



**Program Directory for
IBM IMS Program Restart Facility
for z/OS**

V02.02.00

Program Number 5655-E14

FMID H23D220

for Use with
z/OS

Document Date: January 2018

G110-8258-03

Note

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 26.

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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 Program Restart Facility for z/OS. This publication refers to IBM IMS Program Restart Facility for z/OS as IMS Program Restart Facility.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 4 identifies the basic program materials and documentation for IMS Program Restart Facility.
- 3.0, “Program Support” on page 7 describes the IBM support available for IMS Program Restart Facility.
- 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 Program Restart Facility.
- 5.0, “Installation Requirements and Considerations” on page 11 identifies the resources and considerations that are required for installing and using IMS Program Restart Facility.
- 6.0, “Installation Instructions” on page 18 provides detailed installation instructions for IMS Program Restart Facility. It also describes the procedures for activating the functions of IMS Program Restart Facility, or refers to appropriate publications.

Before installing IMS Program Restart Facility, 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 Program Restart Facility 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 Program Restart Facility are included on the CBPDO tape.

Do not use this program directory if you install IMS Program Restart Facility 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 Program Restart Facility Description

IBM IMS Program Restart Facility for z/OS, V2.2 (5655-E14) is an application management tool that helps automate the backout and restart of abended IMS Batch Message Processing (BMP) regions and Data Language/I (DL/I) batch jobs. Restarting IMS jobs is potentially error prone, as manual job control language (JCL) changes are required to add the checkpoint ID and the log data set name that contains the restart checkpoint. If either of these manual changes are incorrect or omitted, or if a job that should be restarted is not restarted, database corruption can occur.

IMS Program Restart Facility for z/OS assists with the following:

- A batch job requiring restart is restarted in accordance with proper restart procedures.
- Will identify and use the correct log data set and the correct checkpoint ID.
- The backout of abended DL/I batch jobs is automated without the need to manually code and execute multiple IMS utility jobs.
- Database availability is improved by automating IMS DL/I batch backout processing at the time an abend occurs (or when the job is restarted if backout cannot be done at abend time). The backout process releases database locks and makes database segments available to other tasks.

In a data sharing IMSplex environment, IMS Program Restart Facility for z/OS provides the additional feature of allowing a BMP to be restarted using a different IMS system. Taking advantage of this feature helps to provide improved restart times in the event of a system outage.

In addition, IMS Program Restart Facility for z/OS provides the ability to restart an IMS job on a different version of IMS than was in use when the job abended. This allows the implementation of an IMS version upgrade by simply abending running IMS jobs before the upgrade, and restarting the jobs after the upgrade is completed.

IMS Program Restart Facility for z/OS is easily implemented and typically requires no application changes. While an IMS batch job is running, IMS Program Restart Facility for z/OS intercepts and writes checkpoint records to two data sets. These data sets are deleted when the batch job completes successfully. In the event of an abend, however, the data sets remain in place and are used to restart the job.

IMS Program Restart Facility for z/OS, V2.2 offers:

- New ISPF interface:
 - The updated ISPF interface includes a new process for specifying IMS Program Restart Facility for z/OS options. The updated process provides for online help and verification for each parameter in the options data set. Additionally, with the new release, several new options are provided that were previously only available as user modifications.
- Significant reduction of contention when updating options:
 - IMS Program Restart Facility for z/OS options are now stored in load module format after being validated through the new ISPF interface. This eliminates ISPF EDIT contention that prevented IMS batch jobs from starting when updating the options data set.

- Maintenance roll-up, in particular:
 - Support for restarting jobs across different versions of IMS.
 - Capability to specify options based on job name, step name, and IMSID instead of only by job name.
- Support of IMS Versions 11, 12, and 13 and IMS Database Value Unit Edition Versions 12 and 13: Additional SMP/E maintenance, not included with the base product code, provides support for IMS Versions 14 and 15, and Database Value Unit Edition Versions 14 and 15.

IMS Program Restart Facility for z/OS, V2.2 contains all the functions of IBM IMS Batch Backout Manager for z/OS (5697-H75).

Contact your IBM representative for migrating to IMS Program Restart Facility for z/OS, V2.2 (5655-E14) and its Subscription and Support (5655-E17) if you:

- Purchased IBM IMS Batch Backout Manager for z/OS (5697-H75) and its Subscription and Support (5697-H76)
- Are current with the subscription

1.2 IMS Program Restart Facility FMID

IMS Program Restart Facility consists of the following FMID:

H23D220

2.0 Program Materials

An IBM program is identified by a program number and a feature number. The program number for IMS Program Restart Facility is 5655-E14 and its feature number is 6000.

Basic Machine-Readable Materials are materials that are supplied under the base license and feature numbers, and are required for the use of the product.

The program announcement material describes the features supported by IMS Program Restart Facility. 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 18 for more information about how to install the program.

Figure 1 describes the program file content for IMS Program Restart Facility. 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. Program File Content

Name	ORG	RECFM	LEN	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.H23D220.F1	PDS	FB	80	8800
IBM.H23D220.F2	PDS	FB	80	8800
IBM.H23D220.F3	PDS	FB	80	8800
IBM.H23D220.F4	PDS	FB	80	8800
IBM.H23D220.F5	PDS	U	0	6144
IBM.H23D220.F6	PDS	FB	80	8800
IBM.H23D220.F7	PDS	FB	80	8800
IBM.H23D220.F8	PDS	FB	80	8800

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for IMS Program Restart Facility.

2.3 Program Publications

The following sections identify the basic publications for IMS Program Restart Facility.

Figure 2 identifies the basic unlicensed publications for IMS Program Restart Facility. Publications can be accessed at the IBM Publications Center website at:

<http://www.ibm.com/e-business/linkweb/publications/servlet/pbi.wss>

<i>Figure 2. Basic Material: Unlicensed</i>		
Publication Title	Form Number	Location
IBM IMS Program Restart Facility for z/OS License Information	GC27-0911	http://www.ibm.com/software/sla/sladb.nsf
IBM IMS Program Restart Facility for z/OS User's Guide	SC19-3985	http://www.ibm.com/support/docview.wss?uid=swg27020942

No optional publications are provided for IMS Program Restart Facility.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for IMS Program Restart Facility.

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 3 during the installation of IMS Program Restart Facility. To order copies, contact your IBM representative or visit the IBM Publications Center at:

<http://www.ibm.com/e-business/linkweb/publications/servlet/pbi.wss>

<i>Figure 3 (Page 1 of 2). Publications Useful During Installation</i>	
Publication Title	Form Number
<i>IBM SMP/E for z/OS User's Guide</i>	SA22-7773
<i>IBM SMP/E for z/OS Commands</i>	SA22-7771
<i>IBM SMP/E for z/OS Reference</i>	SA22-7772

Figure 3 (Page 2 of 2). Publications Useful During Installation

Publication Title	Form Number
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA22-7770

3.0 Program Support

This section describes the IBM support available for IMS Program Restart Facility.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install IMS Program Restart Facility, 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 6.1.9, "Perform SMP/E APPLY" on page 21 for a sample APPLY command

If you obtained IMS Program Restart Facility as part of a CBPDO, HOLDDATA is included.

If the CBPDO for IMS Program Restart Facility 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 Program Restart Facility are included in Figure 4

Figure 4. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
5655E14	H23D220	IMS Program Restart Facility

3.3 Statement of Support Procedures

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

Figure 5 identifies the component IDs (COMPID) for IMS Program Restart Facility.

<i>Figure 5. Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
H23D220	5655E1400	IMS Program Restart Facility	220

4.0 Program and Service Level Information

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

- FMID H23D210 (IMS Program Restart Facility V2.1 - COMPID 5655E1400)

PQ47073	PQ98851	PK77325
PQ48026	PK00128	PK79908
PQ48231	PK09539	PK83015
PQ49424	PK17405	PK87057
PQ49877	PK19196	PM14554
PQ50671	PK20064	PM14756
PQ50712	PK24702	PM23645
PQ50767	PK24919	PM26055
PQ52134	PK27066	PM26493
PQ54592	PK29649	PM30538
PQ56746	PK31943	PM32550
PQ58128	PK32088	PM36532
PQ59696	PK32684	PM36743
PQ60462	PK39154	PM39913
PQ62340	PK44071	PM40468
PQ70718	PK44755	PM40788
PQ76333	PK45226	PM41933
PQ79074	PK45993	PM42851
PQ81956	PK46793	PM54687
PQ83473	PK47944	PM59113
PQ84911	PK49227	PM70177
PQ86315	PK49768	PM70365
PQ86995	PK66783	PM71145
PQ90127	PK67034	PM75617
PQ92625	PK69100	PM82746
PQ93475	PK74369	PM83089
PQ94552	PK74370	PM83252

- FMID H32B110 (IMS Batch Backout Manager V1.1 - COMPID 5697H7500)

PQ66673	PQ91137	PK74371
PQ65727	PQ98581	PM12699
PQ68295	PK20491	PM26481
PQ69523	PK22027	PM35772
PQ72176	PK23742	PM36635
PQ76356	PK32686	PM56190
PQ79075	PK33270	PM73510
PQ88969	PK49306	PM75612

4.2 Service Level Information

No PTFs against this release of IMS Program Restart Facility have been incorporated into the product package.

Frequently check the IMS Program Restart Facility 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 Program Restart Facility. 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 Program Restart Facility.

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	V01.12.00	N/A	No
5650-ZOS	z/OS	V02.01.00	N/A	No
5655-G44	IBM SMP/E for z/OS	V03.05.00	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 Program Restart Facility.

IMS Program Restart Facility 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.

Figure 7. Target System Mandatory Installation Requisites

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in this product's shipment?
Any one of the following:				
5694-A01	z/OS	V01.12.00 or higher	N/A	No
5650-ZOS	z/OS	V02.01.00	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.

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 Program Restart Facility 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 8. Target System Mandatory Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level
Any one of the following:	
5635-A02	IBM IMS V11.01.00
5635-A03	IBM IMS V12.01.00
5655-DSQ	IBM IMS Database Value Unit Edition V12.01.00 (with IMS Value Unit Edition PTF UK93908)
5635-A04	IBM IMS V13.01.00
5655-DSM	IBM IMS Database Value Unit Edition V13.01.00
5635-A05	IBM IMS V14.01.00
5655-DSE	IBM IMS Database Value Unit Edition V14.01.00
5635-A06	IBM IMS V15.01.00
5655-TM4	IBM IMS Database Value Unit Edition V15.01.00

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.

IMS Program Restart Facility has no conditional operational requisites.

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 Program Restart Facility 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 Program Restart Facility has no negative requisites.

5.2.3 DASD Storage Requirements

IMS Program Restart Facility libraries can reside on all supported DASD types.

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

<i>Figure 9. Total DASD Space Required by IMS Program Restart Facility</i>	
Library Type	Total Space Required in 3390 Trks
Target	154 tracks
Distribution	144 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 6.1.7, "Allocate SMP/E Target and Distribution Libraries" on page 21.

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 cannot 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 Program Restart Facility. The storage requirements of IMS Program Restart Facility 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 10. Storage Requirements for IMS Program Restart Facility 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
SIRTBASE	Samples	Any	U	PDS	FB	80	10	5
SIRTDATA	Data	Any	U	PDS	FB	80	10	5
SIRTEXEC	Exec	Any	U	PDS	FB	80	5	5
SIRTLOAD	Modules	Any	U	PDS	U	0	80	30
SIRTMENU	Messages	Any	U	PDS	FB	80	6	5
SIRTPENU	Panels	Any	U	PDS	FB	80	38	20
SIRTSAMP	Data	Any	U	PDS	FB	80	5	5

Figure 11. Storage Requirements for IMS Program Restart Facility 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
AIRTBASE	U	PDS	FB	80	10	5
AIRTDATA	U	PDS	FB	80	10	5
AIRTEXEC	U	PDS	FB	80	5	5
AIRTLOAD	U	PDS	U	0	70	30
AIRTMENU	U	PDS	FB	80	6	5
AIRTPENU	U	PDS	FB	80	38	20
AIRTSAMP	U	PDS	FB	80	5	5

5.3 FMIDs Deleted

Installing IMS Program Restart Facility 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 Program Restart Facility 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 Program Restart Facility for z/OS, V2.2 includes all features and functions of IBM IMS Batch Backout Manager for z/OS (program number 5697-H75) and replaces this product. Installing IMS Program Restart Facility results in the deletion of multiple FMIDs including the IMS Batch Backout Manager FMIDs. To see which FMIDs are 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 Program Restart Facility into separate SMP/E target and distribution zones.

Depending on whether IMS Program Restart Facility, V2.1 and/or IMS Batch Backout Manager, V1.1 is installed, there will be differences in the customization process. For the most part, the customization process involves the following steps:

- Removing the prior versions of these two products.
- Converting from the old inclusion options to the new format IRTOPT data set. If either or both of these products are installed, a conversion utility provides a means to create the IRTOPT data set from the inclusion options data sets of IMS Program Restart Facility and Batch Backout Manager.

For more information refer to *IBM IMS Program Restart Facility for z/OS User's Guide, SC19-3985*.

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 Program Restart Facility.

Please note the following points:

- If you want to install IMS Program Restart Facility 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 Program Restart Facility

6.1.1 SMP/E Considerations for Installing IMS Program Restart Facility

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of IMS Program Restart Facility.

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 Sample Jobs

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

Figure 13. Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
IRTALA	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set (Optional)	IBM.H23D220.F2
IRTALB	SMP/E	Sample job to allocate SMP/E data sets (Optional)	IBM.H23D220.F2
IRTRECEV	RECEIVE	Sample RECEIVE job	IBM.H23D220.F2
IRTALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.H23D220.F2
IRTDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.H23D220.F2
IRTAPPLY	APPLY	Sample APPLY job	IBM.H23D220.F2
IRTACCEP	ACCEPT	Sample ACCEPT job	IBM.H23D220.F2

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.6, “Perform SMP/E RECEIVE” on page 21) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 13 on page 18 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.H23D220.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.H23D220.F2,UNIT=tunit,
/* VOL=SER=23D220,LABEL=(3,SL),
/* DISP=(OLD,KEEP)
//*****
/* Make the //FILEIN DD statement below active for *
/* downloaded DASD files. *
//*****
/*FILEIN DD DSN=IBM.H23D220.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.H23D220.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.

6.1.4 Allocate SMP/E CSI (Optional)

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

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

6.1.5 Initialize CSI zones (Optional)

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

Edit and submit sample job IRTALB to initialize SMP/E zones for IMS Program Restart Facility. Consult the instructions in the sample job for more information.

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

6.1.6 Perform SMP/E RECEIVE

If you have obtained IMS Program Restart Facility as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the IMS Program Restart Facility 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 IRTRECEV to perform the SMP/E RECEIVE for IMS Program Restart Facility. 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 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job IRTALLOC to allocate the SMP/E target and distribution libraries for IMS Program Restart Facility. Consult the instructions in the sample job for more information.

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

6.1.8 Create DDDEF Entries

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

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

6.1.9 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job IRTAPPLY to perform an SMP/E APPLY CHECK for IMS Program Restart Facility. 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(NOAPARS,NOUSERMODS)
RETRY(YES)
BYPASS(HOLDSYSTEM,HOLDUSER).
```

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(NOAPARS,NOUSERMODS)
RETRY(YES)
BYPASS(HOLDSYSTEM,HOLDUSER,HOLDCLASS(HIPER)).
..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.

6.1.10 Perform SMP/E ACCEPT

Edit and submit sample job IRTACCEP to perform an SMP/E ACCEPT CHECK for IMS Program Restart Facility. 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.

6.1.11 Run REPORT CROSSZONE

The SMP/E REPORT CROSSZONE command identifies requisites for products that are installed in separate zones. This command also creates APPLY and ACCEPT commands in the SMPPUNCH data set. You can use the APPLY and ACCEPT commands to install those cross-zone requisites that the SMP/E REPORT CROSSZONE command identifies.

After you install IMS Program Restart Facility, 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.

6.1.12 Cleaning Up Obsolete Data Sets, 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.

- SIRTMLIB
- SIRTPLIB
- SIRTTLIB
- AIRTMLIB
- AIRTPLIB
- AIRTTLIB

If you previously had IMS Batch Backout Manager installed, the following data sets are no longer used. You can delete these obsolete data sets after you delete IMS Batch Backout Manager from your system.

- SBCMBASE
- SBCMDATA
- SBCMEXEC
- SBCMLINK
- SBCMSAMP
- ABCMBASE
- ABCMDATA
- ABCMEXEC
- ABCMLINK
- ABCMSAMP

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.

- SIRTMLIB
- SIRTPLIB
- SIRTTLIB

- AIRTMLIB
- AIRTPLIB
- AIRTTLIB

If you previously had IMS Batch Backout Manager installed, the following DDDEF entries are no longer used. You can delete these obsolete DDDEF entries after you delete IMS Batch Backout Manager from your system.

- SBCMBASE
- SBCMDATA
- SBCMEXEC
- SBCMLINK
- SBCMSAMP
- ABCMBASE
- ABCMDATA
- ABCMEXEC
- ABCMLINK
- ABCMSAMP

6.2 Activating IMS Program Restart Facility

The publication *IBM IMS Program Restart Facility for z/OS User's Guide, SC19-3985* contains the necessary information to customize and use IMS Program Restart Facility.

7.0 Notices

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Printed in USA

G110-8258-03

