



**Program Directory for
IBM Sterling
Transformation Extender
for z/OS**

V11.0.3

Program Number 5655-RA2

FMID HDTXB03

for use with
z/OS V2.4 and higher (31-bit)
z/OS V2.5 and higher (64-bit)

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Note

Before using this information and the product it supports, be sure to read the general information under 7.0, “Notices” on page 23.

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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 Sterling Transformation Extender for z/OS. This publication refers to IBM Sterling Transformation Extender for z/OS as Transformation Extender.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic program materials and documentation for Transformation Extender.
- 3.0, “Program Support” on page 6 describes the IBM support available for Transformation Extender.
- 4.0, “Program and Service Level Information” on page 7 lists the APARs (program level) and PTFs (service level) that have been incorporated into Transformation Extender.
- 5.0, “Installation Requirements and Considerations” on page 8 identifies the resources and considerations that are required for installing and using Transformation Extender.
- 6.0, “Installation Instructions” on page 15 provides detailed installation instructions for Transformation Extender. It also describes the procedures for activating the functions of Transformation Extender, or refers to appropriate publications.

Before installing Transformation Extender, 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; after which, keep the documents for your reference. Section 3.2, “Preventive Service Planning” on page 6 tells you how to find any updates to the information and procedures in this program directory.

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

Do not use this program directory if you install Transformation Extender with a z/OSMF Portable Software Instance (z/OSMF Portable Software Instance (ServerPac)). When you use one of those offerings, use the jobs and documentation supplied with the offering. The offering will point you to specific sections of this program directory as needed.

1.1 Transformation Extender Description

Transformation Extender offers the following benefits:

Achieve complex data integration in transactional and operational environments across the enterprise.

Implement and re-use integration and business logic without low level coding.

Leverage the value of legacy systems in enterprise applications.

Meet project-based, enterprise-wide needs for transactional and operational integration.
 Comply with industry and regulatory standards for exchange of complex data.

1.2 Transformation Extender FMIDs

Transformation Extender consists of the following FMIDs:

HDTXB03

Figure 1. FMID descriptions

FMID	Description	Comment
HDTXB03	TRANS EXTENDER Z/OS	Contains the configuration, setup, and runtime components. Also contains: Transformation Extender for Appl. Programming Contains the configuration, setup, examples and runtime for the z/OS development kit, UNIX System Services development kit, and the IMS/TM and CICS execution environments. Transformation Extender with Command Server Contains the runtime and the examples for the Batch Command Server. Transformation Extender with Launcher Contains the configuration, setup, and runtime for the z/OS launcher. Transformation Extender for Integration Servers Contains the configuration, setup, and runtime for the ITX interfaces with IBM Integration Bus, IBM Business Process Manager, and IBM Business Process Manager Advanced.

2.0 Program Materials

An IBM program is identified by a program number. The program number for Transformation Extender is 5655-RA2.

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 Transformation Extender. 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 15 for more information about how to install the program.

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

Figure 2 describes the program file content for Transformation Extender. You can refer to the *CBPDO Memo To Users Extension* to see where the files reside on the image.

Notes:

1. The data set attributes in this table must be used in the JCL of jobs that read the data sets. However, because the data sets are in IEBCOPY unloaded format, their actual attributes might be different.
2. If any RELFILES are identified as PDSEs, ensure that SMPTLIB data sets are allocated as PDSEs.

Figure 2 (Page 1 of 2). Program File Content				
Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	8800
IBM.HDTXB03.F1	PDSE	VB	128	6144
IBM.HDTXB03.F2	PDSE	U	0	6144
IBM.HDTXB03.F3	PDSE	FB	80	8800
IBM.HDTXB03.F4	PDSE	U	0	6144
IBM.HDTXB03.F5	PDSE	VB	256	3860

Figure 2 (Page 2 of 2). Program File Content

Name	O R G	R E C F M	L R E C L	BLK SIZE
IBM.HDTXB03.F6	PDSE	VB	1024	31744

2.2 Program Publications

The following sections identify the basic publications for Transformation Extender.

Figure 3 identifies the basic unlicensed publications for Transformation Extender.

Figure 3 (Page 1 of 2). Basic Material: Unlicensed Publications

Publication Title	Direct Link
<i>Transformation Extender Agreements and License Information</i>	https://www.ibm.com/resources/publications
<i>Transformation Extender for z/OS Program Directory</i>	https://www.ibm.com/resources/publications
<i>Transformation Extender CICS Adapter</i>	https://www.ibm.com/docs/en/ste/11.0.3
<i>Transformation Extender Command Server</i>	https://www.ibm.com/docs/en/ste/11.0.3
<i>Transformation Extender DB2 (z/OS ODBC) Adapter</i>	https://www.ibm.com/docs/en/ste/11.0.3
<i>Transformation Extender DB2 (z/OS) Adapter</i>	https://www.ibm.com/docs/en/ste/11.0.3
<i>Transformation Extender Execution Commands</i>	https://www.ibm.com/docs/en/ste/11.0.3
<i>Transformation Extender FTP adapter</i>	https://www.ibm.com/docs/en/ste/11.0.3
<i>Transformation Extender Execution Commands</i>	https://www.ibm.com/docs/en/ste/11.0.3
<i>Transformation Extender IBM MQ Adapter</i>	https://www.ibm.com/docs/en/ste/11.0.3
<i>Transformation Extender IMS/DC Execution Option</i>	https://www.ibm.com/docs/en/ste/11.0.3

Figure 3 (Page 2 of 2). Basic Material: Unlicensed Publications

Publication Title	Direct Link
<i>Transformation Extender IBM MQ Launcher</i>	https://www.ibm.com/docs/en/ste/11.0.3
<i>Transformation Extender Performance Recommendations</i>	https://www.ibm.com/docs/en/ste/11.0.3
<i>Transformation Extender Platform API</i>	https://www.ibm.com/docs/en/ste/11.0.3
<i>Transformation Extender Utility Commands</i>	https://www.ibm.com/docs/en/ste/11.0.3
<i>Transformation Extender What's New</i>	https://www.ibm.com/docs/en/ste/11.0.3
<i>Transformation Extender z/OS Configuration Guide</i>	https://www.ibm.com/docs/en/ste/11.0.3

Note: These basic unlicensed publications can be found at **IBM Products documentation** <https://www.ibm.com/docs/en/products> and by direct link listed in the table.

2.3 Program Source Materials

No program source materials or viewable program listings are provided for Transformation Extender.

2.4 Publications Useful During Installation

You might want to use the publications listed in Figure 4 during the installation of Transformation Extender which can be found at **IBM Products documentation** <https://www.ibm.com/docs/en/products>.

Figure 4. Publications Useful During Installation

Publication
<i>IBM SMP/E for z/OS User's Guide</i>
<i>IBM SMP/E for z/OS Reference</i>
<i>IBM SMP/E for z/OS Commands</i>
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>

3.0 Program Support

This section describes the IBM support available for Transformation Extender.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install Transformation Extender, make sure that you review the PSP bucket information for IBM Z products document <https://www.ibm.com/support/pages/node/7127792>. It contains the latest information concerning the installation of IBM products, including the latest service recommendations and cross-product dependencies. This information was previously available in traditional PSP buckets, which are no longer published for IBM Z products.

For support, access the Software Support Website at <https://www.ibm.com/mysupport/>

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 5 identifies the component IDs (COMPID) for Transformation Extender.

<i>Figure 5. Component IDs</i>			
FMID	COMPID	Component Name	Release
HDTXB03	5655RA200	TRANS EXTENDER Z/OS	B03

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of Transformation Extender. 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 Transformation Extender have been incorporated into this release. They are listed by FMID.

- FMID HDTXB03

PH71597	PH70088	PH68903
PH71354	PH70006	PH68601
PH71288	PH69976	PH68500
PH71174	PH69892	PH68245
PH71035	PH69812	PH68108
PH70889	PH69793	PH68011
PH70857	PH69690	PH67788
PH70832	PH69610	PH67482
PH70831	PH69513	PH67443
PH70541	PH69500	PH67338
PH70485	PH69328	PH67104
PH70358	PH69233	
PH70333		

4.2 Service Level Information

No PTFs against this release of Transformation Extender have been incorporated into the product package.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating Transformation Extender. 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 Transformation Extender.

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 6. 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	02.05.00	N/A	No

Note: SMP/E is a requirement for Installation and is an element of z/OS.

Note: Installation might require migration to new z/OS releases to be service supported. See <https://www.ibm.com/support/lifecycle/>

5.2 Target System Requirements

This section describes the environment of the target system required to install and use Transformation Extender.

Transformation Extender 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. These products are specified as PREs or REQs.

Transformation Extender has no mandatory installation requisites.

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.

Transformation Extender 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.

Transformation Extender has no mandatory operational requisites.

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. These products are specified as IF REQs.

Figure 7. Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
Integration Server function:		
5724-J05	IBM App Connect Enterprise 12.0.0	Integration Server feature
Any one of the following:		
5655-Y04	CICS Transaction Server for z/OS 5.6.0 or higher	CICS
5722-DFJ	CICS TS Value Edition for 5.6.0 or higher	CICS
Any one of the following:		
5635-A06	IMS 15.2.0 or higher	IMS support
Any one of the following:		
5655-MQ9	IBM MQ for z/OS 9.2.0 or higher	MQ support
USS Support:		
5650-ZOS	z/OS 2.5.0 or later	Unix System Services must be active
Any one of the following:		
5770-AF3	DB2 12.1.0 for z/OS VUE or higher	DB2
5650-DB2	DB2 12.1.0 for z/OS Enterprise Edition or higher	DB2
Java Support:		
5655-UA1	IBM Semeru Runtime Certified Edition for z/OS 17.0	Java

Note: Installation might require migration to new releases to obtain support. See <https://www.ibm.com/support/lifecycle/>

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.

Transformation Extender 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.

Transformation Extender has no negative requisites.

5.2.3 DASD Storage Requirements

Transformation Extender libraries can reside on all supported DASD types.

Figure 8 lists the total space that is required for each type of library.

Figure 8. Total DASD Space Required by Transformation Extender		
Library Type	Total Space Required in 3390 Trks	Description
Target	4,300	Total space required by Target data sets
Distribution	9,200	Total space required by Distribution data sets
File System(s)	/usr/lpp/dtx/V11R0M3	zFS file system

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 6.1.6, "Allocate SMP/E Target and Distribution Libraries" on page 17.

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, with some exceptions. If the value in the "ORG" column specifies "PDS", the data set must be a PDS. If the value in "DIR Blks" column specifies "N/A", the data set must be 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 not be in the LPA, with some exceptions. If the data set should be placed in the LPA, see the Special Considerations section below.
- These data sets can be in the LNKLIST. If so, see the Special Considerations section below.
- These data sets are not required to be APF-authorized, with some exceptions. If the data set must be APF-authorized, see the Special Considerations section below.

Figure 9. 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
SMPMTS	E	PDS	FB	80	150	50
SMPPTS	E	PDSE	FB	80	20000	-
SMPSCDS	E	PDS	FB	80	150	50
SMPSTS	E	PDS	FB	80	150	50

The following figures describe the target and distribution libraries and file system paths required to install Transformation Extender. The storage requirements of Transformation Extender 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 10. Storage Requirements for Transformation Extender 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
SDTXCLST	Sample	TVOL2	U	PDSE	FB	80	1	-
SDTXCNFG	Sample	TVOL2	U	PDSE	VB	1024	1	-
SDTXLOAD	LMOD	TVOL1	U	PDSE	U	0	1900	-
SDTXLOD2	LMOD	TVOL1	U	PDSE	U	0	800	-
SDTXMAPS	Sample	TVOL2	U	PDSE	VB	256	10	-
SDTXPENU	Sample	TVOL2	U	PDSE	FB	80	5	-
SDTXSAMP	Sample	TVOL2	U	PDSE	FB	80	40	-
SGTXLOAD	LMOD	TVOL1	U	PDSE	U	0	1400	-

Figure 11. Transformation Extender File System Paths

DDNAME	T Y P E	Path Name
SDTXHFS	N	/usr/lpp/dtx/V11R0M3/IBM

Figure 12. Storage Requirements for Transformation Extender 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
ADTXCLST	U	PDSE	FB	80	1	-
ADTXCNFG	U	PDSE	VB	1024	1	-
ADTXHFS	U	PDSE	VB	256	5000	-
ADTXLOAD	U	PDSE	U	0	1900	-
ADTXLOD2	U	PDSE	U	0	800	-
ADTXMAPS	U	PDSE	VB	256	10	-
ADTXPENU	U	PDSE	FB	80	5	-
ADTXSAMP	U	PDSE	FB	80	40	-
AGTXLOAD	U	PDSE	U	0	1400	-

The following figures list data sets that are not used by SMP/E, but are required for Transformation Extender to run.

5.3 FMIDs Deleted

Installing Transformation Extender might result in the deletion of other FMIDs. To see which FMIDs will be deleted, examine the ++VER statement in the SMPMCS of the product.

If you do not want to delete these FMIDs at this time, install Transformation Extender into separate SMP/E target and distribution zones.

Note: These FMIDs are not automatically deleted from the Global Zone. If you want to delete these FMIDs from the Global Zone, use the SMP/E REJECT NOFMID DELETEFMID command. See the SMP/E Commands book for details.

5.4 Special Considerations

Transformation Extender has no special considerations for the target system.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of Transformation Extender.

Please note the following points:

- If you want to install Transformation Extender 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 Transformation Extender

6.1.1 SMP/E Considerations for Installing Transformation Extender

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of Transformation Extender.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 13. 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 13. SMP/E Options Subentry Values</i>		
Subentry	Value	Comment
DSSPACE	(1000,500,100)	Specifies the primary and secondary (in Tracks) and the number of directory blocks to be allocated for each SMPTLIB dataset.
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install Transformation Extender:

Figure 14. Sample Installation Jobs

Job Name	Job Type	Description	SMPTLIB Data Set
DTXSMPE (Optional)	DEFINE SMP/E	Sample job to create SMP/E environment	IBM.HDTXB03.F3
DTXRECVE	RECEIVE	Sample RECEIVE job	IBM.HDTXB03.F3
DTXALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HDTXB03.F3
DTXISMKD	MKDIR	Sample job to invoke the supplied DTXMKDIR EXEC to allocate file system paths	IBM.HDTXB03.F3
DTXDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HDTXB03.F3
DTXAPPLY	APPLY	Sample APPLY job	IBM.HDTXB03.F3
DTXACCP	ACCEPT	Sample ACCEPT job	IBM.HDTXB03.F3

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.5, “Perform SMP/E RECEIVE” on page 17) then copy the jobs from the SMPTLIB data sets to a work data set for editing and submission. See Figure 14 on page 15 to find the appropriate data set.

You can also copy the sample installation jobs from the product files by submitting the following job. Before you submit the job, add a job card and change the lowercase parameters to uppercase values to meet the requirements of your site.

```
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//IN DD DSN=IBM.HDTXB03.F3,UNIT=SYSALLDA,DISP=SHR,
// VOL=SER=filevol
//OUT DD DSNAME=jcl-library-name,
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=dasdvol,UNIT=SYSALLDA,
// SPACE=(TRK,(10,5,10))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
COPY INDD=IN,OUTDD=OUT
/*
```

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

IN:

filevol is the volume serial of the DASD device where the downloaded files reside.

OUT:

jcl-library-name is the name of the output data set where the sample jobs are stored.

dasdvol is the volume serial of the DASD device where the output data set resides.

6.1.4 Allocate and Initialize the SMP/E Data Sets (Optional)

You can install Transformation Extender in the same SMP/E zone as z/OS V2.4 (or later), or in a different zone.

- If you install into existing SMP/E data sets, ensure that you have enough space.
- If you plan to install into an existing zone, the cluster should have already been allocated and primed. You can go on to the next step to perform an SMP/E RECEIVE.
- To install into a new zone (recommended), edit and submit sample job DTXSMPE to define and prime a new SMP/E CSI cluster. Consult the instructions in the sample job for more information.

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

6.1.5 Perform SMP/E RECEIVE

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

You can also choose to edit and submit sample job DTXRECVE to perform the SMP/E RECEIVE for Transformation Extender. Consult the instructions in the sample job for more information.

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

Note: Please note that if the installation data sets have been loaded to a cataloged data set with an HLQ other than IBM.HDTXB03, then the SMP/E RECEIVE SELECT command must change the HLQ by specifying the RFPREFIX(hlq) parameter as below:

```
RECEIVE SELECT(HDTXB03) RFPREFIX(hlq) .
```

6.1.6 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job DTXALLOC to allocate the SMP/E target and distribution libraries for Transformation Extender. Consult the instructions in the sample job for more information.

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

6.1.7 Allocate File System Paths

The target system zFS data set must be mounted on the driving system when running the sample DTXISMKD 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 zFS file system is mounted to the driving system. zFS must be active on the driving system.

If you plan to install Transformation Extender into a new zFS file system, you must create the mountpoint and mount the new file system to the driving system for Transformation Extender.

The recommended mountpoint is `/usr/lpp/dtx/V11R0M3`.

Edit and submit sample job DTXISMKD to allocate the file system paths for Transformation Extender. 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: You will receive a return code of 0 if this job runs correctly.

6.1.8 Create DDDEF Entries

If you choose to install Transformation Extender V11.0.3 in the **SAME** Target Zone as prior releases (lower and all features), you must run a Dummy Delete job to delete the prior release before you run the new DTXDDDEF job. Failure to delete the prior release will cause an abend on the APPLY if installed in the same Zone. Otherwise, install Transformation Extender in a new Target Zone and continue to the DTXDDDEF job.

Provided is a partial example of code to accomplish the delete. It is not intended to be run as-is. The prior release in this instance is HDTXB02. If you have other releases or features installed/applied you will need to run the dummy delete for all. Once you have successfully deleted the prior version, you can continue to the DTXDDDEF job.

```
++FUNCTION(DUMMY01).  
++VER (Z038)  
  DELETE(HDTXB02).  
//SMPCNTL DD *  
  SET BDY(GLOBAL).  
  RECEIVE S(DUMMY01).  
  SET BDY(TZONE).  
  APPLY S(DUMMY01) REDO.  
  SET BDY(DZONE).  
  ACCEPT S(DUMMY01) BYPASS(APPLYCHECK) REDO .  
  SET BDY(TZONE).
```

```

UCLIN.
DEL SYSMOD(HDTXB02).
DEL SYSMOD(DUMMY01).
ENDUCL.
SET BDY(DZONE).
UCLIN.
DEL SYSMOD(HDTXB02).
DEL SYSMOD(DUMMY01).
ENDUCL.
/*

```

Edit and submit sample job DTXDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for Transformation Extender. Consult the instructions in the sample job for more information.

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

6.1.9 Perform SMP/E APPLY

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

The latest HOLDDATA is available through several different portals, including <https://public.dhe.ibm.com/s390/assigns/> or <https://www.ibm.com/support/pages/enhanced-holddata-zos> for usage instructions. 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 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.

6.1.10 Perform SMP/E ACCEPT

Edit and submit sample job DTXACCEPT to perform an SMP/E ACCEPT CHECK for Transformation Extender. 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 *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.

6.1.11 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 Transformation Extender, 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.

6.2 Activating Transformation Extender

6.2.1 File System Execution

If you mount the file system in which you have installed Transformation Extender in read-only mode during execution, then you do not have to take further actions to activate Transformation Extender.

6.3 Product Customization

The publication *IBM Sterling Transformation Extender for z/OS Configuration Guide* contains the necessary information to customize and use Transformation Extender.

7.0 Notices

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APAR numbers are provided in this document to assist in locating PTFs that may be required. Ongoing problem reporting may result in additional APARs being created. Therefore, the APAR lists in this document may not be complete. To obtain current service recommendations and to identify current product service requirements, always refer to the instructions in the **Service Recommendation Summary and Service Recommendations** and **Cross Product Dependencies** sections of the **PSP bucket information for IBM Z products** at <https://www.ibm.com/support/pages/node/7127792>, to ensure you have all required service.

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