IBM

Program Directory for

IBM IMS Problem Investigator for z/OS

V02.04.00

Program Number 5655-R02

FMID H28T240

for Use with
z/OS

Document Date: October 2014

GI10-8704-03

> **Note**
>
> Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 24.

Contents

Figures

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 Problem Investigator for z/OS. This publication refers to IBM IMS Problem Investigator for z/OS as IMS Problem Investigator.

The Program Directory contains the following sections:

- 2.0, "Program Materials" on page 4 identifies the basic program materials and documentation for IMS Problem Investigator.

- 3.0, "Program Support" on page 7 describes the IBM support available for IMS Problem Investigator.

- 4.0, "Program and Service Level Information" on page 9 lists the APARs (program level) and PTFs (service level) that have been incorporated into IMS Problem Investigator.

- 5.0, "Installation Requirements and Considerations" on page 10 identifies the resources and considerations that are required for installing and using IMS Problem Investigator.

- 6.0, "Installation Instructions" on page 17 provides detailed installation instructions for IMS Problem Investigator. It also describes the procedures for activating the functions of IMS Problem Investigator, or refers to appropriate publications.

Before installing IMS Problem Investigator, 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 7 tells you how to find any updates to the information and procedures in this program directory.

IMS Problem Investigator 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 Problem Investigator are included on the CBPDO tape.

Do not use this program directory if you install IMS Problem Investigator 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 Problem Investigator Description

IBM IMS Problem Investigator for z/OS, V2.4 (5655-R02), is a powerful problem analysis aid for the Information Management System Database (IMS DB) and Transaction Manager (IMS TM) systems. It helps make identifying and resolving problems faster and easier.

The product provides an Interactive System Productivity Facility (ISPF) dialog, as well as a batch and REXX interface, to format and present IMS-related diagnostic data, including the IMS log and monitor, IMS

1

Connect events collected by the separately licensed IBM IMS Connect Extensions for z/OS (5655-S56), as well as OMEGAMON Transaction Reporting Facility (TRF) and Application Trace Facility (ATF), DB2, IBM WebSphere MQ logs, and log streams such as the Common Queue Server (CQS).

IMS Problem Investigator for z/OS:

- Exploits the wealth of information collected by IMS and its related subsystems.
- Offers interactive problem determination, with powerful record formatting and navigation aids that help to simplify log analysis.
- Provides an end-to-end replay of an IMS transaction from a single screen, including DB2 and WebSphere MQ events.
- Tracks the transaction life cycle through IMS Connect and into IMS.
- Supports OMEGAMON for ATF for detailed DLI and DB2 call analysis and CPU utilization.
- Provides log record analysis that can drill down to the field-level with online help.
- Displays transaction times and event latencies to help identify bottlenecks.
- Provides a REXX command interface for customized log record analysis and extract.
- Offers batch reporting and extract facility.
- Provides automated IMS log file selection using DBRC.
- Complements other tools in the performance management portfolio.

New features and enhancements provided with IMS Problem Investigator for z/OS:

- **IMS checkpoint and statistics enhancements**

  Selected IMS log record type x'40' checkpoint and x'45' statistics records can be split into multiple records. One record per resource provides improved analysis. For example, the type x'4004' SMB (transaction) checkpoint record can be split into one record per transaction, allowing a filter to be specified to identify all transactions that are not being used.

- **IMS V13 support**

  Supports new and changed log record types introduced in IMS V13.

- **DB2 11 for z/OS support**

  – Support for DB2 logs in extended 10-byte RBA and LRSN format.

  – Improved DB2 log record type recognition. UR events (previously all identified as x'0020') are now split into control (x'0020') and undo/redo (x'0600').

- **ISPF dialog usability enhancements**

  – The new TIMEOUT option in log browsing can stop long response times associated with full data set scans.

  – Each log file in the process list now remembers its last date and time position in the log file. Now when resume log file analysis resumes, it is quicker to relocate back to where you were.

– Color highlighting makes it easier to distinguish between different record types in the display.

– New display options to:

   1. Bypass the LSN display and only show time when scrolling horizontally between expanded and compact views.

   2. Remove the expanded view record separator line to show more records on the screen.

– Append new records to an existing extract data set using the EXTRACT primary command with the MOD option.

- **IMS log type x'50' database update enhancements**

  The IMS type x'50' database update record is now split into 3 sub-types to improve understanding of the update taking place:

  – x'5050' database update

  – x'5051' database change unsuccessful

  – x'5052' database insert into KSDS

- **IMS Connect enhancements for IMS V13**

  – IMS Connect events codes are extended from one byte to two to support the new IMS V13 Connect events related to CICS, ISC, health-check and security.

  – The Connect recorder trace is interpreted and displayed as Connect events for a deep-dive of Connect related problems.

1.2 IMS Problem Investigator FMID

IMS Problem Investigator consists of the following FMID:

H28T240

2.0 Program Materials

An IBM program is identified by a program number. The program number for IMS Problem Investigator is 5655-R02.

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 Problem Investigator. Ask your IBM representative for this information if you have not already received a copy.

2.1 Basic Machine-Readable Material

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

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

Figure 1 describes the program file content for IMS Problem Investigator. 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 H28T240 - IMS Problem Investigator				
Name	ORG	RECFM	LRECL	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.H28T240.F1	PDS	FB	80	8800
IBM.H28T240.F2	PDS	FB	80	8800
IBM.H28T240.F3	PDS	FB	80	8800
IBM.H28T240.F4	PDS	U	0	6144
IBM.H28T240.F5	PDS	FB	80	8800

Name	O R G	R E C F M	L R E C L	BLK SIZE
Figure 1 (Page 2 of 2). Program File Content for H28T240 - IMS Problem Investigator				
IBM.H28T240.F6	PDS	FB	80	8800
IBM.H28T240.F7	PDS	FB	80	8800
IBM.H28T240.F8	PDS	FB	80	8800
IBM.H28T240.F9	PDS	FB	80	8800

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for IMS Problem Investigator.

2.3 Program Publications

The following sections identify the basic publications for IMS Problem Investigator.

Figure 2 identifies the basic unlicensed publications for IMS Problem Investigator. Those that are in softcopy format publications can be obtained from the IBM Publications Center website at: http://www.ibm.com/shop/publications/order/

Publication Title	Form Number	Media Format
Figure 2. Basic Material: Unlicensed		
IBM IMS Problem Investigator for z/OS License Information	GC18-9780	http://www.ibm.com/software/sla/sladb.nsf
IBM IMS Problem Investigator for z/OS User's Guide	SC19-4367	http://www.ibm.com/software/data/db2imstools/library.html

2.3.1 Optional Program Publications

No optional publications are provided for IMS Problem Investigator.

2.4 Program Source Materials

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

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 3 on page 6 during the installation of IMS Problem Investigator.

Figure 3. Publications Useful During Installation		
Publication Title	**Form Number**	**Media Format**
IBM SMP/E for z/OS Messages, Codes, and Diagnosis	GA22-7770	http://www.ibm.com/shop/ publications/order/
IBM SMP/E for z/OS Commands	SA22-7771	http://www.ibm.com/shop/ publications/order/
IBM SMP/E for z/OS Reference	SA22-7772	http://www.ibm.com/shop/ publications/order/
IBM SMP/E for z/OS User's Guide	SA22-7773	http://www.ibm.com/shop/ publications/order/

3.0 Program Support

This section describes the IBM support available for IMS Problem Investigator.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install IMS Problem Investigator, 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 6.1.10, "Perform SMP/E APPLY" on page 21 for a sample APPLY command.

If you obtained IMS Problem Investigator as part of a CBPDO, HOLDDATA is included.

If the CBPDO for IMS Problem Investigator 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 Problem Investigator are included in Figure 4

Figure 4. PSP Upgrade and Subset ID		
UPGRADE	**SUBSET**	**Description**
5655R02	H28T240	IMS Problem Investigator

3.3 Statement of Support Procedures

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

Figure 5 on page 8 identifies the component IDs (COMPID) for IMS Problem Investigator.

Figure 5. Component IDs			
FMID	**COMPID**	**Component Name**	**RETAIN Release**
H28T240	5655K5000	IMS PROB INVESTGATOR	240

4.0 Program and Service Level Information

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

- FMID H28T230

PM61970	PM82920	PM98323
PM66521	PM83164	PI06503
PM66522	PM83462	PI09155
PM74172	PM86363	PI11009
PM74268	PM89006	PI12098
PM74263	PM91416	PI12683
PM74271	PM91996	PI18159
PM74272	PM93753	PI18162
PM79865	PM95916	PI20512
PM82636	PM96382	PI21687
PM82659	PM97097	

4.2 Service Level Information

No PTFs against this release of IMS Problem Investigator have been incorporated into the product package.

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

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating IMS Problem Investigator. 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 Problem Investigator.

5.1.1 Machine Requirements

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

5.1.2 Programming Requirements

Figure 6. Driving System Software Requirements				
Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
Any **one** of the following:				
5694-A01	z/OS	V01.13.00	N/A	No
5650-ZOS	z/OS	V02.01.00	N/A	No

Note: SMP/E is a requirement for Installation and is an element of z/OS but can also be ordered as a separate product, 5655-G44, minimally V03.06.00.

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 Problem Investigator.

IMS Problem Investigator 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 Problem Investigator 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 Problem Investigator 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 7. Target System Mandatory Operational Requisites	
Program Number	**Product Name and Minimum VRM/Service Level**
Any **one** of the following:	
5635-A03	IBM IMS, V12.01.00
5655-DSQ	IBM IMS Database Value Unit Edition, V12.01.00 with PTF UK93908
5655-TM1	IBM IMS Transaction Manager Value Unit Edition, V12.01.00
5635-A04	IBM IMS, V13.01.00
5655-DSM	IBM IMS Database Value Unit Edition, V13.01.00
5655-TM2	IBM IMS Transaction Manager Value Unit Edition, V13.01.00

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

Figure 8 (Page 1 of 2). Target System Conditional Operational Requisites		
Program Number	**Product Name and Minimum VRM/Service Level**	**Function**
Any **one** of the following:		
5655-S56	IBM IMS Connect Extensions for z/OS, V02.03.00 or higher	To provide IMS Connect event instrumentation
5655-S42	IBM IMS Performance Solution Pack for z/OS, V1.2 or higher	To provide IMS Connect event instrumentation
Any **one** of the following:		
5655-R03	IBM IMS Performance Analyzer for z/OS, V04.03.00 or higher	For creating the IMS transaction index
5655-S42	IBM IMS Performance Solution Pack for z/OS, V1.2 or higher	For creating the IMS transaction index
Any **one** of the following:		
5698-A34	IBM Tivoli OMEGAMON XE for IMS on z/OS, V04.02.00 or higher	For sourcing ATF data for analysis
5698-T02	IBM Tivoli OMEGAMON XE for IMS on z/OS, V05.01.00 or higher	For sourcing ATF data for analysis

Figure 8 (Page 2 of 2). Target System Conditional Operational Requisites		
Program Number	**Product Name and Minimum VRM/Service Level**	**Function**
Any **one** of the following:		
5605-DB2	IBM DB2 for z/OS, V10	For DB2 log analysis
5697-P31	IBM DB2 for z/OS Value Unit Edition, V10	For DB2 log analysis
5615-DB2	IBM DB2 for z/OS, V11	For DB2 log analysis
5697-P37	IBM DB2 for z/OS Value Unit Edition, V11	For DB2 log analysis

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 Problem Investigator 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 Problem Investigator has no negative requisites.

5.2.3 DASD Storage Requirements

IMS Problem Investigator libraries can reside on all supported DASD types.

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

Figure 9. Total DASD Space Required by IMS Problem Investigator	
Library Type	**Total Space Required in 3390 Trks**
Target	1187 tracks
Distribution	1187 tracks

Notes:

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

2. Abbreviations used for data set types are shown as follows.

U Unique data set, allocated by this product and used by only this product. This table provides all the required information to determine the correct storage for this data set. You do not need to refer to other tables or program directories for the data set size.

S Shared data set, allocated by this product and used by this product and other products. To determine the correct storage needed for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.

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

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

For more information about the names and sizes of the required data sets, see 6.1.8, "Allocate SMP/E Target and Distribution Libraries" on page 20.

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

  - The default name of the data set 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.

4. 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.

5. 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 LNKLST.
  - These data sets are not required to be APF-authorized.

The following figures describe the target and distribution libraries required to install IMS Problem Investigator. The storage requirements of IMS Problem Investigator 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.

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
SALZBASE	Sample	Any	U	PDS	FB	80	3	2
SALZEXEC	Exec	Any	U	PDS	FB	80	7	2
SALZLINK	LMOD	Any	U	PDS	U	0	1069	270
SALZMENU	Message	Any	U	PDS	FB	80	6	6
SALZPENU	Panel	Any	U	PDS	FB	80	85	35
SALZSAMP	Sample	Any	U	PDS	FB	80	12	4
SALZSENU	Skel	Any	U	PDS	FB	80	3	2
SALZTENU	Table	Any	U	PDS	FB	80	2	2

Figure 10. Storage Requirements for IMS Problem Investigator Target 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
AALZBASE	U	PDS	FB	80	3	2
AALZEXEC	U	PDS	FB	80	7	2
AALZLINK	U	PDS	U	0	1069	270
AALZMENU	U	PDS	FB	80	6	6
AALZPENU	U	PDS	FB	80	85	35
AALZSAMP	U	PDS	FB	80	12	4
AALZSENU	U	PDS	FB	80	3	2
AALZTENU	U	PDS	FB	80	2	2

Figure 11. Storage Requirements for IMS Problem Investigator Distribution Libraries

5.3 FMIDs Deleted

Installing IMS Problem Investigator 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 Problem Investigator 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 Problem Investigator 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 Problem Investigator.

Please note the following points:

- If you want to install IMS Problem Investigator into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMPCSI and the SMP/E control data sets.

- You can use the sample jobs that are provided to perform part or all of the installation tasks. The SMP/E jobs assume that all DDDEF entries that are required for SMP/E execution have been defined in appropriate zones.

- You can use the SMP/E dialogs instead of the sample jobs to accomplish the SMP/E installation steps.

6.1 Installing IMS Problem Investigator

6.1.1 SMP/E Considerations for Installing IMS Problem Investigator

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

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 12. 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 12. SMP/E Options Subentry Values		
Subentry	**Value**	**Comment**
DSSPACE	(200,200,500)	3390 DASD tracks
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS Processing

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

- SCEELKED

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

6.1.4 Sample Jobs

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

Figure 13. Sample Installation Jobs			
Job Name	**Job Type**	**Description**	**RELFILE**
ALZALA	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set **(Optional)**	IBM.H28T240.F2
ALZALB	SMP/E	Sample job to allocate SMP/E data sets **(Optional)**	IBM.H28T240.F2
ALZRECEV	RECEIVE	Sample RECEIVE job	IBM.H28T240.F2
ALZALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.H28T240.F2
ALZDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.H28T240.F2
ALZAPPLY	APPLY	Sample APPLY job	IBM.H28T240.F2
ALZACCEP	ACCEPT	Sample ACCEPT job	IBM.H28T240.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 20) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 13 to find the appropriate relfile data set.

You can also copy the sample installation jobs from the tape or product files by submitting the following job. Depending on your distribution medium, use either the //TAPEIN or the //FILEIN DD statement and comment out or delete the other statement. 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=*
//*********************************************************
//* Make the //TAPEIN DD statement below active if you install*
//* from a CBPDO tape by uncommenting the DD statement below. *
//*********************************************************
//*TAPEIN   DD DSN=IBM.H28T240.F2,UNIT=tunit,
```

```
//*           VOL=SER=volser,LABEL=(x,SL),
//*           DISP=(OLD,KEEP)
//**************************************************************
//* Make the //TAPEIN DD statement below active if you install*
//* from a product tape received outside the CBPDO process    *
//* (using the optional SMP/E RECEIVE job) by uncommenting     *
//* the DD statement below.                                    *
//**************************************************************
//*TAPEIN   DD DSN=IBM.H28T240.F2,UNIT=tunit,
//*           VOL=SER=28T240,LABEL=(3,SL),
//*           DISP=(OLD,KEEP)
//**************************************************************
//* Make the //FILEIN DD statement below active for           *
//* downloaded DASD files.                                     *
//**************************************************************
//*FILEIN   DD DSN=IBM.H28T240.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=xxxxIN,OUTDD=OUT
/*
```

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

  TAPEIN:
    tunit is the unit value that matches the product package.
    volser is the volume serial that matches the product package.
    x is the tape file number that indicates the location of the data set name on the tape.
    See the documentation that is provided by CBPDO for the location of IBM.H28T240.F2 on the tape.
  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.
  SYSIN:
    xxxxIN is either TAPEIN or FILEIN depending on your input DD statement.

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 ALZALA to allocate the SMP/E data set for IMS Problem Investigator. 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 ALZALB to initialize SMP/E zones for IMS Problem Investigator. 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 Problem Investigator as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the IMS Problem Investigator 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 ALZRECEV to perform the SMP/E RECEIVE for IMS Problem Investigator. 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 ALZALLOC to allocate the SMP/E target and distribution libraries for IMS Problem Investigator. 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 Create DDDEF Entries

Edit and submit sample job ALZDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for IMS Problem Investigator. 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.

6.1.10 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job ALZAPPLY to perform an SMP/E APPLY CHECK for IMS Problem Investigator. 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.

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

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

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

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

6.1.11 Perform SMP/E ACCEPT

Edit and submit sample job ALZACCEP to perform an SMP/E ACCEPT CHECK for IMS Problem Investigator. 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.

6.1.12 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 Problem Investigator, 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.

6.1.13 Cleaning Up Obsolete Data Sets, Paths, and DDDEFs

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

- AALZLOAD

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

- AALZLOAD

6.2 Activating IMS Problem Investigator

6.2.1 Product Customization

The publication *IBM IMS Problem Investigator for z/OS User's Guide* (SC19-4367) contains the necessary information to customize and use IMS Problem Investigator.

7.0 Notices

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