



**Program Directory for
IBM IMS Tools Base for z/OS**

V01.07.00

Program Number 5655-V93

FMIDs HAHN170 HAFN170

for Use with
z/OS

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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 30.

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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 Tools Base for z/OS. This publication refers to IBM IMS Tools Base for z/OS as IMS Tools Base and IMS Administration Foundation for z/OS as IMS Administration Foundation.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 4 identifies the basic program materials and documentation for IMS Tools Base.
- 3.0, “Program Support” on page 8 describes the IBM support available for IMS Tools Base.
- 4.0, “Program and Service Level Information” on page 10 lists the APARs (program level) and PTFs (service level) that have been incorporated into IMS Tools Base.
- 5.0, “Installation Requirements and Considerations” on page 12 identifies the resources and considerations that are required for installing and using IMS Tools Base.
- 6.0, “Installation Instructions” on page 21 provides detailed installation instructions for IMS Tools Base. It also describes the procedures for activating the functions of IMS Tools Base, or refers to appropriate publications.

Before installing IMS Tools Base, read the *CBPDO Memo To Users* and the *CBPDO Memo To Users Extension* that are supplied with this program in softcopy format and this program directory; then keep them for future reference. Section 3.2, “Preventive Service Planning” on page 8 tells you how to find any updates to the information and procedures in this program directory.

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

Do not use this program directory if you install IMS Tools Base with a SystemPac or ServerPac. When you use one of those offerings, use the jobs and documentation supplied with the offering. The offering will point you to specific sections of this program directory as needed.

1.1 IMS Tools Base Description

IBM IMS Tools Base for z/OS, V1.7 (5655-V93) is a no-charge product that provides common infrastructure and components for many IBM IMS Tools offerings. IBM IMS Tools Base for z/OS consists of various components that support key strategic architectures, technologies, and services utilized by IMS Tools.

IBM IMS Tools Base for z/OS has been enhanced to include a new component, **IMS Administration Foundation for z/OS**, which provides a graphical user interface to many IMS and IBM Tools functions without the need to install software on users' laptops or desktops. Running in a web browser as a Zowe Virtual Desktop application and integrated with the IBM Unified Experience for z/OS used by IBM Db2 Administration Foundation for z/OS and IBM Db2 DevOps Experience for z/OS, the web user interface offers a single interface for database administrators (DBA) and system programmers that support both IMS and Db2.

The following IMS functions are included in IMS Administration Foundation:

- Discovery IMS systems and system components and registering them to the Unified Management Server
- Finding and viewing status and details about IMS systems and components, including IMS Connect instances, IMSplexes, data sharing groups, DBDs, and PSBs
- Issuing SQL statements
- Issuing IMS type-1 and type-2 commands

Installations with IBM IMS Library Integrity Utilities for z/OS or an IBM IMS Solution Pack containing it can also view DBD and PSB maps and source files.

Installations with one or more of the following IMS Solution Packs can see databases with exceptions, including flexible and detailed reporting on database sensors and autonomics:

- IMS Database Solution Pack for z/OS
- IMS Database Utility Solution for z/OS
- IMS Fast Path Solution Pack for z/OS

Installations with IMS Recovery Solution Pack for z/OS can see databases with exceptions related to backup status and recovery readiness of the RECON-registered databases.

IMS Administration Foundation for z/OS offers both new and experienced IMS DBA's and system programmers a more intuitive interface for viewing and understanding their IMS environment. By automatically discovering details about the IMS environment, offering direct links to relevant IBM documentation, and providing a graphical view of current and historical database status and exceptions, this web UI can quickly become the dashboard for IMS administrators. Its integration with IBM Db2 Administration Foundation enables DBAs that support both IMS and Db2 to use a single web browser interface to both subsystems.

As a component of IMS Tools Base for z/OS 1.7, IMS Administration Foundation uses the TSO credentials for each logged-in user to perform tasks, ensuring access to IMS functions, such as SQL and IMS commands, is authorized.

Note: The IMS Batch Terminal Simulator (BTS) Resource Adapter has been removed from IBM IMS Tools Base for z/OS. Support for the BTS Resource Adapter will continue in version 1.6 of IMS Tools Base for z/OS as long as version 1.6 is supported.

1.2 IMS Tools Base FMIDs

IMS Tools Base consists of the following FMID:

HAHN170
HAFN170

2.0 Program Materials

An IBM program is identified by a program number. The program number for IMS Tools Base is 5655-V93.

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 Tools Base. 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 21 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 Tools Base in the *CBPDO Memo To Users Extension*.

Figure 1 describes the program file content for IMS Tools Base.

You can refer to the *CBPDO Memo To Users Extension* to see where the files reside on the tape.

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 1 (Page 1 of 2). Program File Content for IMS Tools Base

Name	ORG	RECFM	RECL	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.HAHN170.F1	PDS	FB	80	8800
IBM.HAHN170.F2	PDS	FB	80	8800
IBM.HAHN170.F3	PDS	U	0	6144
IBM.HAHN170.F4	PDS	FB	80	8800
IBM.HAHN170.F5	PDS	FB	80	8800

Figure 1 (Page 2 of 2). Program File Content for IMS Tools Base

Name	O R G	R E C F M	L R E C L	BLK SIZE
IBM.HAHN170.F6	PDS	VB	255	27998
IBM.HAHN170.F7	PDS	FB	80	8800
IBM.HAHN170.F8	PDS	FB	80	8800
IBM.HAHN170.F9	PDS	FB	80	8800
IBM.HAHN170.F10	PDS	FB	4096	24576
IBM.HAHN170.F11	PDS	FB	80	8800
IBM.HAHN170.F12	PDS	FB	80	8800
IBM.HAHN170.F13	PDS	FB	80	8800
IBM.HAHN170.F14	PDS	FB	80	8800
IBM.HAHN170.F15	PDS	FB	80	8800
IBM.HAHN170.F16	PDS	FB	80	8800
IBM.HAHN170.F17	PDS	FB	80	8800
IBM.HAHN170.F18	PDS	FB	80	8800
IBM.HAHN170.F19	PDS	FB	80	8800
IBM.HAHN170.F20	PDS	FB	80	8800
IBM.HAHN170.F21	PDS	FB	80	8800
IBM.HAHN170.F22	PDS	FB	80	8800
IBM.HAHN170.F23	PDS	FB	80	8800

Figure 2. Program File Content for IMS Administration Foundation

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	PDS	FB	80	8800
IBM.HAFN170.F1	PDS	FB	80	8800
IBM.HAFN170.F2	PDS	VB	256	27998
IBM.HAFN170.F3	PDS	FB	80	8800
IBM.HAFN170.F4	PDS	FB	80	8800

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for IMS Tools Base.

2.3 Program Publications

The following sections identify the basic publications for IMS Tools Base.

Figure 3 identifies the basic unlicensed publications for IMS Tools Base. Those that are in softcopy format can be obtained from the IBM Publications Center website at:
<http://www.ibm.com/shop/publications/order/>

<i>Figure 3. Basic Material: Unlicensed</i>		
Publication Title	Form Number	Media Format
IBM IMS Tools Base for z/OS License Information	GC19-2899	http://www.ibm.com/support/docview.wss?uid=swg27020942
IBM IMS Tools Base for z/OS Configuration Guide	SC27-9852	http://www.ibm.com/support/docview.wss?uid=swg27020942
IBM IMS Tools Base for z/OS IMS Tools Common Services User's Guide and Reference	SC27-9857	http://www.ibm.com/support/docview.wss?uid=swg27020942
IBM IMS Tools Base for z/OS IMS Tools Knowledge Base User's Guide and Reference	SC27-9855	http://www.ibm.com/support/docview.wss?uid=swg27020942
IBM IMS Tools Base for z/OS IMS Hardware Data Compression Extended User's Guide and Reference	SC27-9858	http://www.ibm.com/support/docview.wss?uid=swg27020942
IBM IMS Tools Base for z/OS Policy Services User's Guide and Reference	SC27-9854	http://www.ibm.com/support/docview.wss?uid=swg27020942
IBM IMS Tools Base for z/OS Distributed Access Infrastructure User's Guide and Reference	SC27-9856	http://www.ibm.com/support/docview.wss?uid=swg27020942
IBM IMS Tools Base for z/OS Autonomics Director User's Guide and Reference	SC27-9853	http://www.ibm.com/support/docview.wss?uid=swg27020942
IBM Unified Management Server User Guide	SC27-9151	https://www.ibm.com/resources/publications

2.3.1 Optional Program Publications

No optional publications are provided for IMS Tools Base.

2.4 Program Source Materials

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

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 4 during the installation of IMS Tools Base.

<i>Figure 4. 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

3.0 Program Support

This section describes the IBM support available for IMS Tools Base.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install IMS Tools Base, 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 26 for a sample APPLY command.

If you obtained IMS Tools Base as part of a CBPDO, HOLDDATA is included.

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

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

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

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

PSP Buckets are identified by UPGRADEs, which specify product levels; and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for IMS Tools Base are included in Figure 5.

Figure 5. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
5655V93	HAHN170	IMS Tools Base
5655V93	HAFN170	IMS Administration Foundation

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 6 on page 9 identifies the component IDs (COMPID) for IMS Tools Base.

<i>Figure 6. Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
HAHN170	5655V9300	IMS Tools Base	170
HAFN170	5655V93AF	IMS Administration Foundation	170

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of IMS Tools Base. The program level refers to the APAR fixes that have been incorporated into the program. The service level refers to the PTFs that have been incorporated into the program.

4.1 Program Level Information

The following APAR fixes against previous releases of IMS Tools Base have been incorporated into this release. They are listed by FMID.

- FMID HAHN150

PI20938	PI39915	PI50759	PI57662	PI73100
PI26352	PI42869	PI52196	PI58342	PI78078
PI27756	PI43338	PI53687	PI58401	PI79289
PI32166	PI43438	PI54679	PI61681	PI83100
PI33394	PI43826	PI55325	PI62712	PI83106
PI33704	PI43986	PI56201	PI62856	PI84027
PI34329	PI44625	PI56201	PI64296	PI84060
PI35988	PI45230	PI56201	PI47673	PI88918
PI36493	PI45400	PI56201	PI63652	PI90093
PI36501	PI45400	PI56201	PI66079	PI94128
PI37091	PI47583	PI56201	PI70552	PI87849
PI37616	PI48640	PI56201	PI72502	PH02253
PI38787	PI50575	PI57662		

- FMID HAHN160

PI70229	PI83151	PI94726	PH04390	PH11168
PI70645	PI85264	PI94966	PH04699	PH11800
PI70647	PI86378	PI95275	PH05648	PH11976
PI70648	PI87645	PI96116	PH05724	PH12481
PI70649	PI87673	PI96507	PH06838	PH12530
PI71105	PI88127	PI98323	PH07271	PH12531
PI71834	PI88378	PH00782	PH07785	PH12645
PI72067	PI88543	PH01825	PH08261	PH13443
PI72374	PI88791	PH02659	PH09315	PH14022
PI76011	PI89258	PH03083	PH10312	PH14129
PI78387	PI93013	PH03269	PH10905	PH14211
PI80005	PI93014	PH03561	PH10948	PH14871
PI80007	PI93320	PH04329	PH11007	PH16187

PH16255	PH20916	PH25441	PH33409	PH41189
PH16946	PH21599	PH28397	PH34476	PH42352
PH17209	PH21713	PH28437	PH36506	PH42697
PH17326	PH22470	PH29101	PH36800	PH42774
PH18252	PH22524	PH31559	PH37927	PH44659
PH18757	PH23286	PH32050	PH38116	PH45029
PH19477	PH23664	PH32051	PH40235	PH45545
PH19482	PH24174	PH32753	PH40910	
PH19926	PH24657	PH33089		

4.2 Service Level Information

No PTFs against this release of IMS Tools Base have been incorporated into the product package.

Frequently check the IMS Tools Base 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 Tools Base. 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 Tools Base.

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	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	V02.03.00	N/A	No

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

5.2 Target System Requirements

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

IMS Tools Base 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 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.

IMS Tools Base 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.

IMS Tools Base 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.

<i>Figure 8. Target System Mandatory Operational Requisites for IMS Tools Base</i>	
Program Number	Product Name and Minimum VRM/Service Level
Any one of the following:	
5635-A06	IMS V15.1
5655-DS5	IMS Database Value Unit Edition, V15.1
5655-TM4	IMS Transaction Manager Value Unit Edition, V15.1

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.

<i>Figure 9. Target System Conditional Operational Requisites for IMS Tools Base</i>		
Program Number	Product Name and Minimum VRM/Service Level	Function
Any one of the following:		
5655-DSP	IBM IMS Database Solution Pack for z/OS 2.2, or higher	Database Sensors and Autonomics
5698-DUL	IBM IMS Database Utility Solution for z/OS 2.1, or higher	Database Sensors and Autonomics
5698-FPP	IBM IMS Fast Path Solution Pack for z/OS 2.1, or higher	Database Sensors and Autonomics
5655-ISR	IBM IMS Recovery Solution Pack for z/OS 2.1, or higher	Recovery Preparedness Autonomics
5655-U08	IBM IMS Library Integrity Utilities for z/OS 2.2 and APAR PH47086, or higher	DBD and PSB maps
5655-UM1	IBM Unified Management Server for z/OS 1.1 with APAR PH47708, or higher	Web User Interface

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.

IMS Tools Base has no toleration/coexistence requisites.

5.2.2.4 Incompatibility (Negative) Requisites

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

IMS Tools Base has no negative requisites.

5.2.3 DASD Storage Requirements

IMS Tools Base libraries can reside on all supported DASD types.

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

<i>Figure 10. Total DASD Space Required by IMS Tools Base</i>	
Library Type	Total Space Required in 3390 Trks
Target	1754 tracks
Distribution	2361 tracks

<i>Figure 11. Total DASD Space Required by IMS Administration Foundation</i>	
Library Type	Total Space Required in 3390 Trks
Target	45 tracks
Distribution	150 tracks
File System(s)	100 tracks

Notes:

1. Depending on maintenance applied, the stated DASD space requirements may not be sufficient and data set allocations may need to be increased over time to match the needs of your environment.

2. 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.
3. 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 24.

4. All target and distribution libraries listed have the following attributes:
 - The default name of the data set can be changed.
 - The default block size of the data set can be changed.
 - The data set can be merged with another data set that has equivalent characteristics.
 - The data set can be either a PDS or a PDSE.
5. All target libraries listed have the following attributes:
 - These data sets can be SMS-managed, but they are not required to be SMS-managed.
 - These data sets are not required to reside on the IPL volume.
 - The values in the "Member Type" column are not necessarily the actual SMP/E element types that are identified in the SMPMCS.
6. All target libraries that are listed and contain load modules have the following attributes:
 - These data sets can be in the LPA, but they are not required to be in the LPA.
 - These data sets can be in the LNKLIST.
 - Target libraries SAILINK, SFOILOAD, SGLXLOAD, and SHKTLOAD must be APF-authorized.

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

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

Figure 12. Storage Requirements for IMS Tools Base 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
SAIIBASE	SAMPLE	Any	U	PDS	FB	80	28	2
SAIIEEXEC	EXEC	Any	U	PDS	FB	80	11	2
SAIIGENU	DATA	Any	U	PDS	VB	255	225	5
SAIILINK	LMOD	Any	U	PDS	U	0	60	30
SAIISAMP	SAMPLE	Any	U	PDS	FB	80	5	3
SFOILOAD	LMOD	Any	U	PDS	U	0	60	40
SFOIMACS	MACRO	Any	U	PDS	FB	80	15	3
SFOISAMP	SAMPLE	Any	U	PDS	FB	80	15	3
SGLXLOAD	LMOD	Any	U	PDS	U	0	58	20
SGLXMACS	MACRO	Any	U	PDS	FB	80	5	3
SGLXSAMP	SAMPLE	Any	U	PDS	FB	80	5	3
SHCOCEXE	EXEC	Any	U	PDS	FB	80	10	3
SHCODATA	DATA	Any	U	PDS	FB	4096	10	3
SHCOLMOD	LMOD	Any	U	PDS	U	0	76	10
SHCOMENU	MESSAGE	Any	U	PDS	FB	80	5	3
SHCOPENU	PANEL	Any	U	PDS	FB	80	10	4
SHCOSAMP	SAMPLE	Any	U	PDS	FB	80	15	3
SHCOSENU	SKEL	Any	U	PDS	FB	80	6	3
SHKTCEXE	EXEC	Any	U	PDS	FB	80	150	10
SHKTCLIB	CLIST	Any	U	PDS	FB	80	5	2
SHKTLOAD	LMOD	Any	U	PDS	U	0	753	200
SHKTMENU	MESSAGE	Any	U	PDS	FB	80	50	50
SHKTPENU	PANEL	Any	U	PDS	FB	80	225	200
SHKTSAMP	SAMPLE	Any	U	PDS	FB	80	20	50
SHKTTENU	TABLE	Any	U	PDS	FB	80	2	2
SHKTTMPL	DATA	Any	U	PDS	FB	80	30	3

Figure 13. Storage Requirements for IMS Administration Foundation 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
SAFNBASE	SAMPLE	Any	U	PDS	FB	80	55	10
SAFNEXEC	EXEC	Any	U	PDS	FB	80	15	5
SAFNSAMP	SAMPLE	Any	U	PDS	FB	80	15	5

Figure 14. IMS Administration Foundation File System Paths

DDNAME	T Y P E	Path Name
SAFNBIN	N	/usr/lpp/IBM/afn/v1r7m0/bin/IBM/

Figure 15 (Page 1 of 2). Storage Requirements for IMS Tools Base 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
AAIIBASE	U	PDS	FB	80	28	2
AAIIEEXEC	U	PDS	FB	80	11	2
AAIIGENU	U	PDS	VB	255	225	5
AAIILINK	U	PDS	U	0	1500	260
AAIISAMP	U	PDS	FB	80	5	3
AFOIMACS	U	PDS	FB	80	15	3
AFOISAMP	U	PDS	FB	80	15	3
AGLXMACS	U	PDS	FB	80	5	3
AGLXSAMP	U	PDS	FB	80	5	3
AHCOCEXE	U	PDS	FB	80	10	3
AHCODATA	U	PDS	FB	4096	10	3
AHCOMENU	U	PDS	FB	80	5	3
AHCOPENU	U	PDS	FB	80	10	4
AHCOSAMP	U	PDS	FB	80	15	3
AHCOSENU	U	PDS	FB	80	6	3

Figure 15 (Page 2 of 2). Storage Requirements for IMS Tools Base 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
AHKTCEXE	U	PDS	FB	80	150	5
AHKTCLIB	U	PDS	FB	80	5	2
AHKTMENU	U	PDS	FB	80	50	15
AHKTPENU	U	PDS	FB	80	225	60
AHKTSAMP	U	PDS	FB	80	20	5
AHKTTENU	U	PDS	FB	80	2	2
AHKTTMPL	U	PDS	FB	80	30	3

Figure 16. Storage Requirements for IMS Administration Foundation 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
AAFNBASE	U	PDS	FB	80	55	10
AAFNBIN	U	PDS	VB	256	15	5
AAFNEXEC	U	PDS	FB	80	15	5
AAFNSAMP	U	PDS	FB	80	15	5

5.3 FMIDs Deleted

Installing IMS Tools Base 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 Tools Base 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 Tools Base 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 Tools Base.

Please note the following points:

- If you want to install IMS Tools Base 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 Tools Base

6.1.1 SMP/E Considerations for Installing IMS Tools Base

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

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 17. 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.

Subentry	Value	Comment
DSSPACE	(200,200,500)	
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS Processing

IMS Tools Base, FMID HAHN170, uses the CALLLIBS function that is provided in SMP/E to resolve external references during installation. When IMS Tools Base is installed, ensure that DDDEFs exist for the following libraries:

- CSSLIB

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

6.1.4 Sample Jobs

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

Figure 18. Sample Installation Jobs for IMS Tools Base

Job Name	Job Type	Description	RELFILE
AIIALA	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set (Optional)	IBM.HAHN170.F2
AIIALB	SMP/E	Sample job to allocate SMP/E data sets (Optional)	IBM.HAHN170.F2
AIIRECEV	RECEIVE	Sample RECEIVE job	IBM.HAHN170.F2
AIIALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HAHN170.F2
AIIDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HAHN170.F2
AIIAPPLY	APPLY	Sample APPLY job	IBM.HAHN170.F2
AIIACCEP	ACCEPT	Sample ACCEPT job	IBM.HAHN170.F2

Figure 19. Sample Installation Jobs for IMS Administration Foundation

Job Name	Job Type	Description	RELFILE
AFN6RECV	RECEIVE	Sample RECEIVE job	IBM.HAFN170.F1
AFN3ALOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HAFN170.F1
AFNZFS	ALLOMZFS	Sample job to allocate, create mountpoint and mount zFS data sets (Optional)	IBM.HAFN170.F1
AFN5MKDR	MKDIR	Sample job to invoke the supplied AFNMKDIR EXEC to allocate the system paths	IBM.HAFN170.F1
AFN4DDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HAFN170.F1
AFN7APLY	APPLY	Sample APPLY job	IBM.HAFN170.F1
AFN8ACEP	ACCEPT	Sample ACCEPT job	IBM.HAFN170.F1

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.7, “Perform SMP/E RECEIVE” on page 24) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 18 & Figure 19 to find the appropriate refile data sets.

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=*
//FILEIN DD DSN=IBM.HAHN170.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=FILEIN,OUTDD=OUT
/*
```

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

FILEIN:

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.

```
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//FILEIN DD DSN=IBM.HAFN170.F1,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=FILEIN,OUTDD=OUT
/*
```

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

FILEIN:

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 AIIALA to allocate the SMP/E data set for IMS Tools Base. 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, do not execute this job.

Edit and submit sample job AIIALB to initialize SMP/E zones for IMS Tools Base. 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 Tools Base as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the IMS Tools Base FMIDs, service, and HOLDDATA that are included on the CBPDO package. For more information, see the documentation that is included in the CBPDO.

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

You can also choose to edit and submit sample job AFN6RECV to perform the SMP/E RECEIVE for IMS Administration Foundation. 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 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job AIIALLOC to allocate the SMP/E target and distribution libraries for IMS Tools Base. Consult the instructions in the sample job for more information.

Edit and submit sample job AFN3ALLOC to allocate the SMP/E target and distribution libraries for IMS Administration Foundation. 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 (Optional)

This job allocates, creates a mountpoint, and mounts zFS the data set for IMS Administration Foundation.

If you plan to install IMS Administration Foundation into a new z/OS UNIX file system, you can edit and submit the optional AFNZFS job to perform the following tasks:

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

Consult the instructions in the sample job for more information.

The recommended z/OS UNIX file system type is zFS. The recommended mount point is `/usr/lpp/IBM/afn/v1r7m0/bin/`.

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

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

```
MOUNT FILESYSTEM('#dsn')
MOUNTPOINT('/usr/lpp/IBM/afn/v1r7m0/bin/')
MODE(RDRW) /* can be MODE(READ) */
TYPE(ZFS) PARM('AGGRGROW') /* zFS, with extents */
```

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

#dsn is the name of the data set holding the z/OS UNIX file system.

/usr/lpp/IBM/afn/v1r7m0/bin/ is the name of the mount point where the z/OS UNIX file system will be mounted.

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

The target system HFS or zFS data set must be mounted on the driving system when running the sample AFN5MKDR job since the job will create paths in the HFS or zFS.

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

If you plan to install IMS Administration Foundation into a new HFS or zFS file system, you must create the mountpoint and mount the new file system to the driving system for IMS Administration Foundation.

The recommended mountpoint is `/usr/lpp/IBM/afn/v1r7m0/bin/`.

Edit and submit sample job AFN5MKDR to allocate the HFS or zFS paths for IMS Administration Foundation. Consult the instructions in the sample job for more information.

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

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

6.1.11 Create DDDEF Entries

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

Edit and submit sample job AFN4DDEF to create DDDEF entries for the SMP/E target and distribution libraries for IMS Administration Foundation. 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 AIIAPPLY to perform an SMP/E APPLY CHECK for IMS Tools Base. Consult the instructions in the sample job for more information.
2. Ensure that you have the latest HOLDDATA; then edit and submit sample job AFN7APLY to perform an SMP/E APPLY CHECK for IMS Administration Foundation. Consult the instructions in the sample job for more information.

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

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

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

Here are sample APPLY commands:

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

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

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

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

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

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

This method is the quicker, but requires subsequent review of the Exception SYSMOD report produced by the REPORT ERRSYSMODS command to investigate any unresolved HIPERs. If you have received the latest HOLDDATA, you can also choose to use the REPORT MISSINGFIX command and specify Fix Category IBM.ProductInstall-RequiredService to investigate missing recommended service.

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

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

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

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

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

6.1.13 Perform SMP/E ACCEPT

Edit and submit sample job AIIACCEP to perform an SMP/E ACCEPT CHECK for IMS Tools Base. Consult the instructions in the sample job for more information.

Edit and submit sample job AFN8ACEP to perform an SMP/E ACCEPT CHECK for IMS Administration Foundation. Consult the instructions in the sample job for more information.

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

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

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

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

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

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

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

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

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

6.2 Activating IMS Tools Base

6.2.1 Product Customization

The publication *IBM IMS Tools Base for z/OS Configuration Guide* (SC27-9852) contains the necessary information to customize and use IMS Tools Base.

The publication *IBM Unified Management Server User Guide* (SC27-9151) contains the necessary information to use IMS Administration Foundation and perform post-SMP/E installation tasks to activate and configure IMS Administration Foundation features in IBM Unified Management Server for z/OS V01.01.00.

6.2.2 Migration from IMS Tools Base 1.6

To use your repositories created by IMS Tools Base V1.6, you must migrate your repositories from IMS Tools Base V1.6 to IMS Tools Base V1.7. The publication *IBM IMS Tools Base for z/OS Configuration Guide* (SC27-9852) contains the necessary information to migrate your repositories created by IMS Tools Base V1.6.

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Program Directory for IBM IMS Tools Base for z/OS, July 2022

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