint Manager under **Resources for**, then click Infoprint Manager for Windows NT and Windows 2000 on the Infoprint Manager Family homepage. Select **Product Library** from the drop-down list in the right hand navigation bar, then click the link for **Administrator Procedures**.

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## Netware.exe

Netware.exe is one of the transform programs that is included with Infoprint Manager. This program extracts the user ID and job information from the header of PostScript print jobs that are submitted from a Netware server, then strips that header off the job and creates a new header that prints correctly from Infoprint Manager. Netware.exe is a terminating transform, but not because it stores its output in another file. It is a terminating transform because the last step of the program is to issue a **pdpr** command, which submits the job to a logical destination to be printed.

**Note to PSF for OS/2 users:** Netware.exe provides the same function that was available through netware.cmd in PSF for OS/2.

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