



**Program Directory for
IBM CICS Interdependency Analyzer
for z/OS**

V5.5.0

Program Number 5655-Y22

FMIDs H274550, J27455E, J27455K

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 27.

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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 CICS Interdependency Analyzer for z/OS. This publication refers to CICS Interdependency Analyzer for z/OS as CICS IA.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic program materials and documentation for CICS IA.
- 3.0, “Program Support” on page 5 describes the IBM support available for CICS IA.
- 4.0, “Program and Service Level Information” on page 7 lists the APARs (program level) and PTFs (service level) that have been incorporated into CICS IA.
- 5.0, “Installation Requirements and Considerations” on page 9 identifies the resources and considerations that are required for installing and using CICS IA.
- 6.0, “Installation Instructions” on page 18 provides detailed installation instructions for CICS IA. It also describes the procedures for activating the functions of CICS IA, or refers to appropriate publications.

Before installing CICS IA, 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 5 tells you how to find any updates to the information and procedures in this Program Directory.

CICS IA 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 CICS IA are included on the CBPDO tape.

Do not use this Program Directory if you install CICS IA 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 CICS IA Description

CICS IA is a productivity tool that automates discovery of run-time resource relationships within CICS applications, giving customers a comprehensive picture of how their CICS applications really work. It can be used by all who build, manage, and deploy complex mainframe CICS applications.

What's new in CICS IA V5.5

- CICS Version 5.5 Support - CICS IA Version 5.5 adds support for the latest release of CICS. CICS Interdependency Analyzer features providing threadsafe analysis have been updated in line with the latest changes when analyzing for a CICS 5.5 system.

- Improved CICS IA views - Within the CICS IA perspective (plug-in), changes have been made to
 - IA Navigation - For command flows, the transaction id is now listed with the timestamp of a command flow trace, to more quickly identify the transaction you may be interested in.
 - Used By views - Wording has been added and changed to be more explicit about what programs or transactions are returning, transferring control, starting or linking to other programs or transactions.
This makes the view more quickly understandable.

1.2 CICS IA FMIDs

CICS IA consists of the following FMIDs:

H274550
J27455E
J27455K

2.0 Program Materials

An IBM program is identified by a program number. The program number for CICS IA is 5655-Y22.

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. Optional Machine-Readable Materials are orderable under separate feature numbers, and are not required for the product to function.

The program announcement material describes the features supported by CICS IA. Ask your IBM representative for this information if you have not already received a copy. Also, visit <http://www.ibm.com/support/docview.wss?rs=1083&context=SSGMGV&uid=swg21227090#Tools>

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.

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

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for CICS IA.

2.3 Program Publications

The following sections identify the basic publications for CICS IA.

Figure 1 identifies the basic unlicensed publications for CICS IA. Publications can be accessed at the IBM Publications Center website at <http://www.ibm.com/shop/publications/order/>

Publication Title	Form Number	Media Format
License information DVD for CICS Interdependency Analyzer for z/OS	GC34-7378	DVD
CICS Interdependency Analyzer for z/OS: Program Directory	GI13-4436-00	IBM Publications Center
CICS Interdependency Analyzer for z/OS: User's Guide and Reference	SC34-7377	IBM Publications Center

No optional publications are provided for CICS IA.

2.4 Program Source Materials

Customers with access to View Program Listings (VPL), such as through S/390 SoftwareXcel, can use the VPL facility for online viewing of available program listings. Customers without access to VPL can contact their IBM representative for available program listings.

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 2 during the installation of CICS IA. To order copies, contact your IBM representative or visit the IBM Publications Center at:

<http://www.ibm.com/shop/publications/order/>

Additionally, online documentation for CICS IA is hosted in IBM Knowledge Center, which provides integrated tools for finding, filtering, customizing, saving, and sharing information. Documentation for CICS IA in IBM Knowledge Center is refreshed regularly to reflect feedback from users, and to include changes that result from IBM service. For CICS IA product documentation in IBM Knowledge Center, refer to

<http://www.ibm.com/support/knowledgecenter/SSPPUS>

Figure 2. Publications Useful During Installation

Publication Title	Form Number	Media Format
<i>IBM SMP/E for z/OS User's Guide</i>	SA22-7773	Softcopy
<i>IBM SMP/E for z/OS Commands</i>	SA22-7771	Softcopy
<i>IBM SMP/E for z/OS Reference</i>	SA22-7772	Softcopy
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA22-7770	Softcopy

3.0 Program Support

This section describes the IBM support available for CICS IA.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install CICS IA, 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 24 for a sample APPLY command.

If you obtained CICS IA as part of a CBPDO, HOLDDATA is included.

If the CBPDO for CICS IA 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.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 CICS IA are included in Figure 3.

Figure 3. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
CICSIA55	H274550	Base function FMID
	J27455E	English function FMID
	J27455K	Japanese function FMID

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 4 on page 6 identifies the component IDs (COMPID) for CICS IA.

<i>Figure 4. Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
H274550	5655Y2200	CICS IA Base Function	550
J27455E	5655Y2200	CICS IA English Function	55E
J27455K	5655Y2200	CICS IA Japanese Function	55K

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of CICS IA. 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 CICS Interdependency Analyzer for z/OS have been incorporated into this release. They are listed by FMID.

- FMID H274550

PI22022	PI42920	PI71588
PI22024	PI45403	PI72053
PI22159	PI48935	PI74028
PI22638	PI49161	PI74299
PI24000	PI49474	PI74678
PI24634	PI49610	PI74750
PI24932	PI50611	PI76912
PI26325	PI53503	PI78311
PI27196	PI54002	PI78312
PI27198	PI58061	PI78699
PI27199	PI58119	PI79508
PI29675	PI59147	PI80445
PI29677	PI61475	PI81399
PI29952	PI61481	PI82154
PI29955	PI62694	PI82303
PI30268	PI62803	PI82549
PI32875	PI65227	PI83489
PI32929	PI67222	PI83868
PI34049	PI67548	PI84341
PI36276	PI67651	PI84833
PI37281	PI68407	PI86179
PI38229	PI69108	PI87879
PI38809	PI69121	PI89352
PI40594	PI71483	PI89902
PI42667		

- FMID J27455E

PI24634	PI37281
PI29677	PI38809

- FMID J27455K

PI24634
PI29677

PI37281
PI38809

4.2 Service Level Information

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

It is highly recommended that you frequently check the CICS IA 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 CICS IA. 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 CICS IA.

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 5. 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:				
5650-ZOS	z/OS	V2.2 and above	N/A	No
5655-G44	IBM SMP/E for z/OS	V3.6.0	N/A	No

Note: Installation might require migration to new z/OS releases to be service supported.

See http://www.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 that is required to install and use CICS IA.

CICS IA installs in the CICS (C150) 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 by and *must* be present on the system or products that are not required by but *should* be present on the system for the successful installation of this product.

Mandatory installation requisites identify products that are required on the system for the successful installation of this product. These products are specified as PREs or REQs.

Figure 6 (Page 1 of 2). Target System Mandatory Installation Requisites

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
Any one of the following:				

Figure 6 (Page 2 of 2). Target System Mandatory Installation Requisites

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5694-A01	z/OS	V1.13 and above	N/A	No
5650-ZOS	z/OS	V2.1 and above	N/A	No
Any one of the following:				
5655-Y04	CICS TS	V5.1 or higher	N/A	No

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

Note: The CICS IA Collector can run on versions of CICS TS that are no longer in service. These include

- CICS Transaction Server for z/OS V4.1 or V4.2
- CICS Transaction Server for z/OS V3.1 or V3.2
- CICS Transaction Server for z/OS V2.2 or V2.3

5.2.2.2 Operational Requisites

Operational requisites are products that are required by and *must* be present on the system or products that are not required by 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. These products are specified as PREs or REQs.

Figure 7 (Page 1 of 2). Target System Mandatory Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level
Any one of the following:	
5615-DB2	DB2 for z/OS, V11.1 or later
5697-P43	DB2 Value Unit Edition for z/OS, V11.1 or later
Any one of the following:	
5655-W87	Utilities: DB2 Utilities Suite for z/OS, V11.1 or later
	Utilities: An equivalent vendor DB2 Utilities package
Any one of the following:	

Figure 7 (Page 2 of 2). Target System Mandatory Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level
5694-A01	DFSORT Z/OS 1.9 or later
	An equivalent vendor SORT utility
Any one of the following:	
5655-Y04	CICS TS, V5.1 or later

Note:

The following PTF for APAR PI19804 must be applied to DB2 V11:

- UI20622

Note:

If the user wants to share VSAM files across CICS regions within a SYSPLEX, the VSAM RLS function of DFSMS is required.

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

CICS IA 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.

CICS IA 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.

CICS IA has no negative requisites.

5.2.3 DASD Storage Requirements

CICS IA libraries can reside on all supported DASD types.

Figure 8 lists the total space that is required for each type of library.

Figure 8. Total DASD Space Required by CICS IA

Library Type	Total Space Required in 3390 Trks	File System Description
Target	435 Tracks	
Distribution	379 Tracks	
File System	660 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 6.1.6, “Allocate SMP/E Target and Distribution Libraries” on page 21.

3. Abbreviations used for the file system path type are as follows.

- N** New path, created by this product.
- X** Path created by this product, but might already exist from a previous release.
- P** Previously existing path, created by another product.

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

- The default name of the data set can be changed.
- The default block size of the data set can be changed.

- The data set can be merged with another data set that has equivalent characteristics.
- The data set can be either a PDS or a PDSE.

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

The following figures describe the target and distribution libraries and file system paths required to install CICS IA. The storage requirements of CICS IA must be added to the storage required by other programs that have data in the same library or path.

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

Figure 9 (Page 1 of 2). Storage Requirements for CICS IA Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SCIUINST	SAMP	ANY	U	PDS	FB	80	8	2
SCIUDAT1	SAMP	ANY	U	PDS	FB	80	8	3
SCIUDAT2	SAMP	ANY	U	PDS	FB	110	2	2
SCIUDAT3	SAMP	ANY	U	PDS	FB	2048	220	5
SCIUDBRM	SAMP	ANY	U	PDS	FB	80	15	3
SCIUEXEC	SAMP	ANY	U	PDS	FB	80	12	2
SCIUSAMP	SAMP	ANY	U	PDS	FB	80	70	5
SCIUSQL	SAMP	ANY	U	PDS	FB	80	80	16
SCIUSRCE	SAMP	ANY	U	PDS	FB	80	2	2
SCIULOAD	LMOD	ANY	U	PDS	U	0	120	100
SCIUMLIE	SAMP	ANY	U	PDS	FB	80	2	2
SCIUPLIE	SAMP	ANY	U	PDS	FB	80	16	30
SCIUSAME	SAMP	ANY	U	PDS	FB	80	2	2

Figure 9 (Page 2 of 2). Storage Requirements for CICS IA 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
SCIUTLIE	SAMP	ANY	U	PDS	FB	80	2	2
SCIULODE	LMOD	ANY	U	PDS	U	0	20	10
SCIUMLIK	SAMP	ANY	U	PDS	FB	80	2	2
SCIUPLIK	SAMP	ANY	U	PDS	FB	80	16	30
SCIUSAMK	SAMP	ANY	U	PDS	FB	80	2	2
SCIUTLIK	SAMP	ANY	U	PDS	FB	80	2	2
SCIULODK	LMOD	ANY	U	PDS	U	0	20	10

Figure 10. CICS IA File System Paths

DDNAME	T Y P E	Path Name
SCIUWSDL	N	/usr/lpp/cicsia/@ciurel@/IBM
SCIUWSBN	N	/usr/lpp/cicsia/@ciurel@/IBM

Figure 11 (Page 1 of 2). Storage Requirements for CICS IA 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
ACIUINST	U	PDS	FB	80	8	2
ACIUMOD	U	PDS	U	0	100	100
ACIU DAT1	U	PDS	FB	80	8	3
ACIU DAT2	U	PDS	FB	110	2	2
ACIU DAT3	U	PDS	FB	2048	220	5
ACIU DBRM	U	PDS	FB	80	15	3
ACIU EXEC	U	PDS	FB	80	12	2
ACIU SAMP	U	PDS	FB	80	70	5
ACIU SQL	U	PDS	FB	80	80	16
ACIU SRCE	U	PDS	FB	80	2	2

Figure 11 (Page 2 of 2). Storage Requirements for CICS IA 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
ACIUWSDL	U	PDS	V	32000	4	2
ACIUWSBN	U	PDS	V	32000	4	2
ACIU MODE	U	PDS	U	0	15	10
ACIUMLIE	U	PDS	FB	80	2	2
ACIUPLIE	U	PDS	FB	80	16	30
ACIUSAME	U	PDS	FB	80	2	2
ACIU TLIE	U	PDS	FB	80	2	2
ACIU MODK	U	PDS	U	0	15	10
ACIUMLIK	U	PDS	FB	80	2	2
ACIUPLIK	U	PDS	FB	80	16	30
ACIUSAMK	U	PDS	FB	80	2	2
ACIU TLIK	U	PDS	FB	80	2	2

5.3 FMIDs Deleted

Installing CICS IA 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 CICS IA 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 manuals for instructions.

5.4 Special Considerations

5.4.1 IBM CICS Explorer

IBM CICS Explorer is an integration point for CICS TS, CICS tools, and CICS Transaction Gateway. It provides a common, intuitive, easy-to-use way of managing one or more CICS regions, using an Eclipse-based environment that is aimed at architects, developers, administrators, system programmers and operators.

CICS IA V5.5 customers, using the CICS Explorer with the CICS IA plug-in, are able to intuitively query CICS relationship data, manage queries and navigate through complex application relationships from a standard interface. The CICS IA plug-in integrates with other CICS Explorer perspectives, for example, to click on a transaction in a CICS Performance Analyzer (CICS PA) bar chart and immediately see its dependencies, relationships, and affinities.

5.4.1.1 Supported platforms

For CICS Explorer requirements, visit <http://www.ibm.com/software/htp/cics/explorer/requirements/>

5.4.1.2 Availability

CICS Explorer is available as a no-charge optional feature of CICS IA V5.5. Further information about the CICS Explorer and how to download it can be found at <http://www.ibm.com/cics/explorer>

5.4.1.3 Service and Support

Details relating to service and support for the CICS Explorer are available at <http://www.ibm.com/support/docview.wss?rs=1083&uid=swg21380083>

5.4.2 SMP/E Considerations

IBM recommends that you install CICS IA into a new set of SMP/E zones, including SMPCSI, target, distribution, and zFS data sets, to allow independent maintenance of CICS IA, z/OS, and other subsystems. This Program Directory provides sample jobs and instructions to create such an SMP/E environment.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of CICS IA.

Please note the following points:

- If you want to install CICS IA 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 CICS IA

6.1.1 SMP/E Considerations for Installing CICS IA

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of CICS IA.

All installation steps must be run from a user ID that is defined to UNIX Systems Services, and has the following attributes:

- UID(0) or READ access or higher to the BPX.SUPERUSER facility class.
- READ access or higher to the BPX.FILEATTR.PROGCTL and BPX.FILEATTR.APF and BPX.FILEATTR.SHARELIB facility classes.

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.

<i>Figure 12. SMP/E Options Subentry Values</i>		
Subentry	Value	Comment
DSSPACE	(55,18,24)	
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS Processing

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

- SCEELKED
- SDSNLOAD
- SDFHLOAD

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

6.1.4 Sample Jobs

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

<i>Figure 13. Sample Installation Jobs</i>			
Job Name	Job Type	Description	RELFILE
CIUSMPSU	ZONES	Sample job to set up SMP/E zones (see note below)	IBM.H274550.F2
CIUALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.H274550.F2
CIUBXP0	Mount points	Sample job to create mountpoints for this instance of CICS IA	IBM.H274550.F2
CIUBXP1	Mount points	Sample job to create mountpoints for this instance of CICS IA	IBM.H274550.F2
CIUIHFS0	zFS	Sample job to create zFS and mountpoint for CICS IA	IBM.H274550.F2
CIUIHFS1	zFS	Sample job to create zFS and mountpoint for this instance of CICS IA	IBM.H274550.F2
CIUISMKD	MKDIR	Sample job to invoke the supplied CIUMKDIR EXEC to allocate zFS paths	IBM.H274550.F2
CIUDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.H274550.F2
CIURECV	RECEIVE	Sample RECEIVE job	IBM.H274550.F2
CIURECVE	RECEIVE	Sample RECEIVE job for electronic/disk input	IBM.H274550.F2
CIUAPPLY	APPLY	Sample APPLY job	IBM.H274550.F2
CIUACCPT	ACCEPT	Sample ACCEPT job	IBM.H274550.F2

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.11, “Perform SMP/E RECEIVE” on page 23) 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=*
//TAPEIN DD DSN=IBM.H274550.F2,UNIT=tunit,
// VOL=SER=volser,LABEL=(x,SL),
// DISP=(OLD,KEEP)
//FILEIN DD DSN=IBM.H274550.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,(primary,secondary,dir))
//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.H274550.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.

Customize each of the sample jobs listed in Figure 13 on page 19. Each sample job contains comments with specific instructions for customization.

6.1.5 Prepare the installation environment

6.1.5.1 Global zone

If you are installing into an existing global zone, check that:

- The PEMAX option entry is set to 9999, or left to default.
- The DSSPACE options entry specifies at least 800 directory blocks.

If you are installing into a new global zone, edit and submit sample job CIUSMPSU to create a new SMP/E global zone for CICS IA. Ensure that the job card is valid for your system. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: CIUSMPSU has a number of steps, all of which should complete with a return code of 0.

If any of the return codes is not 0, inspect the job output to determine what caused the problem and correct it, then rerun the job from the step that failed.

6.1.5.2 Target and distribution zones

If you need to create new target and distribution zones for CICS IA, edit and submit the following sample jobs:

- CIUSMPSU to create a new target zone.
- CIUSMPSU to create a new distribution zone.

Ensure in each case that the job card is valid for your system. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: 0

Both jobs consist of a number of steps, all of which should complete with a return code of 0.

If any of the return codes is not 0, inspect the job output to determine what caused the problem, correct it, and then rerun the job from the step that failed.

6.1.6 Allocate SMP/E Target and Distribution Libraries

Customize and run sample job CIUALLOC to allocate the SMP/E target and distribution libraries for CICS IA. Refer to the instructions in the sample job for more information.

Make sure the data sets are allocated on the required volumes.

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

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

6.1.7 The CIUIHFS0 Job

The **CIUIHFS0** Job creates a directory (`/usr/lpp/cicsia`) that is used as a parent directory for the zFS mounts required for each CICS IA release. This directory and mount only need to be created once for all CICS IA releases, and if the directory currently exists the job should not be run. The follow up job **CIUIHFS1** creates a release specific zFS mounted in this directory for this release of CICS IA.

This job

- Creates the `cicsia` directory at `/usr/lpp`
- Mounts the zFS at directory `/usr/lpp/cicsia`
- Changes the permission settings for the `/usr/lpp/cicsia` directory to:
 - Owner=RWX
 - Group=RWX
 - Other=R-X

(InYoctal-form: 775)

Where:

- R equates to Read
- W equates to Write
- X equates to Execute
- - equates to no permission

Notes:

1. **CIUIHFS0** only needs to be run once.
2. RACF ALTER ACCESS to the zFS data sets must be granted before running this **CIUIHFS0**.
3. The `/usr/lpp/cicsia` directory contains only directories, each being a mount point.
4. CICS IA requires the MOUNT issued by **CIUIHFS0** to access files stored in the zFS, but the MOUNT command is lost when you re-IPL MVS. SCIUIINST member CIUBXP0 contains a MOUNT command for `/usr/lpp/cicsia`. Copy this command into a BPXPRMxx member of the SYS1.PARMLIB data set to ensure the mount is restored when MVS is IPLed.
5. All steps of **CIUIHFS0** must end with return code zero for the job to be successful.

6.1.8 The CIUIHFS1 Job

The **CIUIHFS1** job creates a release specific zFS mounted `/usr/lpp/cicsia` for this release of CICS IA. It

- Unmounts the zFS at directory `/usr/lpp/cicsia/ciurel` to allow the job to be rerun, and if necessary forces return code zero.

- Deletes from `/usr/lpp/cicsia` the directory defined by the `ciurel` parameter. This is to allow the job to rerun, and if necessary forces return code zero.
- Deletes the zFS specified in the `@hfs1dsn@` variable to allow the job to rerun, and if necessary forces return code zero.
- Creates the zFS specified by the `@hfs1dsn@` variable
- Creates the `ciurel` directory at `/usr/lpp/cicsia`, where `ciurel` is the name of the directory specified on the `ciurel` parameter.
- Mounts the zFS at directory `/usr/lpp/cicsia/ciurel`
- Changes the permission settings for the `ciurel` directory to 775.

All steps of **CIUIHFS1** must end with return code zero for the job to be successful.

CICS IA requires the MOUNT issued by **CIUIHFS1** to access files stored in the zFS, but the MOUNT command is lost when you re-IPL MVS. SCIUINST member CIUBXP1 contains a MOUNT command for `/usr/lpp/cicsia/ciurel`. Copy this command into a BPXPRMxx member of the SYS1.PARMLIB data set to ensure the mount is restored when MVS is IPLed.

6.1.9 The CIUISMKD Job

This job creates the directories in zFS.

The highest expected return code is 0.

6.1.10 Define DDDEF Entries

Customize and run the sample job CIUDDDEF to create SMP/E DDDEFs for target and distribution data sets and directories. Make sure the call library DDDEFs point to the corresponding data sets for your z/OS target system.

Check the job output to verify that all directories have been created.

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

6.1.11 Perform SMP/E RECEIVE

If you have obtained CICS IA as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the CICS IA 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 **CIURECV** (tape) or **CIURECVE** (electronic/disk) to perform the SMP/E RECEIVE for CICS IA. 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 CIUAPPLY to perform an SMP/E APPLY CHECK for CICS IA. Consult the instructions in the sample job for more information.

HOLDDATA introduces ERROR HOLDS against FMIDs for HIPER APARs. Before the installation, ensure that you have the latest HOLDDATA, which is available through several different portals, including <http://service.software.ibm.com/holdata/390holddata.html>. Install the FMIDs regardless of the status of unresolved HIPERs. However, do not deploy the software until the unresolved HIPERs are analyzed to determine applicability.

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 is a sample to install FMIDs when ++HOLDS for HIPERs exist for the FMIDs that you install:

- a. To ensure that all recommended and critical service is installed with the FMIDs, if you have received the latest HOLDDATA, add the FIXCAT operand to the APPLY command as shown below.

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

Some HIPER APARs might not have PTFs available yet. You have to analyze the symptom flags to determine if you want to bypass the specific ERROR HOLDS and continue the installation of the FMIDs.

This method requires more initial research, but can provide resolution for all HIPERs that have fixes 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 the HIPERs, you can add a BYPASS(HOLDCLASS(HIPER)) operand to the APPLY command. In this way, you can install FMIDs even though HIPER ERROR HOLDS against them still exist. Only the HIPER ERROR HOLDS are bypassed. After the FMIDs are installed, run the SMP/E REPORT ERRSYSMODS command to identify missing HIPER maintenance.

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

This method is the quicker of the two, but requires subsequent review of the REPORT ERRSYSMODS to investigate any HIPERs. If you have received the latest HOLDDATA, you can

also choose to run REPORT MISSINGFIX for Fix Category IBM.ProductInstall-RequiredService to investigate missing recommended service.

If you bypass HOLDS during the installation of the FMIDs because PTFs are not yet available, you can be notified when the 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.

6.1.13 Perform SMP/E ACCEPT

Edit and submit sample job CIUACCT to perform an SMP/E ACCEPT CHECK for CICS IA. 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 CICS IA, 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 CICS IA

6.2.1 File System Execution

If you choose to mount the file system in which you have installed CICS IA in read-only mode during execution, then you do not have to take further actions to activate CICS IA.

6.3 Product Customization

CICS IA is fully operational after the SMP/E installation is complete. Refer to IBM Knowledge Center to set up CICS IA for each CICS region and to tailor the JCL and SQL statements that CICS IA uses.

The information provided on IBM Knowledge Center contains the step-by-step procedures to active the functions of CICS IA.

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