



Program Directory for CICS Transaction Server for z/OS V5.4

V5.4.0

Program Number 5655-Y04

FMID HCI7100

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 31.

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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 Transaction Server for z/OS. This publication refers to CICS Transaction Server for z/OS as CICS TS for z/OS V5.4.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic program materials and documentation for CICS TS for z/OS V5.4.
- 3.0, “Program Support” on page 5 describes the IBM support available for CICS TS for z/OS V5.4.
- 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 TS for z/OS V5.4.
- 5.0, “Installation Requirements and Considerations” on page 9 identifies the resources and considerations that are required for installing and using CICS TS for z/OS V5.4.
- 6.0, “Installation Instructions” on page 19 provides detailed installation instructions for CICS TS for z/OS V5.4. It also describes the procedures for activating the functions of CICS TS for z/OS V5.4, or refers to appropriate publications.

Before installing CICS TS for z/OS V5.4, 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 TS for z/OS V5.4 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 TS for z/OS V5.4 are included on the CBPDO tape.

Do not use this program directory if you install CICS TS for z/OS V5.4 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 TS for z/OS V5.4 Description

CICS TS is IBM's leading product for transaction processing on the mainframe, and is used by a high proportion of the world's largest companies for their critical business processes. It is designed to execute mixed language application workloads, supporting both modern and traditional programming languages and models. Its extensive data communication services, and its foundations in service-oriented architecture (SOA), provide unparalleled connectivity and scalability. As a result, CICS TS fits naturally into a smart infrastructure of the kind needed for a flexible, global enterprise.

You can obtain CICS TS for z/OS V5.4 in 3 offerings:

- CICS TS for z/OS V5.4
- CICS TS for z/OS Developer Trial V5.4
- CICS TS for z/OS Value Unit Edition V5.4

Each offering consists of the CICS TS for z/OS V5.4 - base component plus an appropriate activation module.

In order to run the CICS TS for z/OS Installation Verification Program (IVP) an appropriate activation module and the base component must be installed.

CICS TS for z/OS installation

For this release of CICS TS for z/OS you must now install two separate components, using separate Program Directories:

CICS TS for z/OS - base. This component must be installed for any of the three offerings of CICS TS for z/OS.

CICS TS for z/OS activation module. This component is specific to each offering of CICS TS for z/OS.

Information about these components and the complete installation process for CICS TS for z/OS is in "Installing" in the CICS product documentation in IBM Knowledge Center:
<http://www.ibm.com/support/knowledgecenter/SSGMGV/welcome.html>

1.2 CICS TS for z/OS V5.4 FMIDs

CICS TS for z/OS V5.4 consists of the following FMIDs:

HCI7100
JCI7101
JCI7102
JCI7103
JCI710D
JCI710M
JCI710L
JCI710W
H0B5110
H0B7110
H0Z2110
HCIZ300

2.0 Program Materials

An IBM program is identified by a program number. The program number for CICS TS for z/OS V5.4 is 5655-Y04.

Basic Machine-Readable Materials are materials that are supplied for the use of the product.

The program announcement material describes the features supported by CICS TS for z/OS V5.4. 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 19 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 TS for z/OS V5.4 in the *CBPDO Memo To Users Extension*.

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for CICS TS for z/OS V5.4.

2.3 Program Publications

The following sections identify the basic publications for CICS TS for z/OS V5.4.

Documentation for CICS Transaction Server for z/OS is available in IBM Knowledge Center:
<http://www.ibm.com/support/knowledgecenter/SSGMGV/welcome.html>

2.4 Program Source Materials

No program source materials or viewable program listings are provided for CICS TS for z/OS V5.4.

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 1 during the installation of CICS TS for z/OS V5.4. In addition to the publications below, the CICS product documentation can be found in the IBM Knowledge Center: <http://www.ibm.com/support/knowledgecenter/SSGMGV/welcome.html>

Figure 1. Publications Useful During Installation

Publication Title	Form Number	Media Format
<i>IBM SMP/E for z/OS User's Guide</i>	SA23-2277	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Commands</i>	SA23-2275	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Reference</i>	SA23-2276	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA32-0883	http://www.ibm.com/shop/publications/order/

3.0 Program Support

This section describes the IBM support available for CICS TS for z/OS V5.4.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install CICS TS for z/OS V5.4, 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 6.1.13, “Perform SMP/E APPLY” on page 26 for a sample APPLY command.

If you obtained CICS TS for z/OS V5.4 as part of a CBPDO, HOLDDATA is included.

If the CBPDO for CICS TS for z/OS V5.4 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://www.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 TS for z/OS V5.4 are included in Figure 2.

<i>Figure 2 (Page 1 of 2). PSP Upgrade and Subset ID</i>		
UPGRADE	SUBSET	Description
CICSTS54	HCI7100	CICS TS Base
	JCI7101	COBOL Language Parts
	JCI7102	PL/I Language Parts
	JCI7103	C Language Parts

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

UPGRADE	SUBSET	Description
	JCI710D	Java
	JCI710M	CICSplex System Manager
	JCI710L	WebSphere Application Server Liberty Profile
	JCI710W	WS-Security
	H0B5110	CICS REXX Runtime Facility
	H0B7110	CICS REXX Development System
	H0Z2110	CICS REXX Common for CICS/ESA
	HCIZ300	Service Flow Runtime

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 3 identifies the component IDs (COMPID) for CICS TS for z/OS V5.4.

Figure 3. Component IDs

FMID	COMPID	Component Name	RETAIN Release
HC17100	5655Y0400	CICS TS Base	100
JCI7101	5655Y0400	COBOL Language Parts	101
JCI7102	5655Y0400	PL/I Language Parts	102
JCI7103	5655Y0400	C Language Parts	103
JCI710D	5655Y0400	Java	10D
JCI710M	5655Y0400	CICSplex System Manager	10M
JCI710L	5655Y0400	WebSphere Application Server Liberty Profile	10L
JCI710W	5655Y0400	WS-Security	10W
H0B5110	565508700	CICS REXX Runtime Facility	110
H0B7110	565508600	CICS REXX Development System	110
H0Z2110	565511200	CICS REXX Common for CICS/ESA	110
HCIZ300	5655M1502	Service Flow Runtime	300
n/a	5655Y0401	IBM CICS Explorer	540

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of CICS TS for z/OS V5.4. 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

You can find the APARs against previous releases of CICS TS for z/OS that have been incorporated into this release by going to:

<http://www.ibm.com/support/docview.wss?uid=swg21223445>

4.2 Service Level Information

Frequently check the CICS TS for z/OS V5.4 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 CICS TS for z/OS V5.4. 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 TS for z/OS V5.4.

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 4. 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	V02.01.00	N/A	No
5650-ZOS	z/OS	V02.02.00	N/A	No
5655-G44	IBM SMP/E for z/OS	V03.05.00	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 V03.05.00.

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 required to install and use CICS TS for z/OS V5.4.

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. These products are specified as PREs or REQs.

Figure 5. 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:				
5650-ZOS	z/OS	V02.01.00	N/A	No
5650-ZOS	z/OS	V02.02.00	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.

Conditional installation requisites identify products that are *not* required for successful installation of this product but can resolve such things as certain warning messages at installation time. These products are specified as IF REQs.

CICS TS for z/OS V5.4 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. These products are specified as PREs or REQs.

Figure 6. Target System Mandatory Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level
5650-ZOS	z/OS V02.01.00
5650-ZOS	z/OS V02.02.00
Any one of the following:	
5655-Y04	CICS TS for z/OS V05.04.00 - activation module - base
5655-Y30	CICS TS for z/OS V05.04.00 activation module - Developer Trial
5722-DFJ	CICS TS for z/OS V05.04.00 activation module Value Unit Edition

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.

Please refer to the following web page for the latest operational requisite product information for CICS TS for z/OS V5.4 and CICS TS for z/OS V5.4.

<http://www.ibm.com/support/docview.wss?uid=swg27006382>.

For activation modules, also check the Program Directory for CICS TS for z/OS V5.4.

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 TS for z/OS V5.4 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 TS for z/OS V5.4 has no negative requisites.

5.2.3 DASD Storage Requirements

CICS TS for z/OS V5.4 libraries can reside on all supported DASD types.

Figure 7 lists the total space that is required for each type of library.

Figure 7. Total DASD Space Required by CICS TS for z/OS V5.4		
Library Type	Total Space Required in 3390 Trks	File System Description
Target	13853	
Distribution	15028	
zFS	9000	

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 23.

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 LNKST.
- 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 TS for z/OS V5.4. The storage requirements of CICS TS for z/OS V5.4 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 8 (Page 1 of 2). Storage Requirements for CICS TS for z/OS V5.4 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
SDFHINST	SAMP	ANY	U	PDS	FB	80	60	8
SDFHAPD1	SAMP	ANY	U	PDS	FB	38	15	2
SDFHAPD2	SAMP	ANY	U	PDS	FB	227	15	2
SDFHENV	SAMP	ANY	U	PDS	V	30000	30	2
SDFHMAC	SAMP	ANY	U	PDS	FB	80	510	36
SDFHMSGGS	SAMP	ANY	U	PDS	V	30646	465	20
SDFHPARM	SAMP	ANY	U	PDS	FB	80	15	2
SDFHPROC	SAMP	ANY	U	PDS	FB	80	30	3
SDFHSAMP	SAMP	ANY	U	PDS	FB	80	630	48
SDFHLINK	LMOD	ANY	U	PDS	U	0	315	8
SDFHLOAD	LMOD	ANY	U	PDSE	U	0	1455	NA
SDFHEXCI	LMOD	ANY	U	PDS	U	0	60	5
SDFHAUTH	LMOD	ANY	U	PDSE	U	0	180	NA
SDFHLPA	LMOD	ANY	U	PDS	U	0	525	90
SDFHCOB	SAMP	ANY	U	PDS	FB	80	150	12
SDFHPL1	SAMP	ANY	U	PDS	FB	80	120	11
SDFHC370	SAMP	ANY	U	PDS	FB	80	180	14
SDFHSDCK	SAMP	ANY	U	PDS	FB	80	30	2
SDFJAUTH	LMOD	ANY	U	PDSE	U	0	30	NA
SDFHDLL1	LMOD	ANY	U	PDS	U	0	15	2
SDFHWSLD	LMOD	ANY	U	PDSE	U	0	165	NA
SDFHWSSX	SAMP	ANY	U	PDS	FB	80	15	2
SEYUVIEW	SAMP	ANY	U	PDSE	VB	32000	510	NA
SEYUCLIB	SAMP	ANY	U	PDS	FB	80	15	2
SEYUCOB	SAMP	ANY	U	PDS	FB	80	285	68
SEYUC370	SAMP	ANY	U	PDS	FB	80	240	68
SEYUDEF	SAMP	ANY	U	PDS	FB	80	15	2
SEYUMAC	SAMP	ANY	U	PDS	FB	80	225	69
SEYUPARM	SAMP	ANY	U	PDS	FB	80	15	2

Figure 8 (Page 2 of 2). Storage Requirements for CICS TS for z/OS V5.4 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
SEYUPL1	SAMP	ANY	U	PDS	FB	80	255	68
SEYUPROC	SAMP	ANY	U	PDS	FB	80	15	2
SEYUSAMP	SAMP	ANY	U	PDS	FB	80	60	3
SEYULOAD	LMOD	ANY	U	PDS	U	0	2475	66
SEYUAUTH	LMOD	ANY	U	PDS	U	0	405	11
SEYULINK	LMOD	ANY	U	PDS	U	0	120	2
SEYULPA	LMOD	ANY	U	PDS	U	0	3975	20
SCICJCL	SAMP	ANY	U	PDS	FB	80	7	3
SCICLOAD	LMOD	ANY	U	PDS	U	0	57	3
SCICPNL	SAMP	ANY	U	PDS	FB	80	2	2
SCICDBRM	SAMP	ANY	U	PDS	FB	80	2	2
SCICBOOK	SAMP	ANY	U	PDS	FB	4096	21	2
SCICDOC	SAMP	ANY	U	PDS	VB	8192	91	2
SCICCMDS	SAMP	ANY	U	PDS	VB	255	2	2
SCICEXEC	SAMP	ANY	U	PDS	VB	255	3	2
SCICUSER	SAMP	ANY	U	PDS	VB	255	4	2
SCIZINST	SAMP	ANY	U	PDS	FB	80	3	2
SCIZMAC	SAMP	ANY	U	PDS	FB	80	33	8
SCIZSAMP	SAMP	ANY	U	PDS	FB	80	15	4
SCIZLOAD	LMOD	ANY	U	PDS	U	0	38	5

Figure 9. CICS TS for z/OS V5.4 File System Paths

DDNAME	T Y P E	Path Name
SDFHH001	N	/usr/lpp/cicsts/@ussdir@/IBM
SDFHL001	N	/usr/lpp/cicsts/@ussdir@/wlp/IBM

Figure 10 (Page 1 of 2). Storage Requirements for CICS TS for z/OS V5.4 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
ADFHINST	U	PDS	FB	80	60	8
ADFHMOD	U	PDSE	U	0	1860	NA
ADFHAPD1	U	PDS	FB	38	15	2
ADFHAPD2	U	PDS	FB	227	15	2
ADFHENV	U	PDS	V	30000	30	2
ADFHMAC	U	PDS	FB	80	510	36
ADFHMSGGS	U	PDS	V	30646	465	20
ADFHPARM	U	PDS	FB	80	15	2
ADFHPROC	U	PDS	FB	80	30	3
ADFHSAMP	U	PDS	FB	80	630	48
ADFHCOB	U	PDS	FB	80	150	12
ADFHPL1	U	PDS	FB	80	120	11
ADFJMOD	U	PDSE	U	0	45	NA
ADFHC370	U	PDS	FB	80	180	14
ADFHSDCK	U	PDS	FB	80	30	2
ADFHH001	U	PDS	V	32000	1230	26
ADFHL001	U	PDS	V	32000	6525	23
ADFHLSCR	U	PDS	VB	32000	15	2
ADFHMOD2	U	PDSE	U	0	210	NA
AEYUMOD	U	PDS	U	0	2400	1253
AEYUVIEW	U	PDSE	VB	32000	510	NA
AEYUCLIB	U	PDS	FB	80	15	2
AEYUCOB	U	PDS	FB	80	285	68
AEYUC370	U	PDS	FB	80	240	68
AEYUDEF	U	PDS	FB	80	15	2
AEYUMAC	U	PDS	FB	80	225	69
AEYUPARM	U	PDS	FB	80	15	2
AEYUPL1	U	PDS	FB	80	255	68
AEYUPROC	U	PDS	FB	80	15	2

Figure 10 (Page 2 of 2). Storage Requirements for CICS TS for z/OS V5.4 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
AEYUSAMP	U	PDS	FB	80	60	3
ACICRMOD	U	PDS	U	0	2	2
ACICJCL	U	PDS	FB	80	7	3
ACICMOD	U	PDS	U	0	43	32
ACICPNL	U	PDS	FB	80	2	2
ACICDBRM	U	PDS	FB	80	2	2
ACICBOOK	U	PDS	FB	4096	21	2
ACICDOC	U	PDS	VB	8192	91	2
ACICCMDS	U	PDS	VB	255	2	2
ACICEXEC	U	PDS	VB	255	3	2
ACICUSER	U	PDS	VB	255	3	2
ACICDMOD	U	PDS	U	0	2	2
ACICDUSR	U	PDS	VB	255	3	2
ACIZINST	U	PDS	FB	80	3	2
ACIZMOD	U	PDS	U	0	21	6
ACIZMAC	U	PDS	FB	80	33	8
ACIZSAMP	U	PDS	FB	80	15	4

5.3 FMIDs Deleted

Installing CICS TS for z/OS V5.4 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 TS for z/OS V5.4 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

You have a choice of installation methods:

- DFHISTAR when coded and run will generate the install jobs and some post-install jobs for you. DFHIHELP contains documentation to assist the coding of DFHISTAR.
- The standard method of install whereby those sample installation jobs listed in Figure 12 on page 20 are each edited and submitted in turn.

5.4.1 SMP/E Considerations

CICS TS for z/OS V5.4 and one or more activation modules can be installed into the same set of SMP/E zones, including SMPCSI, target, distribution, and zFS data sets.

IBM recommends that you install CICS TS for z/OS V5.4 - base into a new set of SMP/E zones, including SMPCSI, target, distribution, and zFS data sets, to allow independent maintenance of CICS TS for z/OS V5.4 - base, z/OS, and other subsystems.

This Program Directory provides sample jobs and instructions to create such an SMP/E environment.

For users of:

- CICS REXX (H0B5110 CICS REXX Runtime Facility,
- H0B7110 CICS REXX Development System,
- H0Z2110 CICS REXX Common for CICS/ESA),

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 TS for z/OS V5.4.

Please note the following points:

- If you want to install CICS TS for z/OS V5.4 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 TS for z/OS V5.4

6.1.1 SMP/E Considerations for Installing CICS TS for z/OS V5.4

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of CICS TS for z/OS V5.4.

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 11. 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 11 (Page 1 of 2). SMP/E Options Subentry Values</i>		
Subentry	Value	Comment
DSSPACE	3130,950,733	The space used if SMP/E allocates the RELFILE data sets
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

Figure 11 (Page 2 of 2). SMP/E Options Subentry Values

Subentry	Value	Comment
Binder return code	4	IBM recommends using a minimum return code of 4 for the binder.

6.1.3 SMP/E CALLLIBS Processing

CICS TS for z/OS V5.4 uses the CALLLIBS function provided in SMP/E to resolve external references during installation. When CICS TS for z/OS V5.4 is installed, ensure that DDDEFs exist for the following libraries:

- CSSLIB
- DSNLOAD
- MACLIB
- MODGEN
- SCEELIB
- SCEELKED
- SCEELKEX
- SCIEBND2
- SCIEE OBJ
- SCIEE CPP
- SCLBSID
- SCSF MOD0
- SEZAR PCL
- SEZACMTX
- SIS PLOAD

Note: CALLLIBS uses the previous DDDEFs only to resolve the link-edit for CICS TS for z/OS V5.4. These data sets are not updated during the installation of CICS TS for z/OS V5.4.

6.1.4 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install CICS TS for z/OS V5.4:

The sample installation jobs are sorted by name into an order in which to run them in sequence (after editing) to install CICS TS for z/OS V5.4. The exact order in which to run the jobs is not absolutely critical. Running the jobs in either the sequence they are listed in the list below or in the text of this chapter is acceptable.

Figure 12 (Page 1 of 2). Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
DFHSMPSU	ZONES	Sample job to setup SMP/E zones	IBM.HCI7100.F2

Figure 12 (Page 2 of 2). Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
DFHALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HCI7100.F2
DFHIHFS0		Sample job to create zFS data set and directory	IBM.HCI7100.F2
DFHIHFS1		Sample job to create and mount zFS directory	IBM.HCI7100.F2
DFHISMKD	MKDIR	Sample job to invoke the supplied DFHMKDIR EXEC to allocate zFS paths	IBM.HCI7100.F2
DFHDDDEF	DDDEF	Sample job to create DDDEF entries for Target and Distribution libraries	IBM.HCI7100.F2
DFHRECV	RECEIVE	Sample RECEIVE job from tape	IBM.HCI7100.F2
DFHRECVE	RECEIVE	Sample RECEIVE job from DASD	IBM.HCI7100.F2
DFHAPPLY	APPLY	Sample APPLY job	IBM.HCI7100.F2
DFHACCPT	ACCEPT	Sample ACCEPT job	IBM.HCI7100.F2
DFHIJVM		Optional sample to add JVM profiles to zFS	IBM.HCI7100.F2
DFHIFTGS		Optional sample to tag text files on zFS	IBM.HCI7100.F2
DFHCSVCJ		Optional sample to dynamically update the CICS SVC	IBM.HCI7100.F2

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.12, “Perform SMP/E RECEIVE” on page 26) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 12 on page 20 to find the appropriate relfile data set.

There are two installation methods provided, the first follows the IBM Corporate Standards. However, some users may be familiar with DFHISTAR and this method is still available. For more information on DFHISTAR refer to member DFHIHELP in data set 'IBM.HCI7100.F2' or refer to the information about installing CICS using DFHISTAR in the CICS documentation in IBM Knowledge Center."

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 statement 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.HCI7100.F2,UNIT=tunit,
//          VOL=SER=volser,LABEL=(x,SL),
//          DISP=(OLD,KEEP)
//FILEIN   DD DSN=IBM.HCI7100.F2,UNIT=SYSALLDA,DISP=SHR,
//          VOL=SER=filevol
//OUT      DD DSN=job1-library-name,
//          DISP=(NEW,CATLG,DELETE),
```

```
//          VOL=SER=dasdvol,UNIT=SYSALLDA,
//          SPACE=(TRK,({PD_PRIMSPC},{PD_SECONDSPC},{PD_DIRSPC}))
//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.HCI7100.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 12 on page 20. Each sample job contains comments with specific instructions for customization.

6.1.5 Run the installation Jobs

Installation method choice

You must now choose which installation method to use:

- The traditional method which is documented below.
- The DFHISTAR method which will code all your install and post install JCL for you. Documentation for this can be found in SDFHINST member DFHIHELP.

Note: If you wish to install into a non-SMS managed environment add the appropriate STORCLAS and VOLUME parameters accordingly to the sample JCL.

This section describes the CICS Transaction Server installation jobs, and gives considerations that may affect how you use them.

The CICS Transaction Server jobs are in the library you created as a result of copying the installation file from the distribution tape.

These jobs should be run one at a time. Before you run a job, read the information about it (starting in topic DFHIHFS0 on page 24).

After you have run a job, check its output before proceeding to the next job. If a job terminates abnormally, find out why it failed (the job log lists the error messages produced on each run). Correct the error, and then proceed as advised in the job description. In any case, do not attempt to run the next job until the previous job has run successfully.

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

6.1.6 Prepare the installation environment

6.1.6.1 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 DFHSMPSU to create a new SMP/E global zone for CICS TS for z/OS V5.4. Ensure that the JOB statement is valid for your system. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: DFHSMPSU 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.

6.1.7 Allocate SMP/E Target and Distribution Libraries

If you need to create new target and distribution zones for CICS TS for z/OS V5.4, edit and submit the following sample job DFHALLOC.

Ensure that the JOB statement is valid for your system. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: The 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.

6.1.8 The DFHIHFS0 Job

This job creates a directory (/usr/lpp/cicsts) that is used as a parent directory for the zFS mounts required for each CICS release. This directory and mount is only ever created once for all CICS releases, and if the directory currently exists the job should not be run. The follow up job DFHIHFS1 creates a release specific zFS mounted in this directory for this release of CICS. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages:0

This job

- Creates the cicsts directory at /usr/lpp
- Mounts the zFS at directory /usr/lpp/cicsts
- Creates the dfhconfig directory at /usr/lpp/cicsts
- Creates empty files featuretoggle.properties and groupfeaturetoggle.properties in the dfhconfig directory
- Changes the permission settings for the /usr/lpp/cicsts directory and the /usr/lpp/cicsts/dfhconfig directory to:
 - Owner=RWX
 - Group=RWX
 - Other=R-X

(In octal form: 775)

Where:

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

Notes:

1. **DFHIHFS0 only ever needs to be run once.**
2. RACF ALTER ACCESS to the zFS data sets must be granted before running this DFHIHFS0.
3. The /usr/lpp/cicsts directory contains only directories, each being a mount point.
4. CICS requires the MOUNT issued by DFHIHFS0 to access files stored in the zFS, but the MOUNT command is lost when you re-IPL MVS. SDFHINST member DFHBXP0 contains a MOUNT command 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 DFHIHFS0 must end with return code zero for the job to be successful.

6.1.9 The DFHIHFS1 Job

this job creates a release specific zFS mounted in /usr/lpp/cicsts for this release of CICS. It

- Unmounts the zFS at directory /usr/lpp/cicsts/*ussdir* to allow the job to be rerun, and if necessary forces return code zero.
- Deletes from /usr/lpp/cicsts the directory defined by the *ussdir* 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 *ussdir* directory at /usr/lpp/cicsts, where *ussdir* is the name of the directory specified on the *ussdir* parameter.
- Mounts the zFS at directory /usr/lpp/cicsts/*ussdir*
- Creates the *dfhconfig* directory at /pathprefix/usr/lpp/cicsts/*ussdir*.
- Creates empty files *featuretoggle.properties* and *groupfeaturetoggle.properties* in the *dfhconfig* directory
- Changes the permission settings for the *ussdir* directory and the *dfhconfig* directory to 775.

Expected Return Codes and Messages:0

Note: All steps of DFHIHFS1 must end with return code zero for the job to be successful.

CICS requires the MOUNT issued by DFHIHFS1 to access files stored in the zFS, but the MOUNT command is lost when you re-IPL MVS. SDFHINST member DFHBXP1 contains a MOUNT command for /usr/lpp/cicsts/*ussdir*. Copy this command into a BPXPRMxx member of the SYS1.PARMLIB dataset to ensure the mount is restored when MVS is IPLed.

6.1.10 The DFHISMKD Job

This job creates the directories in zFS.

Expected Return Codes and Messages:0

6.1.11 Create DDDEF Entries

Edit and submit sample job DFHDDDEF to create DDDEF entries for the SMP/E target and distribution data sets and directories for CICS TS for z/OS V5.4. Make sure the call library DDDEFs point to the corresponding data sets for your z/OS target system. Consult the instructions in the sample job for more information.

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

Before you run the DFHDDDEF job

- If you have a DB2 SDSNLOAD library on your system, replace @DSNLOAD@ with the dataset name.
- If you do not have DB2 on your system, replace @DSNLOAD@ with the name of the SDFHLOAD dataset for this install, which contains a DB2 stub.

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

6.1.12 Perform SMP/E RECEIVE

If installing from the download site, use the DFHRECVE job instead of the DFHRECV job.

6.1.12.1 The DFHRECV Job:

It is the only installation job (apart from the initial IEBCOPY job) that requires the distribution tape to be mounted.

If the DFHRECV job terminates abnormally, examine the job log to determine the cause, correct the problem, then re-run DFHRECV.

Expected Return Codes and Messages:0

6.1.12.2 The DFHRECVE Job:

This job RECEIVES the CICS Transaction Server software from DASD into the global zone.

If the DFHRECVE job terminates abnormally, examine the job log to determine the cause, correct the problem, then re-run DFHRECVE.

Expected Return Codes and Messages:0

If you have obtained CICS TS for z/OS V5.4 as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the CICS TS for z/OS V5.4 FMIDs, service, and HOLDDATA that are included on the CBPDO package. For more information, see the documentation that is included in the CBPDO.

6.1.13 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job DFHAPPLY to perform an SMP/E APPLY CHECK for CICS TS for z/OS V5.4. 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)) .
..any other parameters documented in the program directory
```

This method is quicker, but requires subsequent review of the Exception SYSMOD report produced by the REPORT ERRSYSMODS command to investigate any unresolved HIPERs. If you have received the latest HOLDDATA, you can also choose to use the REPORT MISSINGFIX

command and specify Fix Category IBM.ProductInstall-RequiredService to investigate missing recommended service.

If you bypass 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 4 if this job runs correctly.

Please Note

Refer to the installation guide for further information on the expected return code 4 messages. If you are using GROUPEXTEND in the APPLY any maintenance(PTFs) that include HOLDDATA may cause a return code other than 0 also.

6.1.14 Perform SMP/E ACCEPT

Edit and submit sample job DFHACCP to perform an SMP/E ACCEPT CHECK for CICS TS for z/OS V5.4. Consult the instructions in the sample job for more information.

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

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

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

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

Expected Return Codes and Messages from ACCEPT CHECK: 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.

6.1.15 The DFHIJVMS Job

The DFHIJVMS job is an optional job that creates the customized sample JVM profiles that you require if you want to run a JVM program in CICS.

Expected Return Codes and Messages:0

6.1.16 The DFHIFTGS Job

The DFHIFTGS job is an optional job that tags the text files in the CICS USSHOME directory with the correct coded character set.

Expected Return Codes and Messages:0

6.1.17 The DFHCSVCJ Job

If you chose not to run DFHISTAR and you want to dynamically update the CICS SVC then you will need to code and run DFHCSVCJ to update the CICS SVC. Please follow the instructions within the job comments and DFHIHELP

Expected Return Codes and Messages:0

6.1.18 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 TS for z/OS V5.4, 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 TS for z/OS V5.4

6.2.1 File System Execution

If you choose to have the file system in which you have installed CICS TS for z/OS V5.4 mounted in read-only mode during execution, the following tasks are required to accomplish this:

If you have included a mount statement in BPXPRMxx PARMLIB member for this file system, ensure it includes the operand MODE(READ).

To change the file system to read only in UNIX System Services, execute the following command:

1. `chmount -r pathname`

For a detailed explanation of the above commands, refer to the z/OS UNIX System Services Command Reference, listed in Figure 1 on page 3.

CICS TS for z/OS V5.4 is now fully installed. Please refer to the installation guide in order to get started.

6.3 Product Customization

The CICS TS for z/OS documentation in IBM Knowledge Center contains the information necessary to customize and use CICS TS for z/OS V5.4.

7.0 Notices

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Reader's Comments

Program Directory for CICS Transaction Server for z/OS, June 2017

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