



**Program Directory for
Information Management System
(IMS)
Transaction and Database Servers**

15.04.00

Program Number 5635-A06

FMIDs HMK1500 JMK1501 JMK1502 JMK1503 JMK1506 HIR2230

for Use with
z/OS 2.04.00 or higher

Service Updated PDO 2313

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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 35.

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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 IMS Transaction and Database Servers, 15.04.00. This publication refers to IBM IMS Transaction and Database Servers, 15.04.00 as IMS V15.04.00.

The Program Directory contains the following sections:

- 2.0, "Program Materials" on page 4 identifies the basic program materials and documentation for IMS V15.04.00.
- 3.0, "Program Support" on page 9 describes the IBM support available for IMS V15.04.00.
- 4.0, "Program and Service Level Information" on page 11 lists the APARs (program level) and PTFs (service level) that have been incorporated into IMS V15.04.00.
- 5.0, "Installation Requirements and Considerations" on page 12 identifies the resources and considerations that are required for installing and using IMS V15.04.00.
- 6.0, "Installation Instructions" on page 24 provides detailed installation instructions for IMS V15.04.00. It also describes the procedures for activating the functions of IMS V15.04.00, or refers to appropriate publications.

Before installing IMS V15.04.00, 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 9 tells you how to find any updates to the information and procedures in this program directory.

IMS V15.04.00 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 IMS V15.04.00 are included on the CBPDO.

Do not use this program directory if you install IMS V15.04.00 with a ServerPac. When you use the ServerPac offering, use the jobs and documentation supplied with the offering. The offering will point you to specific sections of this program directory as needed.

Note: If you have an earlier IMS V15 release installed (continuous delivery) and wish to migrate from this earlier release, do not use this program directory or product and see the "Migrating from an earlier IMS 15 release" section in the *IMS 15.4 Release Planning Guide* at the following URL:
<https://www.ibm.com/docs/en/ims/15.4.0?topic=154-migrating-from-earlier-ims-15-release>

1.1 IMS V15.04.00 Description

IBM IMS 15.4 is the latest release of the data server and transaction manager continually transforms in response to shifting market forces, as it has done for over 50 years. Enterprise industries worldwide are in the midst of unprecedented change, driven by the transformative impact of digital business. Doing digital business on IMS gives you the means to support existing clients, deliver new services and offerings, and promote the innovation required to meet the emerging needs of what lies beyond today's digital business era. To find out how IMS 15.4 can help you achieve these objectives, see the announcement letter for your region:

223-022	IBM Americas - United States
LP23-0024	IBM Americas - Latin America (Exclude Cuba - Embargoed)
A23-0036	IBM Americas - Canada
JP23-0024	IBM Japan
ZP23-0024	IBM Europe, Middle East and Africa (Exclude Iran, Islamic Republic of (Embargoed), Russian Federation (Embargoed), Syrian Arab Republic (Embargoed), the Crimea, Donetsk, and Luthansk regions of Ukraine (Embargoed)
AP23-0021	IBM Asia Pacific (Exclude Korea, Democratic People's Republic of - Embargoed)

1.2 IMS V15.04.00 FMIDs

IMS V15.04.00 consists of the following FMIDs:

- HMK1500 (System Services)
- JMK1501 (Database Manager)
- JMK1502 (Transaction Manager)
- JMK1503 (Extended Terminal Option)
- JMK1506 (Java on Demand Feature)
- HIR2230 (IRLM 2.3)

Figure 1 (Page 1 of 2). FMIDs for IMS V15.04.00

FMID and Description	DB Batch	DBCTL	DB/DC	DCCTL
HMK1500 1 (System Services)	R	R	R	R
JMK1501 (Database Manager)	R	R	R	N
JMK1502 (Transaction Manager)	N	N	R	R
JMK1503 (Extended Terminal Option)	N	N	O	O
JMK1506 (Java On Demand feature)	N	O	O	O

Figure 1 (Page 2 of 2). FMIDs for IMS V15.04.00

FMID and Description	DB Batch	DBCTL	DB/DC	DCCTL
HIR2230/2233 (IRLM 2.3)	O	O	O	N

Where:

- R** FMID installation is required.
- O** FMID installation is optional.
- N** The FMID is not applicable to this environment.

Notes:

1. FMID installation is required even if the primary function provided by this FMID is not used.

NOTE!

IMS TM Resource Adapter is a component of the Java On Demand feature, FMID JMK1506.

IMS Connect is a component in the system services FMID HMK1500.

The IMS Universal Drivers are components of the Java On Demand feature, FMID JMK1506.

2.0 Program Materials

An IBM program is identified by a program number. The program number for IMS V15.04.00 is 5635-A06.

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 IMS V15.04.00. 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 24 for more information about how to install the program.

You can find information about the physical media for the basic machine-readable materials for IMS V15.04.00 in the *CBPDO Memo To Users Extension*.

Figure 2 describes the program file content for IMS V15.04.00. 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 for HMK1500 - IMS 15 System Services

Name	ORG	RECFM	RECL	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.HMK1500.F1	PDSE	FB	80	8800
IBM.HMK1500.F2	PDSE	FB	80	8800
IBM.HMK1500.F3	PDSE	FB	80	8800
IBM.HMK1500.F4	PDSE	FB	80	8800
IBM.HMK1500.F5	PDSE	FB	80	8800
IBM.HMK1500.F6	PDSE	FB	80	8800

Figure 2 (Page 2 of 2). Program File Content for HMK1500 - IMS 15 System Services

Name	O R G	R E C F M	L R E C L	BLK SIZE
IBM.HMK1500.F7	PDSE	FB	80	8800
IBM.HMK1500.F8	PDSE	FB	80	8800
IBM.HMK1500.F9	PDSE	FB	80	8800
IBM.HMK1500.F10	PDSE	U	0	6144
IBM.HMK1500.F11	PDSE	FB	80	8800
IBM.HMK1500.F12	PDSE	FB	80	8800
IBM.HMK1500.F13	PDSE	FB	80	8800
IBM.HMK1500.F14	PDSE	FB	80	8800
IBM.HMK1500.F15	PDSE	FB	80	8800
IBM.HMK1500.F16	PDSE	FB	80	8800

Figure 3. Program File Content for JMK1501 - IMS 15 Database Manager

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.JMK1501.F1	PDSE	FB	80	8800
IBM.JMK1501.F2	PDSE	FB	80	8800
IBM.JMK1501.F3	PDSE	FB	80	8800
IBM.JMK1501.F4	PDSE	U	0	6144
IBM.JMK1501.F5	PDSE	FB	80	8800

Figure 4 (Page 1 of 2). Program File Content for JMK1502 - IMS 15 Transaction Manager

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.JMK1502.F1	PDSE	FB	80	8800

Figure 4 (Page 2 of 2). Program File Content for JMK1502 - IMS 15 Transaction Manager

Name	O R G	R E C F M	L R E C L	BLK SIZE
IBM.JMK1502.F2	PDSE	FB	80	8800
IBM.JMK1502.F3	PDSE	FB	80	8800
IBM.JMK1502.F4	PDSE	U	0	6144
IBM.JMK1502.F5	PDSE	FB	80	8800

Figure 5. Program File Content for JMK1503 - IMS 15 Extended Terminal Option

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.JMK1503.F1	PDSE	FB	80	8800
IBM.JMK1503.F2	PDSE	U	0	6144

Figure 6. Program File Content for JMK1506 - IMS 15 Java On Demand feature

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.JMK1506.F1	PDSE	FB	80	8800
IBM.JMK1506.F2	PDSE	VB	255	6160
IBM.JMK1506.F3	PDSE	FB	80	8800
IBM.JMK1506.F4	PDSE	U	0	6144
IBM.JMK1506.F5	PDSE	VB	255	6160
IBM.JMK1506.F6	PDSE	VB	255	6160
IBM.JMK1506.F7	PDSE	VB	255	6160
IBM.JMK1506.F8	PDSE	VB	255	6160

Figure 7. Program File Content for HIR2230 - IRLM 2.3

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.HIR2230.F1	PDS	FB	80	8800
IBM.HIR2230.F2	PDS	U	0	6144
IBM.HIR2230.F3	PDS	FB	80	8800

2.2 Program Publications

The following sections identify the basic publications for IMS V15.04.00.

The product documentation for IMS V15.04.00 is available in IBM Documentation at:
<https://www.ibm.com/docs/ims/15.4.0>

Figure 8 identifies the basic licensed publications for IMS V15.04.00. Those that are in softcopy format publications can be obtained from the IBM Publications Center website at
<https://www.ibm.com/resources/publications> or at the IMS V15.04.00 documentation site as listed above.

Figure 8. Basic Material: Licensed Publications

Publication Title	Form Number	Media Format
<i>IMS V15.04.00 Licensed Program Specifications</i>	GC27-6799-03	https://www.ibm.com/resources/publications
<i>IMS V15.04.00 for z/OS Program Directory</i>	GI13-4614-07	https://www.ibm.com/resources/publications

No optional publications are provided for IMS V15.04.00.

2.3 Program Source Materials

No program source materials or viewable program listings are provided for IMS V15.04.00.

2.4 Publications Useful During Installation

You might want to use the publications listed in Figure 9 on page 8 during the installation of IMS V15.04.00.

<i>Figure 9. Publications Useful During Installation</i>	
Publication Title	Form Number
<i>IBM SMP/E for z/OS User's Guide</i>	SA23-2277
<i>IBM SMP/E for z/OS Commands</i>	SA23-2275
<i>IBM SMP/E for z/OS Reference</i>	SA23-2276
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA32-0883

These publications can be found in IBM Documentation. Use a web browser with internet access to refer to: <https://www.ibm.com/docs/en/zos/2.5.0?topic=zos-smpe>

3.0 Program Support

This section describes the IBM support available for IMS V15.04.00.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install IMS V15.04.00, 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 6.1.12, "Perform SMP/E APPLY" on page 30 for a sample APPLY command

If you obtained IMS V15.04.00 as part of a CBPDO, HOLDDATA is included.

If the CBPDO for IMS V15.04.00 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:

<https://www.ibm.com/support/pages/ibmsearch>

To find your IMS V15.04.00 PSP Bucket type '**subset HMK1500/2313**' in the search box.

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.ibm.com/mysupport/>.

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 V15.04.00 are included in Figure 10.

Figure 10 (Page 1 of 2). PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
IMS1540	HMK1500/2313	IMS V15.04.00 System Services
IMS1540	JMK1501/2313	IMS V15.04.00 Database Manager
IMS1540	JMK1502/2313	IMS V15.04.00 Transaction Manager

Figure 10 (Page 2 of 2). PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
IMS1540	JMK1503/2313	IMS V15.04.00 Extended Terminal Option
IMS1540	JMK1506/2313	IMS V15.04.00 Java On Demand feature
IMS1540	HIR2230/2233	Internal Resource Lock Manager (IRLM) 2.3

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 11 identifies the component IDs (COMPID) for IMS V15.04.00.

Figure 11. Component IDs

FMID	COMPID	Component Name	RETAIN Release
HMK1500	5635A0600	System Services	500
JMK1501	5635A0600	Database Manager	501
JMK1502	5635A0600	Transaction Manager	502
JMK1503	5635A0600	Extended Terminal Option	503
JMK1506	5635A0600	IMS Java On Demand feature	506
HIR2230	569516401	Internal Resource Lock Manager 2.03.00	230

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of IMS V15.04.00. 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

Refer to the PSP Facility for IMS V15.04.00 APAR information.

4.2 Service Level Information

PTFs containing APAR fixes against this release of IMS V15.04.00 have been incorporated into this product package. For a list of included PTFs, examine the ++VER statement in the product's SMPMCS.

Frequently check the IMS V15.04.00 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-REQUIRESERVICE)** 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 IMS V15.04.00. 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 IMS V15.04.00.

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 12. 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	02.04.00	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 obtain support. 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 IMS V15.04.00.

IMS V15.04.00 installs in the DBS (P115) SREL.

5.2.1 Machine Requirements

Although the target system can run in any hardware environment that supports the required software, IMS V15.04.00 operates on IBM System zEC12 or higher processors capable of running z/OS V2.4.0, or later.

IMS 15.4 is the last IMS release that supports running on an IBM System zEC12 or zBC12.

Sysplex data sharing (including data caching and VSO data sharing) with Internal Resource Lock Manager (IRLM) 2.3 requires a coupling facility level 18 or later. Shared queues, shared-EMH support require a coupling facility level 18 or later. OM Audit Trail requires a coupling facility level of 18 or later if a coupling facility log stream is used. Repository Server Audit Log requires a coupling facility level of 18 or later if a coupling facility log stream is used. Resource Manager (RM) requires a coupling facility level of 18 or later if a resource structure is used.

IMS 15.4 was the last IMS release that supports coupling facility levels associated with IBM zEC12 and zBC12 processor types (CF levels 18 through 19).

When the Multiple Systems Coupling (MSC) physical link is channel-to-channel and is dedicated to IMS, MSC requires the System/370 CTC adapter or a logical channel on the IBM 3088, ESCON, or fiber channel connection (FICON). MSC FICON CTC support requires that at least one IMS system be installed on an IBM zSeries machine with the FICON channel and FICON CTC microcode. The other side (IMS) can be any processor with a FICON channel.

Database Image Copy Fast Replication support requires the fast replication feature of DFSMS, which requires either the FlashCopy feature of the IBM Enterprise Storage Server (ESS), or the Snapshot feature

of the IBMRAMAC Virtual Array (RVA) storage system. For all other system libraries and working storage space, any device supported by the operating system is allowed.

For detailed information on hardware requirements for IMS Version 15 refer to the Hardware Requirements section in IMS Version 15 Release Planning. See at the following URL:
https://www.ibm.com/docs/SSEPH2_15.4.0/com.ibm.ims154.doc.rpg/ims_hhrdr.htm

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.

IMS V15.04.00 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.

IMS V15.04.00 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.

Figure 13. Target System Mandatory Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level
5650-ZOS	z/OS 2.04.00 or higher
5696-234	High Level Assembler Toolkit 1.06.00 or higher, a separately orderable feature of z/OS

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

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.

<i>Figure 14 (Page 1 of 4). Target System Conditional Operational Requisites</i>		
Program Number	Product Name and Minimum VRM/Service Level	Function
5635-A06	Internal Resource Lock Manager (IRLM), 2.3 or higher	To take advantage of the IMS data sharing function.
5650-ZOS	z/OS 2.04.00 or higher Security Server (includes RACF) or equivalent.	Security. SecureWay Security Server for z/OS is a separately orderable feature of z/OS.
5650-ZOS	z/OS 2.04.00 or higher DFSMS Transactional VSAM Services (DFSMSStvs)	To take advantage of parallel access to the DBRC RECON data set. DFSMSStvs is a separately orderable feature of z/OS.
5650-ZOS	z/OS 2.04.00 or higher DFSMS	To be able to use zEnterprise Data Compression (zEDC).
5650-ZOS	z/OS 2.04.00 or higher at APAR level OA57570 and OA57633	To enable optional data privacy for diagnostic function
5650-ZOS	z/OS 2.04.00 or higher at APAR level OA57165	To enable optional zWIC function
5650-ZOS	z/OS 2.04.00 or higher at APAR level OA60688	To enable optional data set encryption function
5724-T07	IBM Developer for z Systems 15.00.00 or higher	To take advantage of IMS Connect XML Adapter support. For web services, use with IMS Enterprise Suite SOAP Gateway or Web 2.0 applications that access IMS transactions.
5655-MQ9	IBM MQ for z/OS 9.01.05 or higher	To run IMS transactions using the Open Transaction Manager Access (OTMA), through the MQ-IMS bridge. To use the application MQGET/MQPUT interface to attach to IMS via the External Subsystem Attach Facility (ESAF).
5655-TDA	IBM IMS Enterprise Suite, V3.2 or higher	SOAP Gateway to support the IMS callout function. JMS API to issue synchronous callout request from JBP or JMP address spaces.

Figure 14 (Page 2 of 4). Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5655-EC6	IBM Enterprise COBOL for z/OS 6.02.00	Application programming support. Java-COBOL interoperation. IMS Native SQL Support for COBOL.
5655-PL5	IBM Enterprise PL/I for z/OS 05.03.00 or higher	Application programming support Java-PL/I interoperation.
5655-W65	IBM WebSphere Application Server for z/OS 8.5 or higher	IMS Universal JDBC driver runtime for access to IMS databases from WebSphere-hosted application programs. IMS TM Resource Adapter runtime support for WebSphere Application Server for z/OS.
5724-J08	IBM WebSphere Application Server for Distributed Systems, V8.5 or higher	IMS TM Resource Adapter runtime support for WebSphere Application Server for distributed platforms.
Any one of the following:		
5655-DGG	IBM SDK, Java Technology Edition 8.0.0 or higher 31-bit	Support for Java application programs that run in a standalone Java Standard Edition (SE) runtime using the IMS Universal JDBC driver or the IMS Universal DL/I driver.
5655-DGH	IBM SDK, Java Technology Edition 8.0.0 or higher 64-bit	Support for Java application programs that run in a standalone Java Standard Edition (SE) runtime using the IMS Universal JDBC driver or the IMS Universal DL/I driver.
Any one of the following:		
5650-DB2	IBM DB2 for z/OS 12.01.00	IMS-DB2 Interoperability. Access to IMS DB using the IMS Universal JDBC driver or the IMS Universal DL/I driver for DB2 for z/OS stored procedures. IMS V15.04.00 connection to DB2 using subsystem routine communication.

Figure 14 (Page 3 of 4). Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5770-AF3	IBM DB2 for z/OS Value Unit Edition 12.01.00	<p>IMS-DB2 Interoperability.</p> <p>Access to IMS DB using the IMS Universal JDBC driver or the IMS Universal DL/I driver for DB2 for z/OS stored procedures.</p> <p>IMS V15.04.00 connection to DB2 using subsystem routine communication.</p>
5698-DB2	IBM DB2 for z/OS 13.01.00	<p>IMS-DB2 Interoperability.</p> <p>Access to IMS DB using the IMS Universal JDBC driver or the IMS Universal DL/I driver for DB2 for z/OS stored procedures.</p> <p>IMS V15.04.00 connection to DB2 using subsystem routine communication.</p>
5698-DBV	IBM DB2 for z/OS Value Unit Edition 13.01.00	<p>IMS-DB2 Interoperability.</p> <p>Access to IMS DB using the IMS Universal JDBC driver or the IMS Universal DL/I driver for DB2 for z/OS stored procedures.</p> <p>IMS V15.04.00 connection to DB2 using subsystem routine communication.</p>
Any one of the following:		
5655-Y04	IBM CICS Transaction Server for z/OS 5.04.00 or higher	<p>IMS DB connection to CICS using the IMS Database Resource Adapter (DRA).</p> <p>IMS V15.04.00 TM connected to CICS using Intersystem Communication (ISC).</p> <p>Access to IMS DB using the IMS Universal JDBC driver or the IMS Universal DL/I driver for CICS.</p> <p>Support the CICS open transaction environment (threadsafe).</p> <p>ISC TCP/IP function.</p>

Figure 14 (Page 4 of 4). Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5722-DFJ	IBM CICS Transaction Server for z/OS Value Unit Edition 5.04.00 or higher	<p>IMS DB connection to CICS using the IMS Database Resource Adapter (DRA).</p> <p>IMS V15.04.00 TM connected to CICS using Intersystem Communication (ISC).</p> <p>Access to IMS DB using the IMS Universal JDBC driver or the IMS Universal DL/I driver for CICS.</p> <p>Support the CICS open transaction environment (threadsafe).</p> <p>ISC TCP/IP function.</p>
Any one of the following:		
5635-A04	IBM IMS 13.01.00	<p>IMS V15.04.00 TM connected to an IBM IMS 13.01.00 using Intersystem Communication support (ISC).</p> <p>IMS V15.04.00 TM connected to an IBM IMS 13.01.00 using Multiple Systems Coupling support (MSC).</p>
5635-A05	IBM IMS 14.01.00	<p>IMS V15.04.00 TM connected to an IBM IMS 14.01.00 using Intersystem Communication support (ISC).</p> <p>IMS V15.04.00 TM connected to an IBM IMS 14.01.00 using Multiple Systems Coupling support (MSC).</p>

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.

<i>Figure 15. Target System Toleration/Coexistence Requisites</i>	
Program Number	Product Name and Minimum VRM/Service Level
Any one of the following is for SPEs used for DBRC Migration/Coexistence:	
5635-A04	IBM IMS 13.01.00 with SPE PI62555, PI27285, and PI49334
5635-A05	IBM IMS 14.01.00 with SPE PI62558 and PI49208

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

5.2.2.4 Incompatibility (Negative) Requisites

Negative requisites identify products that must *not* be installed on the same system as this product.

IMS V15.04.00 has no negative requisites.

5.2.3 DASD Storage Requirements

IMS V15.04.00 libraries can reside on all supported DASD types.

Figure 16 lists the total space that is required for each type of library.

<i>Figure 16. Total DASD Space Required by IMS V15.04.00</i>		
Library Type	Total Space Required in 3390 Trks	Description
Target	10866	Total space required by Target data sets
Distribution	12913	Total space required by Distribution data sets
File System	1050	Total space required by zFS file system

Notes:

- 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.
- 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 6.1.8, "Allocate SMP/E Target and Distribution Libraries" on page 27.

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.

The following figures describe the target and distribution libraries and file system paths required to install IMS V15.04.00. The storage requirements of IMS V15.04.00 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 17. Storage Requirements for IMS V15.04.00 Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C O R D F O R M	L R E C O R D L	No. of 3390 Trks	No. of DIR Blks
SDFSBASE	Sample	Any	U	PDSE	FB	80	12	N/A
SDFSCLST	Clist	Any	U	PDSE	FB	80	30	N/A
SDFSDATA	Data	Any	U	PDSE	FB	80	25	N/A
SDFSEXEC	EXEC	Any	U	PDSE	FB	80	135	N/A
SDFSISRC	Sample	Any	U	PDSE	FB	80	140	N/A
SDFSJLIB	LMOD	Any	U	PDSE	U	0	30	N/A
SDFSJSID	Data	Any	U	PDSE	FB	80	10	N/A
SDFSMAC	Macro	Any	U	PDSE	FB	80	2700	N/A
SDFSMLIB	MSG	Any	U	PDSE	FB	80	13	N/A
SDFSPLIB	Panel	Any	U	PDSE	FB	80	600	N/A
SDFSPROC	Sample	Any	U	PDSE	FB	80	20	N/A
SDFSRESL	LMOD	Any	U	PDS	U	0	1550	527
SFSRTRM	Text	Any	U	PDSE	FB	80	220	N/A
SDFSRLIB	SKEL	Any	U	PDSE	FB	80	190	N/A
SDFSAMPL	Sample	Any	U	PDSE	FB	80	125	N/A
SDFSRC	Source	Any	U	PDSE	FB	80	5000	N/A
SDFSSTLIB	Table	Any	U	PDSE	FB	80	18	N/A
SDXRRESL	LMOD	Any	S	PDS	U	0	42	4
SDXRSAMP	Sample	Any	S	PDS	FB	80	6	3

Figure 18. IMS V15.04.00 File System Paths

DDNAME	T Y P E	Path Name
SDFSAWI	N	/usr/lpp/ims/ims15core/awi/IBM/
SDFSIC4J	N	/usr/lpp/ims/ims15/ico/IBM
SDFSJHFS	N	/usr/lpp/ims/ims15/imsjava/IBM/
SDFSJRAR	N	/usr/lpp/ims/ims15/imsjava/rar/IBM
SDFSJCIC	N	/usr/lpp/ims/ims15/imsjava/cics/IBM
SDFSJSAM	N	/usr/lpp/ims/ims15/imsjava/samples/IBM/

Figure 19 (Page 1 of 2). Storage Requirements for IMS V15.04.00 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
ADFSBASE	U	PDSE	FB	80	12	N/A
ADFSCLST	U	PDSE	FB	80	30	N/A
ADFSDATA	U	PDSE	FB	80	25	N/A
ADFSEXEC	U	PDSE	FB	80	135	N/A
ADFSIC4J	U	PDSE	VB	255	300	N/A
ADFSISRC	U	PDSE	FB	80	140	N/A
ADFSJCIC	U	PDSE	VB	255	5	N/A
ADFSJHFS	U	PDSE	VB	255	160	N/A
ADFSJJCL	U	PDSE	FB	80	3	N/A
ADFSJLIB	U	PDSE	U	0	30	N/A
ADFSJRAR	U	PDSE	VB	255	300	N/A
ADFSJSAM	U	PDSE	VB	255	5	N/A
ADFSLOAD	U	PDSE	U	0	2800	N/A
ADFSMAC	U	PDSE	FB	80	2700	N/A
ADFSMLIB	U	PDSE	FB	80	13	N/A
ADFSPLIB	U	PDSE	FB	80	600	N/A
ADFSPROC	U	PDSE	FB	80	20	N/A
ADFSRTRM	U	PDSE	FB	80	220	N/A

Figure 19 (Page 2 of 2). Storage Requirements for IMS V15.04.00 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
ADFSSLIB	U	PDSE	FB	80	190	N/A
ADFSSMPL	U	PDSE	FB	80	125	N/A
ADFSSRC	U	PDSE	FB	80	5000	N/A
ADFSTLIB	U	PDSE	FB	80	18	N/A
ADXRLOAD	S	PDS	U	0	76	65
ADXRSAMP	S	PDS	FB	80	6	3

The following figures list data sets that are not used by SMP/E, but are required for IMS V15.04.00 to run.

Figure 20. Storage Requirements for IMS V15.04.00 Non-SMP/E Data Sets

Data Set Name	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
MODBLKS	U	PDS	U	0	407	280
INSTALIB	U	PDS	FB	80	276	400
INSTATBL	U	PDS	FB	80	276	400

5.3 FMIDs Deleted

Installing IMS V15.04.00 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 IMS V15.04.00 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

IMS V15.04.00 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 V15.04.00.

Please note the following points:

- If you want to install IMS V15.04.00 into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMP/CSI 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 IMS V15.04.00

6.1.1 SMP/E Considerations for Installing IMS V15.04.00

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of IMS V15.04.00.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 21. 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.

Figure 21. SMP/E Options Subentry Values

Subentry	Value	Comment
DSSPACE	(500,500,1300)	3390 DASD tracks
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS Processing

IMS V15.04.00 uses the CALLLIBS function provided in SMP/E to resolve external references during installation. When IMS V15.04.00 is installed, ensure that DDDEFs exist for the following libraries:

- SCEELKED
- SCEESPC
- SCEECPP

- CSSLIB
- SCEEBND2
- SCEELIB

Note: CALLLIBS uses the previous DDDEFs only to resolve the link-edit for IMS V15.04.00. These data sets are not updated during the installation of IMS V15.04.00.

6.1.4 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install IMS V15.04.00:

<i>Figure 22. Sample Installation Jobs</i>			
Job Name	Job Type	Description	SMPTLIB Data Set
DFSALA	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set (Optional)	IBM.HMK1500.F2
DFSALB	SMP/E	Sample job to allocate SMP/E data sets (Optional)	IBM.HMK1500.F2
DFSALOC1	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HMK1500.F2
DFSALOC2	ALLOCATE	Sample job to allocate target and distribution libraries for IMS Java On Demand feature	IBM.HMK1500.F2
DFSWCZFS	ALLOWZFS	Sample job to allocate, create mountpoint, & mount ZFS data sets in support of z/OS Workload Interaction Correlator	IBM.HMK1500.F2
DFSALZFS	ALLOMZFS	Sample job to allocate, create mountpoint, & mount zFS data sets Java On Demand feature (Optional)	IBM.HMK1500.F2
DFSWCMKD	MKDIR	Sample job to invoke the supplied DFSWMKDR EXEC to allocate zFS paths for IMS z/OS Workload Interaction Correlator	IBM.HMK1500.F2
DFSJSMKD	MKDIR	Sample job to invoke the supplied DFSJMKDR EXEC to allocate zFS paths for IMS Java On Demand feature	IBM.HMK1500.F2
DFSDDEF1	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HMK1500.F2
DFSDDEF2	DDDEF	Sample job to define SMP/E DDDEFs for IMS Java On Demand feature	IBM.HMK1500.F2
DFSAPPLY	APPLY	Sample APPLY job	IBM.HMK1500.F2
DFSACCEP	ACCEPT	Sample ACCEPT job	IBM.HMK1500.F2
DFSPROCB	COPY	Sample job to copy IMS sample JCL procedures to site library	IBM.HMK1500.F2

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.7, “Perform SMP/E RECEIVE” on page 27) then copy the jobs from the SMPTLIB data sets to a work data set for editing and submission. See Figure 22 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.HMK1500.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,(20,10,5))
//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.

6.1.5 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 **DFSALA** to allocate the SMP/E data set for IMS V15.04.00. 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 Initialize CSI zones (Optional)

If you are using an existing CSI with its SMP/E zones already initialized, **do not** execute this job.

Note: If you do not run the optional jobs to set up your CSI, do the following:

- You must set the PEMAX value to its SMP/E default. If not, you might get error messages of GIM25901E during SMP/E processing.
- You must set the ACCJCLIN indicator in the distribution zone prior to running the SMP/E ACCEPT processing. **GENERATE processing, as documented in the process described in informational**

APAR II13024, will not run properly without it. 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.

- As IMS Value Unit Edition now distributes most of its libraries in PDSE format, your SMPLTS **MUST** be a PDSE.

Note: If you have an existing SMPLTS which is not a PDSE, you will need to allocate a new PDSE and copy your existing SMPLTS into it. Then change your SMPLTS DDDEF entry to indicate the new PDSE data set.

- **Suggestion:** Create separate SMP/E UTILITY entries for both the binder (linkage editor) and assembler (ASMA90) because the system default might not be the best selection for IMS.

These UTILITY entries should have the following characteristics:

Binder - The highest acceptable return code from the binder for APPLY processing is 0 and for ACCEPT processing is 4. Separate SMP/E OPTIONS entries are needed to point to these different SMP/E UTILITY entries.

Assembler - The assembler utility should contain the following entry:

```
PARM(NOOBJECT,DECK,SIZE(MAX,ABOVE),FLAG(NOPUSH),COMPAT(NOCASE))
```

Tip: IMS requires the NODBCS setting for assemblies. If the assembler is installed to use double-byte character set (DBCS) as the default, the NODBCS parameter must be specified in the SMP/E UTILITY entry.

Edit and submit sample job **DFSALB** to initialize SMP/E zones for IMS V15.04.00. 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.

6.1.7 Perform SMP/E RECEIVE

If you have obtained IMS V15.04.00 as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the IMS V15.04.00 FMIDs, service, and HOLDDATA that are included on the CBPDO package. For more information, see the documentation that is included in the CBPDO.

6.1.8 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job **DFSALOC1** to allocate the SMP/E target and distribution libraries for IMS V15.04.00. 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.

If you are installing the IMS Java On Demand feature, edit and submit the sample job **DFSALOC2** to allocate the SMP/E target and distribution libraries for this feature. 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 Allocate, create and mount ZFS Files for z/OS Workload Interaction Correlator & Java On Demand Feature

The recommended z/OS UNIX file system type is *zFS*.

The sample jobs in this section perform the following tasks for z/OS Workload Interaction Correlator and Optional Java On Demand feature.

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

6.1.9.1 Allocate, create and mount zFS Files for z/OS Workload Interaction Correlator

The recommended mount point for z/OS Workload Interaction Correlator is */usr/lpp/ims/ims15core*.

The sample job **DFSWCZFS** will perform the following tasks:

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

Edit and submit **DFSWCZFS**. Consult the instructions in the sample jobs for more information.

DFSWCZFS defines the mountpoint as follows:

```
MOUNT FILESYSTEM('#dsn')
MOUNTPOINT('/usr/lpp/ims/ims15core')
MODE(RDWR) /* 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.

/usr/lpp/ims/ims15core is the name of the mount point where the z/OS UNIX file system will be mounted for z/OS Workload Interaction Correlator.

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

6.1.9.2 Allocate, create and mount zFS Files for Java On Demand feature

The recommended mount point for IMS Java On Demand feature is */usr/lpp/ims/ims15*.

If you plan to install Java On Demand feature into a new z/OS UNIX file system, you can edit and submit the optional **DFSALZFS** job to perform the following tasks:

- Create a mountpoint

- Mount the z/OS UNIX file system on the mountpoint

Edit and submit **DFSALZFS** Consult the instructions in the sample job for more information.

DFSALZFS defines the mountpoint for Java On Demand feature as follows:

```
MOUNT FILESYSTEM('#dsn')
MOUNTPOINT('/usr/lpp/ims/ims15')
MODE(RDWR) /* 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.

/usr/lpp/ims/ims15 is the name of the mount point where the z/OS UNIX file system will be mounted for Java On Demand feature.

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

6.1.10 Allocate File System Paths for z/OS Workload Interaction Correlator and Java On Demand Feature

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 when you are installing the support for z/OS Workload Interaction Correlator and optionally, IMS Java On Demand feature. 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.

6.1.10.1 Allocate File System Paths for z/OS Workload Interaction Correlator

DFSWMKMD and **DFSWMKDR** will create the additional UNIX file system paths required for z/OS Workload Interaction Correlator.

```
ims/ims15core/awi/IBM
```

Edit and submit sample job **DFSWSMKD** to allocate the zFS paths for z/OS Workload Interaction Correlator. This job will call **DFSWMKDR** to create the additional file system paths described above.

Consult the instructions in the sample job for more information.

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

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

6.1.10.2 Allocate File System Paths for IMS Java On Demand feature

If you plan to install Java On Demand feature into a new zFS file system, **DFSJSMKD** and **DFSJMKDR** will create the additional UNIX file system paths required for IMS Java On Demand feature.

```
ims/ims15/imsjava/IBM
ims/ims15/imsjava/cics/IBM
ims/ims15/imsjava/samples/IBM
ims/ims15/imsjava/lib
ims/ims15/imsjava/rar/IBM
ims/ims15/ico/IBM
```

Edit and submit sample job **DFSJSMKD** to allocate the zFS paths for Java On Demand feature. This job will call **DFSJMKDR** to create the additional file system paths described above.

Consult the instructions in the sample job for more information.

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

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

6.1.11 Create DDDEF Entries

Edit and submit sample job **DFSDDEF1** to create DDDEF entries for the SMP/E target and distribution libraries for IMS V15.04.00. 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.

If you are installing IMS Java On Demand feature, edit and submit sample job **DFSDDEF2** to create DDDEF entries for the SMP/E target and distribution libraries. 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.

6.1.12 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job **DFSAPPLY** to perform an SMP/E APPLY CHECK for IMS V15.04.00. 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/holddata/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 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 HOLDDs 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 4** if this job runs correctly. The following messages can be ignored: GIM43401W, GIM44402W, and GIM61903W.

Note: All 'NOT SEL' messages in the ELEMENT SUMMARY REPORT are expected and can be ignored.

Expected Return Codes and Messages from APPLY: You will receive a **return code of 4** if this job runs correctly. The following messages can be ignored: GIM43401W, GIM44402W, and GIM61903W.

Note: All 'NOT SEL' messages in the ELEMENT SUMMARY REPORT are expected and can be ignored.

If PTFs containing SYSTEM HOLDDATA are being applied, SMP/E APPLY processing will indicate the subject HOLDDATA is bypassed, resulting in a return code of 4 from the APPLY step. These messages do not affect the success of the APPLY step and can be ignored, however, you must take any action described by the HOLDDATA.

Note: The processing of applying IMS Java On Demand feature, FMID JMK1506, will automatically invoke UNIX shell scripts (SHELLSCRs) that will issue commands as required.

If PTFs containing SYSTEM HOLDDATA are being applied, SMP/E APPLY processing will indicate the subject HOLDDATA is bypassed, resulting in a return code of 4 from the APPLY step. These messages do not affect the success of the APPLY step and can be ignored, however, you must take any action described by the HOLDDATA.

6.1.13 Perform SMP/E ACCEPT

Edit and submit sample job **DFSACCEP** to perform an SMP/E ACCEPT CHECK for IMS V15.04.00. 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: If no PTFs are being accepted and if this job runs correctly, you will receive a **return code of 0**. If PTFs are being accepted and if this job runs correctly, you will receive a **return code of 4**.

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.

The following message can be ignored: GIM61903W.

Expected Return Codes and Messages from ACCEPT: You will receive a return code of 0 if this job runs correctly and no PTFs are being accepted.

If PTFs are being accepted and if this job runs correctly, you will receive a **return code of 4**.

6.1.14 Copy Sample Procedures

Beginning with IMS V15.04.00 the IMS SYSGEN process no longer creates the sample IMS procedures that are used as input to the various IMS utilities. The IMS procedures are now copied into the target library SDFSPROC during the SMP/E install.

A sample job DFSPROCB is provided in SDFSBASE which can be used to copy the sample procedures to a site specific procedure library. Consult the instructions in the sample job for more information.

6.1.15 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 IMS V15.04.00, 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.

6.1.16 Cleaning Up Obsolete Data Sets, Paths, and DDDEFs

The following file system paths, which were created and used by previous releases of this product, are no longer used in this release. You can delete these obsolete file system paths after you delete the previous release from your system.

- /usr/lpp/ims/ims14/ico
- /usr/lpp/ims/ims14/ico/IBM
- /usr/lpp/ims/ims14/imsjava
- /usr/lpp/ims/ims14/imsjava/IBM
- /usr/lpp/ims/ims14/imsjava/cics
- /usr/lpp/ims/ims14/imsjava/cics/IBM
- /usr/lpp/ims/ims14/imsjava/ivp
- /usr/lpp/ims/ims14/imsjava/ivp/IBM
- /usr/lpp/ims/ims14/imsjava/lib
- /usr/lpp/ims/ims14/imsjava/rar
- /usr/lpp/ims/ims14/imsjava/rar/IBM

6.2 Activating IMS V15.04.00

6.2.1 Sample Procedures

Please ensure you have completed the actions 6.1.14, “Copy Sample Procedures” on page 33 to create the IMS V15.04.00 sample procedures before continuing on with any other product customization.

6.3 Product Customization

The publication *IMS Version 15 Installation* contains the necessary information to customize and use IMS V15.04.00. Access the IMS Version 15 Installation publication in IBM Documentation at: https://www.ibm.com/docs/SSEPH2_15.4.0/com.ibm.ims154.doc/ims_insthome.htm

6.3.1 Running the IMS Installation Verification Program (IVP) Dialog

The IVP Dialog:

- Contains step-by-step procedures to complete the activation, customization, and testing for the sample IMS system.
- Is documented in *IMS V15 Installation* at: https://www.ibm.com/docs/SSEPH2_15.4.0/com.ibm.ims154.doc.ins/ims_ivp.htm
- Should be used to complete and verify the implementation and testing IMS V15.04.00.
- Is an excellent educational tool for learning how to install and customize IMS.

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

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Reader's Comments

Program Directory for IBM IMS Transaction and Database Servers, 15.04.00, June 2023

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