



**Program Directory for
IBM Print Transform from AFP to PCL for
Infoprint Server for z/OS V1R2**

Program Number 5655-TF2

FMIDs HTFX120, HTFX122

for Use with
z/OS V2R1 or higher

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GI11-9843-01

Note

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 27.

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1.0 Introduction

This program directory is intended for system programmers who are responsible for program installation and maintenance. It contains information about the material and procedures associated with the installation of IBM Print Transform from AFP to PCL for Infoprint Server for z/OS. This publication refers to IBM Print Transform from AFP to PCL for Infoprint Server for z/OS as Print Transform AFPxPCL.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic program materials and documentation for Print Transform AFPxPCL.
- 3.0, “Program Support” on page 5 describes the IBM® support available for Print Transform AFPxPCL.
- 4.0, “Program and Service Level Information” on page 7 lists the APARs (program level) and PTFs (service level) that have been incorporated into Print Transform AFPxPCL.
- 5.0, “Installation Requirements and Considerations” on page 9 identifies the resources and considerations that are required for installing and using Print Transform AFPxPCL.
- 6.0, “Installation Instructions” on page 17 provides detailed installation instructions for Print Transform AFPxPCL. It also describes the procedures for activating the functions of Print Transform AFPxPCL, or refers to appropriate publications.

Before installing Print Transform AFPxPCL, read the *CBPDO Memo To Users* and the *CBPDO Memo To Users Extension* that are supplied with this program in softcopy format and this program directory; then keep them for future reference. Section 3.2, “Preventive Service Planning” on page 5 tells you how to find any updates to the information and procedures in this program directory.

Print Transform AFPxPCL is supplied in a Custom-Built Product Delivery Offering (CBPDO, 5751-CS3). The program directory that is provided in softcopy format on the CBPDO tape is identical to the hardcopy format if one was included with your order. All service and HOLDDATA for Print Transform AFPxPCL are included on the CBPDO tape.

Do not use this program directory if you install Print Transform AFPxPCL with a SystemPac or ServerPac. When you use one of those offerings, use the jobs and documentation supplied with the offering. This program directory can point you to specific sections of it as required.

1.1 Print Transform AFPxPCL Description

Print Transform AFPxPCL is a complementary product to the Infoprint Server feature of z/OS®. Print Transform AFPxPCL enables conversion of AFP applications into PCL for printing on LAN-attached printers that support this data format.

1.2 Print Transform AFPxPCL FMIDs

Print Transform AFPxPCL consists of the following FMIDs:

- HTFX120
- HTFX122

2.0 Program Materials

An IBM program is identified by a program number. The program number for Print Transform AFPxPCL is 5655-TF2.

Basic Machine-Readable Materials are materials that are supplied under the base license and are required for the use of the product.

The program announcement material describes the features supported by Print Transform AFPxPCL. Ask your IBM representative for this information if you have not already received a copy.

2.1 Basic Machine-Readable Material

The distribution medium for this program is physical media or downloadable files. This program is in SMP/E RELFILE format and is installed by using SMP/E. See 6.0, "Installation Instructions" on page 17 for more information on how to install the program.

You can find information about the physical media for the basic machine-readable materials for Print Transform AFPxPCL in the *CBPDO Memo To Users Extension*.

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for Print Transform AFPxPCL.

2.3 Program Publications

The following sections identify the basic publications for Print Transform AFPxPCL.

2.3.1 Basic Program Publications

Figure 1 identifies the basic unlicensed or licensed publications for Print Transform AFPxPCL. These softcopy format publications can be obtained from the IBM Publications Center website at <http://www.ibm.com/shop/publications/order/>.

<i>Figure 1. Basic Material: Other Unlicensed or Licensed Publications</i>		
Publication Title	Form Number	Media Format
IBM Print Transforms from AFP for Infoprint Server for z/OS	G325-2634-03	Internet
IBM Print Transform from AFP to PCL for Infoprint Server for z/OS Licensed Program Specifications	G325-2635-01	Internet

2.3.2 Optional Program Publications

No optional publications are provided for Print Transform AFPxPCL.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for Print Transform AFPxPCL.

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 2 during installation of Print Transform AFPxPCL. To order copies, contact your IBM representative or visit the IBM Publications Center at <http://www-05.ibm.com/e-business/linkweb/publications/servlet/pbi.wss>.

Figure 2. Publications Useful During Installation

Publication Title	Form Number	Media Format
<i>IBM SMP/E for z/OS User's Guide</i>	SA23-2277-01	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Commands</i>	SA23-2275-03	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Reference</i>	SA23-2276-01	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA32-0883-03	http://www.ibm.com/shop/publications/order/
<i>z/OS Infoprint Server Introduction</i>	SA38-0692-01	http://www.ibm.com/shop/publications/order/
<i>z/OS Infoprint Server Customization</i>	SA38-0691-01	http://www.ibm.com/shop/publications/order/
<i>z/OS Infoprint Server Operation and Administration</i>	SA38-0693-01	http://www.ibm.com/shop/publications/order/
<i>z/OS Infoprint Server User's Guide</i>	SA38-0695-01	http://www.ibm.com/shop/publications/order/
<i>z/OS Infoprint Server Messages and Diagnosis</i>	GA32-0927-01	http://www.ibm.com/shop/publications/order/
<i>IBM Print Transforms from AFP for Infoprint Server for z/OS</i>	G325-2634-03	http://www.ibm.com/shop/publications/order/
<i>z/OS MVS® JCL Reference</i>	SA23-1385-03	http://www.ibm.com/shop/publications/order/

3.0 Program Support

This section describes the IBM support available for Print Transform AFPxPCL.

3.1 Program Services

Contact your IBM representative for specific information about available program services.

3.2 Preventive Service Planning

Before you install Print Transform AFPxPCL, make sure that you have reviewed the current Preventive Service Planning (PSP) information. Review the PSP Bucket for General Information, Installation Documentation, and the Cross Product Dependencies sections. For the Recommended Service section, instead of reviewing the PSP Bucket, it is recommended you use the IBM.ProductInstall-RequiredService fix category in SMP/E to ensure you have all the recommended service installed. Use the **FIXCAT(IBM.ProductInstall-RequiredService)** operand on the **APPLY CHECK** command. See 6.1.11, “Perform SMP/E APPLY” on page 21 for a sample APPLY command.

If you obtained Print Transform AFPxPCL as part of a CBPDO, HOLDDATA is included.

If the CBPDO for Print Transform AFPxPCL is older than two weeks by the time you install the product materials, you can obtain the latest PSP Bucket information by going to the following website:

<http://www14.software.ibm.com/webapp/set2/psearch/search?domain=psp>

You can also use S/390® SoftwareXcel or contact the IBM Support Center to obtain the latest PSP Bucket information.

For program support, access the Software Support Website at <http://www-01.ibm.com/software/support/>.

PSP Buckets are identified by UPGRADEs, which specify product levels; and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for Print Transform AFPxPCL are included in Figure 3

<i>Figure 3. PSP Upgrade and Subset ID</i>		
UPGRADE	SUBSET	Description
5655TF1	HTFX120	Xform Common
5655TF2	HTFX122	Xform AFPxPCL

3.3 Statement of Support Procedures

Report any problems which you feel might be an error in the product materials to your IBM Support Center. You may be asked to gather and submit additional diagnostics to assist the IBM Support Center in their analysis.

Figure 4 on page 6 identifies the component IDs (COMPID) for Print Transform AFPxPCL.

<i>Figure 4. Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
HTFX120	5655TFX00	IP XFORM COMMON	120
HTFX122	5655TFX00	IP AFPxPCL	122

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of Print Transform AFPxPCL. The program level refers to the APAR fixes that have been incorporated into the program. The service level refers to the PTFs that have been incorporated into the program.

4.1 Program Level Information

The following APAR fixes against previous releases of Print Transform AFPxPCL have been incorporated into this release. They are listed by FMID.

- FMID HTFX120

OA35704 OA38585 OA39396 OA39657 OA39659 OA40033
OA40619 OA42632 OA43938 OA44092 OA44219 OA44880
OA45957

- FMID HTFX122

OA35704 OA36007 OA37322 OA38368 OA38585 OA39396
OA39657 OA39659 OA39978 OA39980 OA40033 OA40619
OA41426 OA41772 OA42191 OA42632 OA43034 OA43268
OA43771 OA43938 OA44092 OA44219 OA44490 OA44604
OA44880 OA45136 OA45335 OA45731 OA45957 OA46467
OA46649 OA46897 OA47179 OA47304 OA47329 OA47970
OA48070 OA48222 OA48329 OA48657 OA48882 OA49258
OA49461 OA49552 OA49629 OA49667 OA49901 OA50620
OA51208 OA51638

4.2 Service Level Information

No PTFs against this release of Print Transform AFPxPCL have been incorporated into the product package.

Frequently check the Print Transform AFPxPCL PSP Bucket for HIPER and SPECIAL attention PTFs against all FMIDs that you must install. You can also receive the latest HOLDDATA, then add the **FIXCAT(IBM.ProductInstall-RequiredService)** operand on your **APPLY CHECK** command. This will allow you to review the recommended and critical service that should be installed with your FMIDs.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating Print Transform AFPxPCL. The following terminology is used:

- *Driving system*: the system on which SMP/E is executed to install the program.

The program might have specific operating system or product level requirements for using processes, such as binder or assembly utilities during the installation.

- *Target system*: the system on which the program is configured and run.

The program might have specific product level requirements, such as needing access to the library of another product for link-edits. These requirements, either mandatory or optional, might directly affect the element during the installation or in its basic or enhanced operation.

In many cases, you can use a system as both a driving system and a target system. However, you can make a separate IPL-able clone of the running system to use as a target system. The clone must include copies of all system libraries that SMP/E updates, copies of the SMP/E CSI data sets that describe the system libraries, and your PARMLIB and PROCLIB.

Use separate driving and target systems in the following situations:

- When you install a new level of a product that is already installed, the new level of the product will replace the old one. By installing the new level onto a separate target system, you can test the new level and keep the old one in production at the same time.
- When you install a product that shares libraries or load modules with other products, the installation can disrupt the other products. By installing the product onto a separate target system, you can assess these impacts without disrupting your production system.

5.1 Driving System Requirements

This section describes the environment of the driving system required to install Print Transform AFPxPCL.

5.1.1 Machine Requirements

The driving system can run in any hardware environment that supports the required software.

5.1.2 Programming Requirements

Figure 5. Driving System Software Requirements

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	V2R1 or higher	N/A	No
5655-G44	IBM SMP/E for z/OS	V3R6	N/A	No

Note: SMP/E is a requirement for installation and is an element of z/OS but can also be ordered as a separate product, 5655-G44, minimally V3R6.

Note: Installation might require migration to new z/OS releases to be service supported. See http://www-03.ibm.com/systems/z/os/zos/support/zos_eos_dates.html.

Print Transform AFPxPCL is installed into a file system, either HFS or zFS. Before installing Print Transform AFPxPCL, you must ensure that the target system file system data sets are available for processing on the driving system. OMVS must be active on the driving system and the target system file data sets must be mounted on the driving system.

If you plan to install Print Transform AFPxPCL in a zFS file system, this requires that zFS be active on the driving system. Information on activating and using zFS can be found in *z/OS Distributed File Service zSeries File System Administration*, SC24-5989.

5.2 Target System Requirements

This section describes the environment of the target system required to install and use Print Transform AFPxPCL.

Print Transform AFPxPCL installs in the z/OS (Z038) SREL.

5.2.1 Machine Requirements

The target system can run in any hardware environment that supports the required software.

5.2.2 Programming Requirements

5.2.2.1 Installation Requisites: Installation requisites identify products that are required and *must* be present on the system or products that are not required but *should* be present on the system for the successful installation of this product.

Mandatory installation requisites identify products that are required on the system for the successful installation of this product.

Figure 6. Target System Mandatory Installation Requisites

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	V2R1 or higher	N/A	No

Note: Installation might require migration to new z/OS releases to be service supported. See http://www-03.ibm.com/systems/z/os/zos/support/zos_eos_dates.html.

Conditional installation requisites identify products that are *not* required for successful installation of this product but can resolve such things as certain warning messages at installation time. These products are specified as IF REQs.

Print Transform AFPxPCL has no conditional installation requisites.

5.2.2.2 Operational Requisites: Operational requisites are products that are required and *must* be present on the system or products that are not required but *should* be present on the system for this product to operate all or part of its functions.

Mandatory operational requisites identify products that are required for this product to operate its basic functions.

Print Transform AFPxPCL has the following mandatory operational requisites. The Transform Manager component of Infoprint Server is used to invoke the transform provided in Print Transform AFPxPCL.

Figure 7. Target System Mandatory Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5650-ZOS	Infoprint Server - Print Interface optional feature of z/OS V2R1 or higher	Required for basic transform function

Conditional operational requisites identify products that are *not* required for this product to operate its basic functions but are required at run time for this product to operate specific functions.

Figure 8 (Page 1 of 2). Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
Any one of the following:		
5650-ZOS	z/OS Font Collection	To provide 300 dpi raster fonts and outline fonts

Figure 8 (Page 2 of 2). Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5799-FLK	Sonoran Equivalent Fonts PRPQ 8A5061	To transform documents that contain Sonoran Serif or Sonoran Sans Serif fonts.

5.2.2.3 Toleration/Coexistence Requisites: Toleration/coexistence requisites identify products that must be present on sharing systems. These systems can be other systems in a multisystem environment (not necessarily sysplex), a shared DASD environment (such as test and production), or systems that reuse the same DASD environment at different time intervals.

Print Transform AFPxPCL has no toleration/coexistence requisites.

5.2.2.4 Incompatibility (Negative) Requisites: Negative requisites identify products that must *not* be installed on the same system as this product.

Print Transform AFPxPCL has no negative requisites

5.2.3 DASD Storage Requirements

Print Transform AFPxPCL libraries can reside on all supported DASD types.

Figure 9 lists the total space that is required for each type of library.

Figure 9. Total DASD Space Required by Print Transform AFPxPCL

Library Type	Total Space Required in 3390 Trks
Target	7 tracks on 3390 DASD
Distribution	707 tracks on 3390 DASD
File System(s)	750 tracks on 3390 DASD

Notes:

1. For non-RECFM U data sets, IBM recommends using system-determined block sizes for efficient DASD utilization. For RECFM U data sets, IBM recommends using a block size of 32760, which is most efficient from the performance and DASD utilization perspective.
2. Abbreviations used for data set types are shown as follows.
 - U** Unique data set, allocated by this product and used by only this product. This table provides all the required information to determine the correct storage for this data set. You do not need to refer to other tables or program directories for the data set size.

- S** Shared data set, allocated by this product and used by this product and other products. To determine the correct storage needed for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.
- E** Existing shared data set, used by this product and other products. This data set is *not* allocated by this product. To determine the correct storage for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.

If you currently have a previous release of this product installed in these libraries, the installation of this release will delete the old release and reclaim the space that was used by the old release and any service that had been installed. You can determine whether these libraries have enough space by deleting the old release with a dummy function, compressing the libraries, and comparing the space requirements with the free space in the libraries.

For more information about the names and sizes of the required data sets, see 6.1.7, “Allocate SMP/E Target and Distribution Libraries” on page 20.

3. Abbreviations used for the file system path type are as follows.

- N** New path, created by this product.
- X** Path created by this product, but might already exist from a previous release.
- P** Previously existing path, created by another product.

4. All target and distribution libraries listed have the following attributes:

- The default name of the data set can be changed.
- The default block size of the data set can be changed.
- The data set can be merged with another data set that has equivalent characteristics.
- The data set can be either a PDS or a PDSE.

5. All target libraries listed have the following attributes:

- These data sets can be SMS-managed, but they are not required to be SMS-managed.
- These data sets are not required to reside on the IPL volume.
- The values in the "Member Type" column are not necessarily the actual SMP/E element types that are identified in the SMPMCS.

6. All target libraries that are listed and contain load modules have the following attributes:

- These data sets can be in the LPA, but they are not required to be in the LPA.
- These data sets can be in the LNKST.
- These data sets are not required to be APF-authorized.

Figure 10. Storage Requirements for SMP/E Work Data Sets

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SMPWRK1	S	PDS	FB	80	5	2
SMPWRK2	S	PDS	FB	80	5	2
SMPWRK3	S	PDS	FB	80	5	2
SMPWRK4	S	PDS	FB	80	5	2
SMPWRK6	S	PDS	FB	80	5	2
SYSUT1	U	SEQ	--	--	2	0
SYSUT2	U	SEQ	--	--	1	0
SYSUT3	U	SEQ	--	--	1	0
SYSUT4	U	SEQ	--	--	1	0

The following table provides an estimate of the storage needed in the SMP/E data sets for Print Transform AFPxPCL. You must add the estimates to those of any other programs and service that you install to determine the total additional storage requirements.

Figure 11. Storage Requirements for SMP/E Data Sets

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SMPLTS	E	PDSE	U	0	15	--
SMPMTS	E	PDS	FB	80	15	2
SMPPTS	E	PDS	FB	80	15	2
SMPSCDS	E	PDS	FB	80	15	2
SMPSTS	E	PDS	FB	80	15	2

The following figures describe the target and distribution libraries and file system paths required to install Print Transform AFPxPCL. The storage requirements of Print Transform AFPxPCL must be added to the storage required by other programs that have data in the same library or path.

Note: Use the data in these tables to determine which libraries can be merged into common data sets. In addition, since some ALIAS names may not be unique, ensure that no naming conflicts will be introduced before merging libraries.

Figure 12. Storage Requirements for Print Transform AFPxPCL Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SAOKJ120	Sample	TVOL2	S	PDS	FB	80	7	2

Figure 13. Print Transform AFPxPCL File System Paths

DDNAME	T Y P E	Path Name
SAOKF120	N	/usr/lpp/IBM/PrintXform/V1R2/IBM
SAOKF122	N	/usr/lpp/IBM/PrintXform/V1R2/AFPxPCL/IBM

Figure 14. Storage Requirements for Print Transform AFPxPCL Distribution Libraries

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
AAOKJ120	S	PDS	FB	80	7	2
AAOKF120	S	PDSE	VB	259	700	--

5.3 FMIDs Deleted

Print Transform AFPxPCL V1R2 installation will result in the deletion of V1R1 level of these transforms. To see what FMIDs will be deleted, examine the ++ VER statement in the product's SMPMCS.

The SMP/E Modification Control Statements (SMPMCS) for the product are contained in the SMPMCS file. The SMPMCS for each FMID in the product will be loaded to the SMPPTS data set, with a member name matching the FMID, when the FMID is SMP/E RECEIVED. You may browse or print these members using TSO/E, ISPF, or IEBGENER.

A sample dummy delete job, AOKDELFN, is provided in relfile 'prefix.HTFX120.F2' after SMP/E RECEIVE processing is complete. If you have installed Print Transform AFPxPCL V1R1 and other Print Transform products, you must run sample job AOKDELFN to have SMP/E processing DELETE Print Transform V1R1 products before installing the V1R2 level of the FMIDs.

5.4 Special Considerations

Print Transform AFPxPCL is closely related to the Infoprint Server optional feature of z/OS V2R1 and higher. Print Transform AFPxPCL no longer shares target and distribution libraries and file system paths with Infoprint Server. This allows independent installation of these products. Users must run a one time post install script before using Print Transform AFPxPCL product, please see detailed information in section 6.2.3, “Execute Installation Verification Procedures (IVPs)” on page 25.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of Print Transform AFPxPCL.

Please note the following points:

- The IBM Print Transform products (5655-TF1, 5655-TF2, 5655-TF3) consist of at least two FMIDs, one for the common transforms code, and at least one for the specific transform code.
 - HTFX120 - contains the common transform code.
 - HTFX121 - contains the AFP to PDF transform code.
 - HTFX122 - contains the AFP to PCL transform code.
 - HTFX123 - contains the AFP to PostScript transform code.

Print Transform AFPxPCL consists of the FMIDs HTFX120 and HTFX122. If you ordered several transform products you can install them together. Refer to the specific transform product's program directory for installation requirements.

- If you want to install Print Transform AFPxPCL into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMPCSI and the SMP/E control data sets.
- You can use the sample jobs that are provided to perform part or all of the installation tasks. The SMP/E jobs assume that all DDDEF entries that are required for SMP/E execution have been defined in appropriate zones.
- You can use the SMP/E dialogs instead of the sample jobs to accomplish the SMP/E installation steps.

6.1 Installing Print Transform AFPxPCL

All installation steps must be run from a user ID that is defined to z/OS UNIX System Services, and has the following attributes:

- UID(0) or READ access or higher to BPX.SUPERUSER in the FACILITY class.
- READ access or higher to BPX.FILEATTR.PROGCTL, BPX.FILEATTR.APF, and BPX.FILEATTR.SHARELIB in the FACILITY classes.

6.1.1 SMP/E Considerations for Installing Print Transform AFPxPCL

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of Print Transform AFPxPCL.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 15 on page 18. Using values lower than the recommended values can result in failures in the installation. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. See the SMP/E manuals for instructions on updating the global zone.

<i>Figure 15. SMP/E Options Subentry Values</i>		
Subentry	Value	Comment
DSSPACE	450,45,100	3390 DASD tracks
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX

6.1.3 SMP/E CALLLIBS Processing

Print Transform AFPxPCL does not require the use of the CALLLIBs function.

6.1.4 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install Print Transform AFPxPCL:

<i>Figure 16. Sample Installation Jobs</i>			
Job Name	Job Type	Description	RELFILE
AOKACPT	ACCEPT	Sample SMP/E ACCEPT job	IBM.HTFX120.F2
AOKALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HTFX120.F2
AOKALZFS	zFS ALLOCATE	Sample job to allocate and mount the zFS	IBM.HTFX120.F2
AOKAPLY	APPLY	Sample SMP/E APPLY job	IBM.HTFX120.F2
AOKCLNUP	CLEANUP	Sample job to delete obsolete data sets, DDDEFs of previous level of Print Transform	IBM.HTFX120.F2
AOKDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HTFX120.F2
AOKDELFN	FMID DELETE	Sample job to delete previous level of Print Transform FMIDs	IBM.HTFX120.F2
AOKMKDR2	MKDIR	Sample mkdir exec invoked by AOKMKJB2 job to define install paths	IBM.HTFX120.F2
AOKMKJB2	MKDIR JCL	Sample job to invoke the supplied AOKMKDR2 exec to allocate file system paths	IBM.HTFX120.F2

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.5, “Perform SMP/E RECEIVE” on page 19) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 16 to find the appropriate relfile data set.

6.1.5 Perform SMP/E RECEIVE

If you have obtained Print Transform AFPxPCL as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the Print Transform AFPxPCL FMIDs, service, and HOLDDATA that are included on the CBPDO package. For more information, see the documentation that is included in the CBPDO.

Expected Return Codes and Messages: A return code of 0 should be received.

6.1.6 Run FMID Delete Job

If you migrate from previous level of Print Transform AFPxPCL, you must delete the previous level of Print Transform AFPxPCL FMIDs before installing Print Transform AFPxPCL V1R2 because they cannot coexist during execution. Following are the installation considerations.

1. If you are installing Print Transform AFPxPCL V1R2 into the same SMP/E zones where previous level of Print Transform AFPxPCL was installed, you MUST delete the previous release level of FMIDs using the provided sample job AOKDELFN. Edit and submit sample job AOKDELFN to perform the delete of the obsolete FMIDs. After AOKDELFN is successfully run, you can proceed to the next installation step.
2. If you are installing Print Transform AFPxPCL V1R2 into new separate SMP/E zones, you must run the provided sample job AOKDELFN to delete the previous level of Print Transform AFPxPCL in the old SMP/E zones. Edit and submit sample job AOKDELFN to perform the delete of the obsolete FMIDs. After AOKDELFN is successfully run, you can proceed to the next installation step.

Notes:

1. Sample job AOKDELFN is provided to SMP/E DELETE Print Transform AFPxPDF, AFPxPCL, and AFPxPS V1R1 (FMIDs HTFX110, HTFX111, HTFX112, HTFX113) before installing Print Transform AFPxPCL V1R2.
2. If you migrate from Print Transform AFPxPCL V1R1 (FMIDs HTFX110 and HTFX112) and run the AOKDELFN job, SMP/E processing will delete FMIDs HTFX110 and HTFX112. However, Print Transform AFPxPDF V1R1 FMID HTFX111 and Print Transform AFPxPS V1R1 FMID HTFX113 will not be deleted by SMP/E processing if the FMIDs do not exist in the SMP/E zones when AOKDELFN job is run.

If you are not migrating from previous level of Print Transform AFPxPCL, then you can skip this step.

6.1.7 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job AOKALLOC to allocate the SMP/E target and distribution libraries for Print Transform AFPxPCL. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: A return code of 0 should be received.

6.1.8 Allocate, create and mount ZFS File

Edit and submit sample job AOKALZFS job to perform the following tasks:

- Create the z/OS UNIX file system
- Create a mount point
- Mount the z/OS UNIX file system on the mount point

Consult the instructions in the sample job for more information.

The recommended z/OS UNIX file system type is *zFS*. The recommended mount point is */usr/lpp/IBM/PrintXform/V1R2*.

Before running the sample job to create the z/OS UNIX file system, you must ensure that OMVS is active on the driving system. zFS must be active on the driving system if you are installing Print Transform AFPxPCL into a file system that is zFS.

If you create a new file system for this product, consider updating the BPXPRMxx PARMLIB member to mount the new file system at IPL time. This action can be helpful if an IPL occurs before the installation is completed.

```
MOUNT FILESYSTEM('#dsn')
MOUNTPPOINT('/usr/lpp/IBM/PrintXform/V1R2')
MODE(RDRW) /* can be MODE(READ) */
TYPE(ZFS) PARM('AGGRGROW') /* zFS, with extents */
```

See the following information to update the statements in the previous sample:

- **#dsn** is the name of the data set holding the z/OS UNIX file system in which IBM Print Transform APFxPCL is installed.
- **/usr/lpp/IBM/PrintXform/V1R2** is the name of the mount point where the z/OS UNIX file system will be mounted.

Expected Return Codes and Messages: A return code of 0 should be received.

6.1.9 Allocate File System Paths

The target system file system data set must be mounted on the driving system when running the sample AOKMKJB2 job since the job will create paths in the file system.

Before running the sample job to create the paths in the file system, you must ensure that OMVS is active on the driving system and that the target system's file system is mounted to the driving system. zFS must be active on the driving system if you are installing Print Transform AFPxPCL into a file system that is zFS.

If you plan to install Print Transform AFPxPCL into a new file system, you must create the mountpoint and mount the new file system to the driving system for Print Transform AFPxPCL.

The recommended mountpoint is `/usr/lpp/IBM/PrintXform/V1R2`.

Edit and submit sample job AOKMKJB2 to allocate the file system paths for Print Transform AFPxPCL. Consult the instructions in the sample job for more information.

If you create a new file system for this product, consider updating the BPXPRMxx PARMLIB member to mount the new file system at IPL time. This action can be helpful if an IPL occurs before the installation is completed.

Expected Return Codes and Messages: A return code of 0 should be received.

6.1.10 Create DDDEF Entries

Edit and submit sample job AOKDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for Print Transform AFPxPCL. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: A return code of 4 should be received the first time this job is run (due to the 'REP' command) with the following messages.

```
GIM27701W DDDEF ENTRY XXXXXXXX DOES NOT EXIST. THE REPLACE  
OPERATION HAS BEEN CHANGED TO AN ADD.
```

6.1.11 Perform SMP/E APPLY

Perform an SMP/E APPLY CHECK for Print Transform AFPxPCL FMIDs HTFX120 and HTFX122.

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job AOKAPLY to perform an SMP/E APPLY CHECK for Print Transform AFPxPCL. Consult the instructions in the sample job for more information.

The latest HOLDDATA is available through several different portals, including <http://service.software.ibm.com/holdata/390holddata.html>. The latest HOLDDATA may identify HIPER and FIXCAT APARs for the FMIDs you will be installing. An APPLY CHECK will help you determine if any HIPER or FIXCAT APARs are applicable to the FMIDs you are installing. If there are any

applicable HIPER or FIXCAT APARs, the APPLY CHECK will also identify fixing PTFs that will resolve the APARs, if a fixing PTF is available.

You should install the FMIDs regardless of the status of unresolved HIPER or FIXCAT APARs. However, do not deploy the software until the unresolved HIPER and FIXCAT APARs have been analyzed to determine their applicability. That is, before deploying the software either ensure fixing PTFs are applied to resolve all HIPER or FIXCAT APARs, or ensure the problems reported by all HIPER or FIXCAT APARs are not applicable to your environment.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the PRE, ID, REQ, and IFREQ on the APPLY CHECK. The SMP/E root cause analysis identifies the cause only of *errors* and not of *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings, instead of errors).

Here are sample APPLY commands:

- a. To ensure that all recommended and critical service is installed with the FMIDs, receive the latest HOLDDATA and use the APPLY CHECK command as follows

```
APPLY S(fmid,fmid,...) CHECK
FORFMID(fmid,fmid,...)
SOURCEID(RSU*)
FIXCAT(IBM.ProductInstall-RequiredService)
GROUPEXTEND .
```

Some HIPER APARs might not have fixing PTFs available yet. You should analyze the symptom flags for the unresolved HIPER APARs to determine if the reported problem is applicable to your environment and if you should bypass the specific ERROR HOLDS in order to continue the installation of the FMIDs.

This method requires more initial research, but can provide resolution for all HIPERs that have fixing PTFs available and are not in a PE chain. Unresolved PEs or HIPERs might still exist and require the use of BYPASS.

- b. To install the FMIDs without regard for unresolved HIPER APARs, you can add the BYPASS(HOLDCLASS(HIPER)) operand to the APPLY CHECK command. This will allow you to install FMIDs even though one or more unresolved HIPER APARs exist. After the FMIDs are installed, use the SMP/E REPORT ERRSYSMODS command to identify unresolved HIPER APARs and any fixing PTFs.

```
APPLY S(fmid,fmid,...) CHECK
FORFMID(fmid,fmid,...)
SOURCEID(RSU*)
FIXCAT(IBM.ProductInstall-RequiredService)
GROUPEXTEND
BYPASS(HOLDCLASS(HIPER)) .
..any other parameters documented in the program directory
```

This method is the quicker, but requires subsequent review of the Exception SYSMOD report produced by the REPORT ERRSYSMODS command to investigate any unresolved HIPERs. If you have received the latest HOLDDATA, you can also choose to use the REPORT MISSINGFIX

command and specify Fix Category IBM.ProductInstall-RequiredService to investigate missing recommended service.

If you bypass HOLDS during the installation of the FMIDs because fixing PTFs are not yet available, you can be notified when the fixing PTFs are available by using the APAR Status Tracking (AST) function of ServiceLink or the APAR Tracking function of ResourceLink.

2. After you take actions that are indicated by the APPLY CHECK, remove the CHECK operand and run the job again to perform the APPLY.

Note: The GROUPEXTEND operand indicates that SMP/E applies all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages from APPLY CHECK: You will receive a return code of 0 if this job runs correctly.

Expected Return Codes and Messages from APPLY: You will receive a return code of 0 if this job runs correctly.

6.1.12 Perform SMP/E ACCEPT

Edit and submit sample job AOKACPT to perform an SMP/E ACCEPT CHECK for Print Transform AFPxPCL. Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the PRE, ID, REQ, and IFREQ on the ACCEPT CHECK. The SMP/E root cause analysis identifies the cause of only *errors* but not *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings rather than errors).

Before you use SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN indicator in the distribution zone. In this way, you can save the entries that are produced from JCLIN in the distribution zone whenever a SYSMOD that contains inline JCLIN is accepted. For more information about the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E Commands book for details.

After you take actions that are indicated by the ACCEPT CHECK, remove the CHECK operand and run the job again to perform the ACCEPT.

Note: The GROUPEXTEND operand indicates that SMP/E accepts all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages from ACCEPT CHECK: You will receive a return code of 0 if this job runs correctly.

If PTFs that contain replacement modules are accepted, SMP/E ACCEPT processing will link-edit or bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder might issue messages that indicate unresolved external references, which will result in a return code of 4 during the ACCEPT phase. You can ignore these messages, because the distribution libraries are not executable and the unresolved external references do not affect the executable system libraries.

Expected Return Codes and Messages from ACCEPT: You will receive a return code of 0 if this job runs correctly.

6.1.13 Run REPORT CROSSZONE

The SMP/E REPORT CROSSZONE command identifies requisites for products that are installed in separate zones. This command also creates APPLY and ACCEPT commands in the SMPPUNCH data set. You can use the APPLY and ACCEPT commands to install those cross-zone requisites that the SMP/E REPORT CROSSZONE command identifies.

After you install Print Transform AFPxPCL, it is recommended that you run REPORT CROSSZONE against the new or updated target and distribution zones. REPORT CROSSZONE requires a global zone with ZONEINDEX entries that describe all the target and distribution libraries to be reported on.

For more information about REPORT CROSSZONE, see the SMP/E manuals.

6.1.14 Cleaning Up Obsolete Data Sets and DDDEFs

Note: You need to run this sample cleanup job AOKCLNUP only if you are migrating from previous level of Print Transform products.

The following data sets and DDDEFs, which were allocated and used by previous release of Print Transform AFPxPCL, are no longer needed in this release. You can delete these obsolete data sets and DDDEFs after you delete the previous release from your system. Edit and submit sample job AOKCLNUP to remove the obsolete data sets and DDDEFs.

Figure 17. Data sets and DDDEFs that are deleted from previous level of Print Transform AFPxPCL

DDDEF	Data Set (High-Level qualifier are defaults)	DLIB or Target
AAOKJCL	AOK.AAOKJCL	DLIB
AAOKHFS	AOK.AAOKHFS	DLIB
SAOKBIN		Target
SAOKJCL	AOK.SAOKJCL	Target
SAOKLIB		Target
SAOKMAN		Target
SAOKSAM		Target

Note: SAOKBIN, SAOKLIB, SAOKMAN, and SAOKSAM are DDDEFs only, there are no actual paths in the file system that needed to be removed.

Expected Return Codes and Messages: A return code of 0 should be received.

6.2 Activating Print Transform AFPxPCL

The Transform Manager component of Infoprint Server is used to invoke the transform provided in Print Transform AFPxPCL. The publications *z/OS Infoprint Server Customization*, G544-5744, *z/OS Infoprint Server Operation and Administration*, S544-5745, and *IBM Transforms from AFP for Infoprint Server for z/OS*, G325-2634, contain the step-by-step procedures to activate the functions of Print Transform AFPxPCL.

6.2.1 File System Execution

If you mount the file system in which you have installed Print Transform AFPxPCL in read-only mode during execution, then complete the following tasks to activate Print Transform AFPxPCL.

6.2.2 Dynamic Enablement - Update Parmlib

To enable Print Transform AFPxPCL to run with z/OS, the following entries must be in the IFAPRDxx parmlib member:

```
PRODUCT OWNER('IBM CORP')
NAME('PRINT TRANSFORMS')
FEATURENAME('AFPxPCL')
VERSION(*) RELEASE(*) MOD(*)
ID(5655-TF2)
STATE(ENABLED)
```

6.2.3 Execute Installation Verification Procedures (IVPs)

The following IVP steps **MUST** be run in an OMVS or telnet/rlogin session from the target system after Print Transform file system is mounted. This includes executing a required one time post install step to establish symbolic links to Infoprint Server paths.

Step 1: Run aokcheck - This REXX EXEC checks the setup of From AFP Transforms V1R2. Run this script after you have successfully installed and customized Infoprint Server and the transform products. Review the results for any issues before moving to the next step.

Issue:

```
/usr/lpp/IBM/PrintXform/V1R2/samples/aokcheck
```

Step 2: Run aokbuildinfo - This script file executable provides information about product build and performs implicit validation of key transform parts.

Issue:

```
cd /usr/lpp/IBM/PrintXform/V1R2/samples
aokbuildinfo.sh -i /usr/lpp/IBM/PrintXform/V1R2
```

Step 3: Run aoksymlink - This script file executable establishes symbolic links from From AFP Transforms V1R2 into Infoprint Server paths. This one time setup is required and has to be performed after completing step 1 and 2 above and before using these products with Infoprint Server. Ensure you execute this script/job from a userid that has UID=0 permissions.

Issue:

```
cd /usr/lpp/IBM/PrintXform/V1R2/samples  
aoksymlink.sh -f slinks -i /usr/lpp/IBM/PrintXform/V1R2 -b /usr/lpp/Printsrv
```

6.2.4 Making Fonts Available

The AFP fonts referenced in the print files to be transformed must be in libraries configured for use by the Print Transform AFPxPCL. Common AFP fonts that can be used with the Print Transform AFPxPCL are listed in Figure 8 on page 11. The Print Transform AFPxPCL can use 240-dpi and 300-dpi raster or outline format fonts, to be used as input to transform. You should ensure that the raster font library (commonly named SYS1.FONT300) or outline font library (SYS1.SFNTLIB) is available to the transform. The transform converts any outline font to raster format for PCL output. z/OS Font Collection is provided as a base element with z/OS V2R1 or later.

6.3 Product Customization

The publication *IBM Transforms from AFP for Infoprint Server for z/OS* (G325-2634) contains the necessary information to customize and use the Print Transform AFPxPCL.

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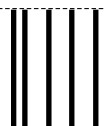
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