IBM

Program Directory for

IBM IMS DataPropagator for z/OS

V03.01.00

Program Number 5655-E52

FMID H25T310

for Use with
z/OS

Document Date: July 2008

GI10-8402-02

Contents

Figures

Notices

References in this document to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only IBM's product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe on any of IBM's intellectual property rights may be used instead of the IBM product, program, or service. Evaluation and verification of operation in conjunction with other products, except those expressly designated by IBM, is the user's responsibility.

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 contact the IBM Customer Support Center or use S/390 SoftwareXcel to obtain the current "PSP Bucket".

IBM may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to the

> IBM Director of Licensing
> IBM Corporation
> North Castle Drive
> Armonk, New York 10504-1785
> USA

For online versions of this book, we authorize you to:

- Copy, modify, and print the documentation contained on the media, for use within your enterprise, provided you reproduce the copyright notice, all warning statements, and other required statements on each copy or partial copy.

- Transfer the original unaltered copy of the documentation when you transfer the related IBM product (which may be either machines you own, or programs, if the program's license terms permit a transfer). You must, at the same time, destroy all other copies of the documentation.

You are responsible for payment of any taxes, including personal property taxes, resulting from this authorization.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Some jurisdictions do not allow the exclusion of implied warranties, so the above exclusion may not apply to you.

Your failure to comply with the terms above terminates this authorization. Upon termination, you must destroy your machine readable documentation.

Trademarks

The following terms are trademarks of the IBM Corporation in the United States or other countries or both:

CBPDO	IMS
IBM®	SystemPac®
OS/390®	ServerPac®
S/390®	MQSeries®
z/OS	AS/400®
DB2®	AIX®
DB2 Universal Database	

The following terms are trademarks of other companies as follows:

Oracle	Oracle Corporation
Sybase	Sybase, Inc.

1.0 Introduction

This program directory is intended for the system programmer responsible for program installation and maintenance. It contains information concerning the material and procedures associated with the installation of IBM IMS DataPropagator for z/OS. This publication refers to IBM IMS DataPropagator for z/OS as IMS DataPropagator. You should read all of this program directory before installing the program and then keep it for future reference.

The program directory contains the following sections:

- 2.0, "Program Materials" on page 4 identifies the basic and optional program materials and documentation for IMS DataPropagator.
- 3.0, "Program Support" on page 8 describes the IBM support available for IMS DataPropagator.
- 4.0, "Program and Service Level Information" on page 10 lists the APARs (program level) and PTFs (service level) incorporated into IMS DataPropagator.
- 5.0, "Installation Requirements and Considerations" on page 11 identifies the resources and considerations for installing and using IMS DataPropagator.
- 6.0, "Installation Instructions" on page 17 provides detailed installation instructions for IMS DataPropagator. It also describes the procedures for activating the functions of IMS DataPropagator, or refers to appropriate publications.

Before installing IMS DataPropagator, read 3.2, "Preventive Service Planning" on page 8. This section tells you how to find any updates to the information and procedures in this program directory.

Do not use this program directory if you are installing IMS DataPropagator with a SystemPac or ServerPac. When using these offerings, use the jobs and documentation supplied with the offering. This documentation may point you to specific sections of the program directory as required.

If you are installing IMS DataPropagator using the Custom-Built Product Delivery Offering (CBPDO, 5751-CS3), a softcopy program directory is provided on the CBPDO tape which is identical to the printed copy shipped with your order. Your CBPDO contains a softcopy preventive service planning (PSP) upgrade for this product. All service and HOLDDATA for IMS DataPropagator are included on the CBPDO tape.

1.1 IMS DataPropagator Description

IMS DataPropagator for z/OS, V3.1 supports an additional method of propagation of IMS DB changes; an MQSeries-based, asynchronous **near real time** propagation. With this method:

- A new IMS-DPROP Capture Component captures the IMS database changes (the Source DBs) performed by IMS Batch, IMS BMP, and IMS TM application programs.

- A new IMS-DPROP Apply Component transforms the IMS DB changes into relational format and applies the changes to the DB2 tables (the target tables). The transformation of the IMS data into relational format is based, as in previous IMS DPROP releases, on mapping definitions provided by the database administrators. The DB2 target tables can be on the same or on different systems from the IMS DBs.

- The transmission of the DB changes from the Capture to the Target Component is via the recoverable, buffered and queued asynchronous messaging services of MQSeries.

When the teleprocessing connections between source and target systems software are not overloaded, the elapsed time between the IMS DB updates and the DB2 table updates can often be as short as a couple of seconds. With IMS DataPropagator, V3.1 an up-to-date copy of IMS data in DB2 tables for new DB2-based applications is possible.

In addition to a near real time propagation, the new MQSeries-based asynchronous propagation also supports a point-in-time propagation. With point-in-time propagation, the content of the DB2 target tables reflect some clearly identified logical point-in-times of the IMS source databases, for example, the logical end of a business day, the logical end of a business month, or the end of a specific IMS batch/BMP jobstream. Point-in-time propagation is typically used to propagate to data warehouses or decision support systems that subset of data that does not need to be propagated within seconds.

The new IMS DataPropagator exploits the well established, first-class, high-performance, extremely reliable, queued messaging services of the MQSeries Software. Use of the familar MQSeries Software allows enterprises to leverage their MQSeries Administration and Operations skills.

Performance is an important design criteria for DataPropagator. Examples of performance features are:

- Multiple IMS database changes are transmitted within the same MQSeries message
- The MQSeries message data is compressed
- The efficient caching services of the Virtual Lookaside Facility (VLF) of z/OS is exploited

By using both IMS DataPropagator and DB2 DataPropagator you can propagate your IMS database changes to all the relational database management systems on all the platforms that are supported by the apply programs of the DB2 DataPropagator. This is achieved by using:

- IMS DataPropagator to propagate the IMS database changes to DB2 staging tables
- DB2 DataPropagator apply programs to propagate the staging tables to the relational database management systems and platforms supported by DB2 DataPropagator which include:
  - DB2 Universal Database for AS/400
  - DB2 Universal Database for AIX
  - DB2 Universal Database for HP-UX
  - DB2 Universal Database for Linux
  - DB2 Universal Database for Sun Solaris
  - DB2 Universal Database for Windows
  - DB2 Universal Database for z/OS
  - Oracle, SQL Server, Informix, and Sybase on a wide varity of platforms

IMS DataPropagator, V3.1 continues to support:

- Asynchronous propagation of changed IMS data to DB2 on z/OS based on the reading of the IMS archive logs. With this method, the elapsed time between the IMS database update and the DB2 table update is typically at least 30 minutes.

- Synchronous propagation of changed:

  - IMS data to DB2 on z/OS
  - DB2 data on z/OS to IMS

  With this method the IMS databases and the DB2 tables must be on the same system. Because the propagation is synchronous, the elapsed time of the database update operations of the application programs increases by the time required to propagate the changes to the target database management system. Whether or not this elapsed time increase is acceptable depends on the rate of propagated database updates.

1.2 IMS DataPropagator FMID

IMS DataPropagator consists of the following FMID:

H25T310

2.0 Program Materials

An IBM program is identified by a program number and a feature number. The program number for IMS DataPropagator is 5655-E52 and its feature number is 5802.

Basic Machine-Readable Materials are materials that are supplied under the base license and feature code, and are required for the use of the product. Optional Machine-Readable Materials are orderable under separate feature codes, and are not required for the product to function.

The program announcement material describes the features supported by IMS DataPropagator. 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 magnetic tape or downloadable files. It is installed using SMP/E, and is in SMP/E RELFILE format. See 6.0, "Installation Instructions" on page 17 for more information about how to install the program.

Figure 1 describes the file content.

Notes:

1. The data set attributes in these tables should be used in the JCL of jobs reading the data sets, but since the data sets are in IEBCOPY unloaded format, their actual attributes may be different.

2. You are installing IMS DataPropagator using the Custom-Built Product Delivery Offering (CBPDO) (5751-CS3), and information about your tape can be found in the CBPDO documentation that came with your order.

3. If any RELFILEs are identified as PDSEs, ensure that SMPTLIB data sets are allocated as PDSEs.

Figure 1 (Page 1 of 2). Program File Content				
Name	**ORG**	**RECFM**	**LRECL**	**BLK SIZE**
SMPMCS	SEQ	FB	80	6400
IBM.H25T310.F1	PDS	FB	80	8800
IBM.H25T310.F2	PDS	FB	80	8800
IBM.H25T310.F3	PDS	U	0	6144
IBM.H25T310.F4	PDS	FB	80	8800
IBM.H25T310.F5	PDS	FB	80	8800

Figure 1 (Page 2 of 2). Program File Content				
Name	ORG	RECFM	LRECL	BLK SIZE
IBM.H25T310.F6	PDS	FB	80	8800
IBM.H25T310.F7	PDS	FB	80	8800
IBM.H25T310.F8	PDS	FB	80	8800
IBM.H25T310.F9	PDS	FB	80	8800
IBM.H25T310.F10	PDS	FB	80	8800
IBM.H25T310.F11	PDS	FB	80	8800
IBM.H25T310.F12	PDS	FB	80	8800

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for IMS DataPropagator.

2.3 Program Publications

The following sections identify the basic and optional publications for IMS DataPropagator.

2.3.1 Basic Program Publications

Figure 2 identifies the basic unlicensed program publications for IMS DataPropagator. One copy of each of these publications is included when you order the basic materials for IMS DataPropagator. For additional copies, contact your IBM representative.

Figure 2. Basic Material: Unlicensed Publications	
Publication Title	Form Number
IMS DataPropagator for z/OS License Information	GC27-1201

Figure 3 identifies the basic unlicensed or licensed publications that are not available in hardcopy form, but are available through the internet or other media for IMS DataPropagator.

Figure 3. Basic Material: Other Unlicensed or Licensed Publications		
Publication Title	**Form Number**	**How Available**
IMS DataPropagator for z/OS Installation Guide	GC27-1212	http://www.ibm.com/software/data/db2imstools/library.html
IMS DataPropagator for z/OS Administrators Guide for Log Asynchronous Propagation	SC27-1216	http://www.ibm.com/software/data/db2imstools/library.html
IMS DataPropagator for z/OS Administrators Guide for MQSeries Asynchronous Propagation	SC27-1217	http://www.ibm.com/software/data/db2imstools/library.html
IMS DataPropagator for z/OS Administrators Guide for Synchronous Propagation	SC27-1215	http://www.ibm.com/software/data/db2imstools/library.html
IMS DataPropagator for z/OS An Introduction	GC27-1211	http://www.ibm.com/software/data/db2imstools/library.html
IMS DataPropagator for z/OS Concepts	SC27-1544	http://www.ibm.com/software/data/db2imstools/library.html
IMS DataPropagator for z/OS Customization Guide	SC27-1214	http://www.ibm.com/software/data/db2imstools/library.html
IMS DataPropagator for z/OS Diagnosis	GC27-1209	http://www.ibm.com/software/data/db2imstools/library.html
IMS DataPropagator for z/OS Messages and Codes	GC27-1213	http://www.ibm.com/software/data/db2imstools/library.html
IMS DataPropagator for z/OS Reference	SC27-1210	http://www.ibm.com/software/data/db2imstools/library.html

Publications are available in PDF and BookManager formats on CD-ROM and on DVD on the next release of software product libraries:

- *z/OS Software Products Collection, SK3T-4270*
- *z/OS and Software Products DVD Collection, SK3T-4271**
  *requires a DVD drive in DVD-9 (single-sided, dual-layer) format

2.3.2 Optional Program Publications

No optional publications are provided for IMS DataPropagator.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for IMS DataPropagator.

2.5 Publications Useful During Installation

The publications listed in Figure 4 may be useful during the installation of IMS DataPropagator. To order copies, contact your IBM representative or visit the IBM Publications Center on the World Wide Web at: http://www.ibm.com/shop/publications/order

Figure 4. Publications Useful During Installation	
Publication Title	**Form Number**
IBM SMP/E for z/OS User's Guide	SA22-7773
IBM SMP/E for z/OS Commands	SA22-7771
IBM SMP/E for z/OS Reference	SA22-7772
IBM SMP/E for z/OS Messages, Codes, and Diagnosis	GA22-7770

3.0 Program Support

This section describes the IBM support available for IMS DataPropagator.

3.1 Program Services

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

3.2 Preventive Service Planning

Before installing IMS DataPropagator, it is VERY IMPORTANT that you review the current Preventive Service Planning (PSP) information. The PSP buckets maintain current lists (which have been identified since the package was created) of any recommended or required service for this package's installation. This includes software PSP information that contains HIPER, and/or required PTFs against the base release.

While there can be overlap between software, hardware, and functional PSP buckets, reviewing all that apply to this package will ensure that you identify any known service required for your installation of this package.

If you obtained IMS DataPropagator as part of a CBPDO, there is HOLDDATA included on the PDO.

If the CBPDO for IMS DataPropagator is more than two weeks old when you install it, you should contact the IBM Support Center, use S/390 SoftwareXcel to obtain the current "PSP Bucket" or obtain the current PSP from the Web at https://techsupport.services.ibm.com/server/390.psp390

For program support, access the Software Support Web site at http://www-3.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 IMS DataPropagator are:

Figure 5. PSP Upgrade and Subset ID		
UPGRADE	**SUBSET**	**Description**
5655E52	H25T310	IMS DataPropagator

3.3 Statement of Support Procedures

Report any difficulties you have using this program to your IBM Support Center. If an APAR is required, the Support Center will provide the address to which any needed documentation can be sent.

Figure 6 on page 9 identifies the component IDs (COMPID) for IMS DataPropagator.

Figure 6. Component IDs			
FMID	**COMPID**	**Component Name**	**RETAIN Release**
H25T310	5655E5200	IMS DataPropagator	310

4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of IMS DataPropagator. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs integrated.

4.1 Program Level Information

The following APAR fixes against previous releases of IMS DataPropagator have been incorporated into this release. They are:

PQ00455	PQ10406	PQ30876
PQ01090	PQ11070	PQ31277
PQ01437	PQ11101	PQ33018
PQ01644	PQ11274	PQ33399
PQ01748	PQ13261	PQ33860
PQ01995	PQ13437	PQ34707
PQ02006	PQ15287	PQ35132
PQ02413	PQ16449	PQ35286
PQ02414	PQ16598	PQ35296
PQ02434	PQ16715	PQ35399
PQ02753	PQ18599	PQ35597
PQ02968	PQ18851	PQ36937
PQ03045	PQ18878	PQ38472
PQ03716	PQ20221	PQ38514
PQ04356	PQ21975	PQ39672
PQ05187	PQ23898	PQ39775
PQ05505	PQ24131	PQ40012
PQ06060	PQ24158	PQ41999
PQ06075	PQ24734	PQ42024
PQ06404	PQ24921	PQ43529
PQ07105	PQ24941	PQ43623
PQ07741	PQ28266	PQ46106
PQ08049	PQ30011	PQ48165
PQ09060	PQ30286	PQ48677
PQ09409	PQ30299	PQ52111

4.2 Service Level Information

No PTFs against this release of IMS DataPropagator have been incorporated into the product tape.

Over time it is HIGHLY recommended that you frequently check the IMS DataPropagator PSP bucket for HIPER and SPECIAL Attention PTFs against all FMIDs which should be installed.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating IMS DataPropagator. The following terminology is used:

- *Driving system*: the system used to install the program.

- *Target system*: the system on which the program is installed.

In many cases, the same system can be used as both a driving system and a target system. However, you may want to set up a clone of your system to use as a target system by making a separate IPL-able copy of the running system. The clone should 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.

Some cases where two systems should be used include the following:

- When installing a new level of a product that is already installed, the new product will delete the old one. By installing onto a separate target system, you can test the new product while still keeping the old one in production.

- When installing a product that shares libraries or load modules with other products, the installation can disrupt the other products. Installing onto a test system or clone will allow you to 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 IMS DataPropagator.

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 7. Driving System Software Requirements	
Program Number	**Product Name and Minimum VRM/Service Level**
Any **one** of the following:	
5694-A01	z/OS V01.07.00 or later
5655-G44	SMP/E for z/OS V03.04.00 or later

11

5.2 Target System Requirements

This section describes the environment of the target system required to install and use IMS DataPropagator.

IMS DataPropagator installs in the DBS (P115) 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 Mandatory Requisites: A mandatory requisite is defined as a product that is required without exception; this product either **will not install** or **will not function** unless this requisite is met. This includes products that are specified as REQs or PREs.

Program Number	Product Name and Minimum VRM/Service Level
Figure 8. Mandatory Requisites	
Any **one** of the following:	
5655-C56	IMS V08.01.00
5655-J38	IMS V09.01.00
5635-A01	IMS V10.01.00

5.2.2.2 Functional Requisites: A functional requisite is defined as a product that is **not** required for the successful installation of this product or for the basic function of the product, but **is** needed at run time for a specific function of this product to work. This includes products that are specified as IF REQs.

Program Number	Product Name and Minimum VRM/Service Level	Function
Figure 9 (Page 1 of 2). Functional Requisites		
5696-234	IBM High Level Assembler Version 1 Release 2	Synchronous, asynchronous, asynchronous MQSeries Based Propagation
Any **one** of the following:		
5655-L82	WebSphere MQ for z/OS, V06.00.00	Asynchronous MQSeries Based Propagation
5655-R36	WebSphere MQ for z/OS, V07.00.00*	Asynchronous MQSeries Based Propagation

Figure 9 (Page 2 of 2). Functional Requisites		
Program Number	**Product Name and Minimum VRM/Service Level**	**Function**
Any **one** of the following:		
5625-DB2	IBM DB2 UDB for z/OS, V08.01.00	Synchronous, asynchronous, asynchronous MQSeries Based Propagation
5635-DB2	IBM DB2 V09.01.00 for z/OS	Synchronous, asynchronous, asynchronous MQSeries Based Propagation

*Note: WebSphere MQ for z/OS, V07.00.00 requires, z/OS V01.08.00 and DB2 UDB V08.01.00.

5.2.2.3 Toleration/Coexistence Requisites: A toleration/coexistence requisite is defined as a product which must be present on a sharing system. 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 at different time intervals.

IMS DataPropagator has no toleration/coexistence requisites.

5.2.2.4 Incompatibility (Negative) Requisites: A negative requisite identifies products which must *not* be installed on the same system as this product.

IMS DataPropagator has no negative requisites.

5.2.3 DASD Storage Requirements

IMS DataPropagator libraries can reside on all supported DASD types.

Figure 10 lists the total space required for each type of library.

Figure 10. Total DASD Space Required by IMS DataPropagator	
Library Type	**Total Space Required**
Target	2160 Tracks
Distribution	3360 Tracks

Notes:

1. IBM recommends use of system determined block sizes for efficient DASD utilization for all non-RECFM U data sets. For RECFM U data sets, IBM recommends a block size of 32760, which is the most efficient from a performance and DASD utilization perspective.

2. Abbreviations used for the data set type are:

U   Unique data set, allocated by this product and used only by this product. To determine the correct storage needed for this data set, this table provides all required information; no other tables (or program directories) need to be referenced for the data set size.

S   Shared data set, allocated by this product and used by this product and others. To determine the correct storage needed for this data set, the storage size given in this table needs to be added to 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 others. This data set is NOT allocated by this product. To determine the correct storage needed for this data set, the storage size given in this table needs to be added to other tables (perhaps in other program directories). This existing data set 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 one and reclaim the space used by the old release and any service that had been installed. You can determine whether or not 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 on the names and sizes of the required data sets, please refer to 6.1.7, "Allocate SMP/E Target and Distribution Libraries" on page 20.

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

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

4. All target libraries listed have the following attributes:

- The data set may be SMS managed
- It is not required for the data set to be SMS managed
- It is not required for the data set to reside on the IPL volume
- The values in the "Member Type" column are not necessarily the actual SMP/E element types identified in the SMPMCS.

5. All target libraries listed which contain load modules have the following attributes:

- The data set may be in the LPA
- It is not required for the data set to be in the LPA
- The data set may be in the LNKLST
- EKYRESLB needs to be APF authorized.

The following figures describe the target and distribution libraries required to install IMS DataPropagator. The storage requirements of IMS DataPropagator must be added to the storage required by other programs having data in the same library.

Note: The data in these tables should be used when determining 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.

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

Figure 11. Storage Requirements for IMS DataPropagator 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
SEKYBASE	SAMP	Any	U	PDS	FB	80	4	10
EKYRESLB	LMOD	Any	U	PDS	U	0	192	200
SEKYMAC	MACRO	Any	U	PDS	FB	80	36	10
SEKYSRC	SAMPLE	Any	U	PDS	FB	80	51	20
SEKYSAMP	SAMPLE	Any	U	PDS	FB	80	8	5
SEKYDBRM	MACRO	Any	U	PDS	FB	80	31	20
SEKYSKEL	SKELETON	Any	U	PDS	FB	80	3	5
SEKYPENG	PANEL	Any	U	PDS	FB	80	76	40
SEKYMENG	MESSAGE	Any	U	PDS	FB	80	8	10
SEKYSLIB	MACRO	Any	U	PDS	FB	80	51	20
SEKYCLIB	CLIST	Any	U	PDS	FB	80	64	25

Figure 12. Storage Requirements for IMS DataPropagator 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
AEKYBASE	U	PDS	FB	80	4	10
AEKYLOAD	U	PDS	U	0	342	200
AEKYMAC	U	PDS	FB	80	36	10
AEKYSRC	U	PDS	FB	80	51	20
AEKYSAMP	U	PDS	FB	80	8	5
AEKYDBRM	U	PDS	FB	80	31	20
AEKYSKEL	U	PDS	FB	80	3	5
AEKYPENG	U	PDS	FB	80	76	40
AEKYMENG	U	PDS	FB	80	8	10
AEKYSLIB	U	PDS	FB	80	51	20
AEKYCLIB	U	PDS	FB	80	64	25

5.3 FMIDs Deleted

Installing IMS DataPropagator may result in the deletion of other FMIDs. To see what FMIDs will be deleted, examine the ++VER statement in the product's SMPMCS.

If you do not wish to delete these FMIDs at this time, you must install IMS DataPropagator into separate SMP/E target and distribution zones.

Note: These FMIDs will not automatically be deleted from the Global Zone. Consult the SMP/E manuals for instructions on how to do this.

5.4 Special Considerations

IMS DataPropagator 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 IMS DataPropagator.

Please note the following:

- If you want to install IMS DataPropagator 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.

- Sample jobs have been provided to help perform some or all of the installation tasks. The SMP/E jobs assume that all DDDEF entries required for SMP/E execution have been defined in the appropriate zones.

- The SMP/E dialogs may be used instead of the sample jobs to accomplish the SMP/E installation steps.

6.1 Installing IMS DataPropagator

6.1.1 SMP/E Considerations for Installing IMS DataPropagator

This release of IMS DataPropagator is installed using the SMP/E RECEIVE, APPLY, and ACCEPT commands. The SMP/E dialogs may be used to accomplish the SMP/E installation steps.

6.1.2 SMP/E Options Subentry Values

The recommended values for some SMP/E CSI subentries are shown in Figure 13. Use of values lower than these may result in failures in the installation process. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. Refer to the SMP/E manuals for instructions on updating the global zone.

SUB-ENTRY	Value	Comment
DSSPACE	(500,500,500)	3390 DASD tracks
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

Figure 13. SMP/E Options Subentry Values

6.1.3 Sample Jobs

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

Job Name	Job Type	Description	RELFILE
EKYALA	SMP/E	Sample job to allocate and initalize a new SMP/E CSI data set **(Optional)**	IBM.H25T310.F2
EKYALB	SMP/E	Sample job to allocate SMP/E data sets **(Optional)**	IBM.H25T310.F2
EKYRECEV	RECEIVE	Sample RECEIVE job	IBM.H25T310.F2
EKYALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.H25T310.F2
EKYDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.H25T310.F2
EKYAPPLY	APPLY	Sample APPLY job	IBM.H25T310.F2
EKYACCEP	ACCEPT	Sample ACCEPT job	IBM.H25T310.F2
EKYSMPLK	Customize	Link external language interface	IBM.H25T310.F2

Figure 14. Sample Installation Jobs

You may copy the jobs from the tape or product files by submitting the job below. Use either the //TAPEIN or the //FILEIN DD statement, depending on your distribution medium, and comment out or delete the other statement. Add a job card and change the lowercase parameters to uppercase values to meet your site's requirements before submitting.

```
//STEP1     EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//***********************************************************
//* Make the //TAPEIN DD statement below active if you install*
//* from a CBPDO tape by uncommenting the DD statement below. *
//***********************************************************
//*TAPEIN   DD DSN=IBM.H25T310.F2,UNIT=tunit,
//*         VOL=SER=volser,LABEL=(7,SL),
//*         DISP=(OLD,KEEP)
//***********************************************************
//* Make the //TAPEIN DD statement below active if you install*
//* from a product tape received outside the CBPDO process   *
//* (using the optional SMP/E RECEIVE job) by uncommenting    *
//* the DD statement below.                                   *
//***********************************************************
//*TAPEIN   DD DSN=IBM.H25T310.F2,UNIT=tunit,
//*         VOL=SER=25T310,LABEL=(3,SL),
//*         DISP=(OLD,KEEP)
//***********************************************************
//* Make the //FILEIN DD statement below active for          *
//* downloaded DASD files.                                   *
//***********************************************************
//*FILEIN   DD DSN=IBM.H25T310.F2,UNIT=SYSALLDA,DISP=SHR,
//*          VOL=SER=filevol
//OUT       DD DSNAME=jcl-library-name,
//          DISP=(NEW,CATLG,DELETE),
```

```
//         VOL=SER=dasdvol,UNIT=SYSALLDA,
//         SPACE=(TRK,(10,5,5))
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN    DD *
   COPY INDD=indd,OUTDD=OUT
   SELECT MEMBER=(EKYALA,EKYALB,EKYALLOC,EKYSMPLK)
   SELECT MEMBER=(EKYDDDEF,EKYRECEV,EKYAPPLY,EKYACCEP)
/*
```

where **tunit** is the unit value matching the product tape, **volser** is the volume serial which is described in the CBPDO documentation, **filevol** is the volume serial of the DASD device where the downloaded files reside, **jcl-library-name** is the name of the output data set where the sample jobs will be stored, **dasdvol** is the volume serial of the DASD device where the output data set will reside, and **indd** is the DD name (TAPEIN or FILEIN) of the input data set.

6.1.4 Allocate SMP/E CSI (Optional)

If you are using an existing CSI, do not execute this job.

If you are allocating a new SMP/E data set for this install, edit, and submit sample job EKYALA to allocate the SMP/E data set for IMS DataPropagator.

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

6.1.5 Initialize CSI zones (Optional)

Edit and submit sample job EKYALB to initialize SMP/E zones for IMS DataPropagator. 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.

6.1.6 Perform SMP/E RECEIVE

Having obtained IMS DataPropagator as part of a CBPDO, use the RCVPDO job found in the CBPDO RIMLIB data set to RECEIVE the IMS DataPropagator FMIDs as well as any service, HOLDDATA, included on the CBPDO tape. For more information, refer to the documentation included with the CBPDO.

- You can also choose to edit and submit sample job EKYRECEV to perform the SMP/E RECEIVE for IMS DataPropagator. Consult the instructions in the sample job for more information.

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

6.1.7 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job EKYALLOC to allocate the SMP/E target and distribution libraries for IMS DataPropagator. 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.

6.1.8 Create DDDEF Entries

Edit and submit sample job EKYDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for IMS DataPropagator. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will get a condition code of 0 if the jobs run correctly.

6.1.9 Perform SMP/E APPLY

 1. Ensure you have the latest Enhanced HOLDDATA, then edit and submit sample job EKYAPPLY to perform an SMP/E APPLY CHECK for IMS DataPropagator. Consult the instructions in the sample job for more information.

    Enhanced HOLDDATA introduces ERROR HOLDs against FMIDs for HIPER APARs. Prior to installing, you should ensure you have the latest Enhanced HOLDDATA (available at url http://service.software.ibm.com/holdata/390holddata.html). The FMID(s) should be installed regardless of the status of unresolved HIPERs, however, the software should not be deployed until the unresolved HIPERs have been analyzed to determine applicability.

    To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the following on the APPLY CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

    There are two methods to complete an FMID installation where ++HOLDs for HIPERs exist for the FMID(s) being installed:

    a. To ensure that all recommended and critical service is installed with the FMID(s), add the SOURCEIDs of PRP, HIPER, and RSU* to the APPLY command. There may be PE or HIPER APARs that do not have resolving PTFs available yet. You need to analyze the symptom flags to determine if you want to BYPASS the specific ERROR HOLDs and continue the FMID installation.

    ```
    APPLY S(fmid,fmid,...)
    FORFMID(fmid,fmid,...)
    SOURCEID(PRP,HIPER,RSU*,...)
    GROUPEXTEND .
    ```

    This method requires more initial research, but will provide resolution for all HIPERs that have fixes available and are not in a PE chain. There may still be unresolved PEs or HIPERs that will require the use of BYPASS.

    b. To install the FMID(s) as it would have been installed prior to Enhanced HOLDDATA, you can add a BYPASS(HOLDCLASS(HIPER)) operand to the APPLY command. This will allow the FMID to

be installed even though there are HIPER ERROR HOLDs against it. Note that not all ERROR
HOLDs were bypassed, only the HIPER ERROR HOLDs. After the FMID(s) are installed, the
SMP/E REPORT ERRSYSMODS command should be run to identify any missing HIPER
maintenance.

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

This method is the quicker of the two, but requires subsequent review of the REPORT
ERRSYSMODS to investigate any HIPERs.

If you bypass any HOLDs during the installation of the FMID(s) because fixing PTFs were not yet
available you can use the APAR Status Tracking (AST) function of ServiceLink or the APAR
Tracking function of ResourceLink to be notified when the fixing PTF is available.

2. After you have taken any actions 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 apply 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: This job should complete with a return code
4 or less, and may issue any of the following messages which do not affect product installation:
GIM23913W, IEW2646W, and IEW2454W.

6.1.10 Perform SMP/E ACCEPT

Edit and submit sample job EKYACCEP to perform an SMP/E ACCEPT CHECK for IMS DataPropagator.
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 following
on the ACCEPT CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis
identifies the cause only of **ERRORS** and not of **WARNINGS** (SYSMODs that are bypassed are treated
as warnings, not errors, by SMP/E).

Before using SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN
indicator in the distribution zone. This will cause entries produced from JCLIN to be saved in the
distribution zone whenever a SYSMOD containing inline JCLIN is ACCEPTed. For more information on
the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E manuals.

Once you have taken any actions 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 accept all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages from ACCEPT CHECK: You will get a condition code of 0 if the jobs run correctly.

Expected Return Codes and Messages from ACCEPT: You will get a condition code of 0 if the jobs run correctly.

If PTFs containing replacement modules are being ACCEPTed, SMP/E ACCEPT processing will linkedit/bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder may issue messages documenting unresolved external references, resulting in a return code of 4 from the ACCEPT step. These messages can be ignored, because the distribution libraries are not executable and the unresolved external references will not affect the executable system libraries.

6.2 Customizing SMP/E LINK Process

This step is mandatory for IMS DataPropagator.

Modify and run job **EKYSMPLK** to link-edit external language interface modules into the appropriate IMS DataPropagator load modules using SMP/E Version 2 Release 6 LINK processing.

EKYSMPLK performs the following functions:

- For each DPROP load module requiring a module from another product, the LINK command is used to specify the source zone of the module.

- The link editor steps are divided into four distinct job steps, one or more of which will be applicable to your installation, depending on the chosen DPROP features as detailed below:

CHOSEN PROPAGATION FEATURES	EKYSMPLK JOB STEPS REQUIRED
Receiver, Selector and Synchronous	LKEDIMS, LKEDDB2, LKEDSYNC and LKEDRCVR.
Receiver and Selector Only	LKEDIMS, LKEDDB2 and LKEDRCVR.
Receiver and Synchronous Only	LKEDIMS, LKEDDB2, LKEDSYNC and LKEDRCVR.
Selector and Synchronous Only	LKEDIMS, LKEDDB2 and LKEDSYNC.
Receiver Only	LKEDDB2 and LKEDRCVR.
Selector Only (No DB2)	LKEDIMS.
Selector Only (With DB2)	LKEDIMS and LKEDDB2.
Synchronous Only	LKEDIMS, LKEDDB2 and LKEDSYNC.

Change the following as required:

- IMSTZON, DB2TZON, MQSTZON and MVSTZON should be changed to match the names of the IMS/ESA*, DB2*, MQSeries and MVS Target zones respectively, as indexed in your GLOBAL zone. If these Target zones are not currently referenced in the GLOBAL zone you are using for installation of IMS DataPropagator, use the REP GLOBALZONE statement to reference the Target zone.

CAUTION:
Use of the REP GLOBALZONE statement will replace all of the existing current zone entries.
To ensure that these are not lost, issue the LIST GLOBALZONE statement to list your current
zones.

The following is an example of the use of the LIST GLOBALZONE statement:

```
SET    BOUNDARY (GLOBAL).
         LIST GLOBALZONE .
```

The following is an example of the use of the REP GLOBALZONE statement:

```
SET BDY(GLOBAL).     /* ADD THE GLOBAL ZONE DESCRIPTION */
 UCLIN.
  REP GLOBALZONE
   ZONEINDEX (
       (TARGLIB,smp.lib.csi,TARGET)
       (DISTLIB,smp.lib.csi,DLIB)
       (IMSTZON,smp.lib.csi,TARGET)
       (IMSDZON,smp.lib.csi,DLIB)
       (DB2TZON,smp.lib.csi,TARGET)
       (DB2DZON,smp.lib.csi,DLIB)
       (MQSTZON,smp.lib.csi,TARGET)
       (MQSDZON,smp.lib.csi,DLIB)
       (MVSTZON,smp.lib.csi,TARGET)
       (MVSTZON,smp.lib.csi,DLIB)
        )
 .
 ENDUCL.
```

were "smp.lib.csi" is the CSI containing the indicated zone and where there is an entry for every
existing and additional target or distribution zone in the GLOBAL zone.

• The names of the DPROP zones should only be changed if the default names were not used in the
  SMP/E initialization step.

• Disable any job steps not required by changing PGM=GIMSMP to PGM=IEFBR14 on the EXEC card
  of that job step.

Expected Return Codes and Messages: IEW2481W or IEW0241 will be issued when SMP/E linking
EKYN010X (DSNHLI) and EKYH020X(DSNWLI).

6.3 Activating IMS DataPropagator

The publication *IMS DataPropagator Installation Guide, GC27-1212* contains the necessary information to
customize and use IMS DataPropagator.

Reader's Comments

Program Directory for IBM IMS DataPropagator for z/OS July 2008

You may use this form to comment about this document, its organization, or subject matter with the understanding that IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you.

For each of the topics below please indicate your satisfaction level by circling your choice from the rating scale. If a statement does not apply, please circle N.

```
┌─ RATING SCALE ──────────────────────────────────────────────
   very                              very         not
 satisfied  <=====================>  dissatisfied  applicable
    1        2        3        4        5             N
└──────────────────────────────────────────────────────────────
```

	Satisfaction					
Ease of product installation	1	2	3	4	5	N
Contents of program directory	1	2	3	4	5	N
Installation Verification Programs	1	2	3	4	5	N
Time to install the product	1	2	3	4	5	N
Readability and organization of program directory tasks	1	2	3	4	5	N
Necessity of all installation tasks	1	2	3	4	5	N
Accuracy of the definition of the installation tasks	1	2	3	4	5	N
Technical level of the installation tasks	1	2	3	4	5	N
Ease of getting the system into production after installation	1	2	3	4	5	N

How did you order this product?

___ CBPDO
___ CustomPac
___ ServerPac
___ Independent
___ Other

Is this the first time your organization has installed this product?

___ Yes
___ No

Were the people who did the installation experienced with the installation of z/OS products?

___ Yes

___   No

If yes, how many years? __

If you have any comments to make about your ratings above, or any other aspect of the product installation, please list them below:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Please provide the following contact information:

_____

Name and Job Title

_____

Organization

_____

Address

_____

Telephone

Thank you for your participation.

Please send the completed form to (or give to your IBM representative who will forward it to the IBM IMS DataPropagator for z/OS Development group):

International Business Machines Corporation
Reader's Comments
Department DTX/E269
555 Bailey Avenue
San Jose, California
USA
95141-9989

E-Mail: comments@us.ibm.com

IBM

Printed in U.S.A.