Program Directory for CICS VSAM Recovery for z/OS

V6.3.0

Program Number 5655-GY1

FMIDs HCVR630, JCVR63E, JCVR63K

for use with
z/OS

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GI13-6705-01

Note

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

Contents

Figures

1.0 Introduction

This program directory is intended for system programmers who are responsible for program installation and maintenance. It contains information about the material and procedures associated with the installation of CICS VSAM Recovery for z/OS V6.3. This publication refers to CICS VSAM Recovery for z/OS V6.3 as CICS VR.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic program materials and documentation for CICS VR.
- 3.0, “Program Support” on page 5 describes the IBM support available for CICS VR.
- 4.0, “Program and Service Level Information” on page 6 lists the APARs (program level) and PTFs (service level) that have been incorporated into CICS VR.
- 5.0, “Installation Requirements and Considerations” on page 7 identifies the resources and considerations that are required for installing and using CICS VR.
- 6.0, “Installation Instructions” on page 20 provides detailed installation instructions for CICS VR. It also describes the procedures for activating the functions of CICS VR, or refers to appropriate publications.

Before installing CICS VR, 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; after which, keep the documents for your 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 VR is supplied in a Custom-Built Product Delivery Offering (CBPDO, 5751-CS3). The program directory that is provided in softcopy format on the CBPDO is identical to the hardcopy format if one was included with your order. All service and HOLDDATA for CICS VR are included on the CBPDO.

Do not use this program directory if you install CICS VR with a z/OSMF Portable Software Instance (z/OSMF Portable Software Instance (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 VR Description

CICS VSAM Recovery for z/OS V6.3 (CICS VR) delivers numerous enhancements to optimize IT operations, support IT governance initiatives and improve usability and serviceability.

1.1.1 What's new in CICS VR V6.3 ?

PACING Phase 1 for LSQA Shortage Issue

During a logger resource temporarily unavailable condition while writing records to a log stream, CICS VR may receive incoming log requests faster than they can be written, causing memory to fill up and logging to stop. To address this, we're introducing PACING. When a temporary error occurs, PACING will pause client threads from allocating more memory for log buffering and prevents memory overload. Once the logstream temporary error condition clears, the paused threads are resumed. PACING is controlled by the CICSVR_General_Control parameter. It is only active when PACING=YES (default is NO).

Handling Code Page Differences

Letters and numbers usually remain the same across systems, but special characters can change when using different CCSIDs, which may lead to data loss or errors. To avoid this, inconsistent characters were replaced from ¬= to <>.

1.2 CICS VR FMIDs

CICS VR consists of the following FMIDs:

HCVR630
JCVR63E
JCVR63K

2.0 Program Materials

An IBM program is identified by a program number. The program number for CICS VR is 5655-GY1.

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

The program announcement material describes the features supported by CICS VR. 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 20 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 VR in the *CBPDO Memo To Users Extension*.

2.2 Program Publications

The following sections identify the basic publications for CICS VR.

Figure 1 identifies the basic unlicensed publications for CICS VR.

Figure 1. Basic Material: Unlicensed Publications

Publication Title	Direct Link
CICS VSAM Recovery for z/OS V6.3: Program Directory.	See link below
CICS VSAM Recovery for z/OS V6.3: Licence Information DVD	See link below
CICS VSAM Recovery for z/OS V6.3: Implementation Guide and Reference	See link below
CICS VSAM Recovery for z/OS V6.3: Messages and Problem Determination	See link below
CICS VSAM Recovery for z/OS V6.3: User's Guide and Reference	See link below

Note: These basic unlicensed publications can be found at **IBM Products documentation** https://www.ibm.com/docs/en/cvrfz

2.3 Program Source Materials

No program source materials or viewable program listings are provided for CICS VR.

2.4 Publications Useful During Installation

You might want to use the publications listed in Figure 2 during the installation of CICS VR which can be found at **IBM Products documentation** https://www.ibm.com/docs/en/cvrfz

Figure 2. Publications Useful During Installation

Publication
IBM SMP/E for z/OS User's Guide
IBM SMP/E for z/OS Reference
IBM SMP/E for z/OS Commands
IBM SMP/E for z/OS Messages, Codes, and Diagnosis

3.0 Program Support

This section describes the IBM support available for CICS VR.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install CICS VR, make sure that you review the PSP bucket information for IBM Z products document https://www.ibm.com/support/pages/node/7127792. It contains the latest information concerning the installation of IBM products, including the latest service recommendations and cross-product dependencies. This information was previously available in traditional PSP buckets, which are no longer published for IBM Z products.

For support, access the Software Support Website at https://www.ibm.com/mysupport/

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 VR.

Figure 3. Component IDs

FMID	COMPID	Component Name	Release
HCVR630	5655GY101	CICS VR Base Function	630
JCVR63E	5655GY101	CICS VR English Function	63E
JCVR63K	5655GY101	CICS VR Japanese Function	63K

4.0 Program and Service Level Information

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

- FMID HCVR630

  PI22190, PI33213, PI70498, PI61436, PI89830, PI91656, PI93855, PH12086, PH34213, PH34215, PH37942, PH37907, PH43892, PH67171, PH66778

- FMID JCVR63E

  PH67171

- FMID JCVR63K

  None.

4.2 Service Level Information

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

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating CICS VR. 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 VR.

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?
5650-ZOS	z/OS	02.05.00 or later	N/A	No
5655-ZOS	z/OS	03.01.00	N/A	No

Note: SMP/E is a requirement for Installation and is an element of z/OS.

Note: Installation might require migration to new z/OS releases to be service supported. See https://www.ibm.com/support/lifecycle/

5.2 Target System Requirements

This section describes the environment of the target system required to install and use CICS VR.

CICS VR 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 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 (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:				
5650-ZOS	z/OS	02.05.00 or later	N/A	No

Figure 5 (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?
5655-ZOS	z/OS	03.01.00	N/A	No
Any **one** of the following:				
5655-Y04	CICS TS	V5.5 or higher	N/A	No
5655-YA1	CICS TS	V6.1 or higher	N/A	No

Note: Installation might require migration to new releases to obtain support. See https://www.ibm.com/support/lifecycle/

5.2.2.2 Operational Requisites

Operational requisites are products that are required and *must* be present on the system or products that are not required but *should* be present on the system for this product to operate all or part of its functions.

Mandatory operational requisites identify products that are required for this product to operate its basic functions.

Figure 6. Target System Mandatory Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level
Any **one** of the following:	
5650-ZOS	z/OS 02.05.00 or later
5655-ZOS	z/OS 03.01.00
Any **one** of the following:	
5655-Y04	CICS TS, V5.5 or later
5655-YA1	CICS TS, V6.1 or later

Note:

CICS VR will also run with any future versions of CICS TS that become generally available.

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.

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.

5.2.2.4 Incompatibility (Negative) Requisites

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

CICS VR has no negative requisites.

5.2.3 DASD Storage Requirements

CICS VR 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 VR

Library Type	Total Space Required in 3390 Trks	Description
Target	600 tracks	
Distribution	420 tracks	

Notes:

1. For non-RECFM U data sets, IBM recommends using system-determined block sizes for efficient DASD utilization. For RECFM U data sets, IBM recommends using a block size of 32760, which is most efficient from the performance and DASD utilization perspective.
2. Abbreviations used for data set types are shown as follows.

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

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

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

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

For more information about the names and sizes of the required data sets, see 6.1.7, “Allocate SMP/E Target and Distribution Libraries” on page 22.

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, with some exceptions. If the value in the "ORG" column specifies "PDS", the data set must be a PDS. If the value in "DIR Blks" column specifies "N/A", the data set must be 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 not be in the LPA, with some exceptions. If the data set should be placed in the LPA, see the Special Considerations section below.
   - These data sets can be in the LNKLST. If so, see the Special Considerations section below.
   - These data sets are not required to be APF-authorized, with some exceptions. If the data set must be APF-authorized, see the Special Considerations section below.

The following figures describe the target and distribution libraries and file system paths required to install CICS VR. The storage requirements of CICS VR 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. Storage Requirements for CICS VR Target Libraries

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SDWWINST	SAMP	ANY	U	PDS	FB	80	3	2
SDWWCNTL	SAMP	ANY	U	PDS	FB	80	9	3
SDWWSORC	SAMP	ANY	U	PDS	FB	80	5	2
SDWWLOAD	LMOD	ANY	U	PDS	U	0	325	17
SDWWLPA	LMOD	ANY	U	PDS	U	0	99	9
SDWWCSSL	LMOD	ANY	U	PDS	U	0	10	2
SDWWMENU	SAMP	ANY	U	PDS	FB	80	5	3
SDWWPENU	SAMP	ANY	U	PDS	FB	80	42	28
SDWWSENU	SAMP	ANY	U	PDS	FB	80	6	3
SDWWTENU	SAMP	ANY	U	PDS	FB	80	2	2
SDWWLENU	LMOD	ANY	U	PDS	U	0	12	2
SDWWMJPN	SAMP	ANY	U	PDS	FB	80	5	3
SDWWPJPN	SAMP	ANY	U	PDS	FB	80	42	28
SDWWSJPN	SAMP	ANY	U	PDS	FB	80	6	3
SDWWTJPN	SAMP	ANY	U	PDS	FB	80	2	2
SDWWLJPN	LMOD	ANY	U	PDS	U	0	12	2

Figure 9 (Page 1 of 2). Storage Requirements for CICS VR Distribution Libraries

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
ADWWINST	U	PDS	FB	80	3	2
ADWWMOD	U	PDS	U	0	273	217
ADWWCNTL	U	PDS	FB	80	9	3
ADWWSORC	U	PDS	FB	80	5	2
ADWWMENU	U	PDS	FB	80	5	3
ADWWPENU	U	PDS	FB	80	42	28
ADWWSENU	U	PDS	FB	80	6	3
ADWWTENU	U	PDS	FB	80	2	2

Figure 9 (Page 2 of 2). Storage Requirements for CICS VR Distribution Libraries

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
ADWWMJPN	U	PDS	FB	80	5	3
ADWWPJPN	U	PDS	FB	80	42	28
ADWWSJPN	U	PDS	FB	80	6	3
ADWWTJPN	U	PDS	FB	80	2	2

The following figures list data sets that are not used by SMP/E, but are required for CICS VR to run.

Figure 10. Storage Requirements for CICS VR Non-SMP/E Data Sets

Data Set Name	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
DWWEXLD	U	PDS	U	0	15	2
Note: DWWEXLD contains the load module created by DWWASMLI IVP job.						

5.3 FMIDs Deleted

Installing CICS VR 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 VR 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

5.5 Setting up PARMLIB members for CICS VR

This section explains the updates required to active members of PARMLIB to invoke various CICS VR functions.

5.5.1 Required PARMLIB updates

The following update is required to the active IFAPRDxx member of PARMLIB to enable CICS VR on a system.

Figure 11. IFAPRDxx updates for CICS VR

PARMLIB member	Required Update	Function
IFAPRDxx	PRODUCT OWNER('IBM CORP') NAME(CICSVR) ID(5655-GY1) VERSION(*)RELEASE(*)MOD(*) FEATURENAME(CICSVR) STATE(ENABLED)	Required to define the Enablement Policy for CICS VR.

5.5.2 Required PARMLIB updates for the CICS VR server

The following updates are required to the active members of PARMLIB to run the CICS VR server address space. The following updates must be made on each system in a sysplex that will run the CICS VR server address space. Refer to chapter 4, "Activating the CICS VR server address space", in the *CICS VR Implementation Guide and Reference* for further information about each of the listed IGDSMSxx member updates.

Figure 12 (Page 1 of 2). PARMLIB updates for CICS VR

PARMLIB member	Required Update	Function
IGDSMSxx	CICSVR_INIT(YES/NO)	Specifies if the CICS VR server address space is to be activated. YES will cause the activation of the server during system initialization. NO is the default value and will not cause the activation of the server during system initialization.
IGDSMSxx	CICSVR_GRPNAME_SUFFIX(suffix)	Specifies the name of the CICS VR cross-system coupling facility (XCF) group that the instance of the CICS VR server address space running on the system belongs to. PROD is the default value. This parameter must be specified even if you are not running on a sysplex environment.
IGDSMSxx	CICSVR_DSNAME_ PREFIX(hlq.slq)	Specifies the first level qualifier, and optional second level qualifier, in the naming convention used by the CICS VR server address space when allocating data sets to the DWWMSG, DWWDMSG and DWWDUMP ddnames. DWW is the default value.

Figure 12 (Page 2 of 2). PARMLIB updates for CICS VR

PARMLIB member	Required Update	Function
IGDSMSxx	CICSVR_RCDS_PREFIX(hlq.slq)	Specifies the first level qualifier, and optional second level qualifier, in the naming convention used by CICS VR for the recovery control data sets (RCDS). DWW is the default value. You must manually create the RCDSs, using the specified naming convention,before activating the CICS VR address space.
LPALSTxx	hlq.SDWWLPA	Adds the CICS VR V6.3 load module library SDWWLPA to your LPA concatenation. 'hlq' of SDWWLPA is the high level qualifier specified in the DWWALLOC installation job.
ARCCMDxx	AUTH userid DBA(CONTROL)	Allows change accumulation processing to query DFSMShsm for backup information. userid is the ID of the user that executes the CICS VR change accumulation batch job. Refer to *z/OS DFSMShsm Administration Reference* for details on the AUTH command. **See Note 1.**
LNKLSTxx	hlq.SDWWLOAD	Adds the required CICS VR load module library to the Link List. 'hlq' is the high level qualifier specified in the DWWALLOC installation job. **See Note 2.**
	hlq.SDWWLENU	Adds the required CICS VR English Language load library to the Link List. 'hlq' is the high level qualifier specified in the DWWALLOC installation job. **See Note 2.**
	hlq.SDWWLJPN	Adds the required CICS VR Japanese Language load library to the Link List. 'hlq' is the high level qualifier specified in the DWWALLOC installation job. **See Note 2. This entry should be placed earlier than the 'hlq.SDWWLENU', if JCVR63K fmid is used.**

Note: (1) If the RACF FACILITY class is used. DFSMShsm uses it (instead of the AUTH command) to protect all DFSMShsm commands. To get the list of authorized DFSMShsm commands used by CICS VR, refer to section 5.5.4, "RACF Authorization".

Note: (2) The library should be added to the list of APF-authorized libraries in the appropriate PROGxx (or IEAAPFxx) PARMLIB's member. For information about maintaining lists of APF-authorized libraries, see the z/OS MVS Initialization and Tuning Reference.

Attention: Before activating the CICS VR, the following sequence of events must be performed. Remember, the CICS VR server address space will be automatically started during system initialization if CICSVR_INIT(YES) is set.

Refer to chapter 4,"Activating the CICS VR server address space", of the *CICS VR Implementation Guide and Reference* for further details.

1. Create the recovery control data sets (RCDS) using the CICS VR RCDS naming convention.
2. If SMS-managed storage is not available, create the data sets that will be allocated to the DWWMSG, DWWDMSG and DWWDUMP ddnames using the specified CICS VR naming convention. If SMS-managed storage is available, CICS VR will dynamically create, catalog and allocate these data sets.

5.5.3 Required PARMLIB updates for CICS VR undo logging

The following updates are required to the active IGDSMSxx member of PARMLIB to use CICS VR undo logging. CICS VR undo logging allows you to run CICS VR batch backout to remove updates made to VSAM spheres by one or more batch job steps. The following updates must be made on each system in a sysplex that will execute batch jobs that invoke CICS VR undo logging. Refer to chapter 5,"Setting up CICS VR VSAM Batch Logging", in the *CICS VR Implementation Guide and Reference* for further details about the listed parameters.

Figure 13. IGDSMSxx updates for CICS VR

PARMLIB member	Required Update	Function
IGDSMSxx	CICSVR_UNDOLOG_PREFIX(prefix)	Specifies the first level qualifier of the MVS system logger log stream that CICS VR should write before-image log records to by default, where prefix is the first level qualifier.
IGDSMSxx	CICSVR_UNDOLOG_CONTROL(string)	Specifies if undo logging is enabled or disabled. If enabled, this parameter also specifies what action CICS VR should take if a problem occurs during undo logging. Refer to the *CICS VR Implementation Guide and Reference* for a list of valid values that can be specified for this parameter.
IGDSMSxx	CICSVR_BACKOUT_CONTROL(string)	Specifies if automatic batch backout should be performed when CICS VR detects that a job step failed due to an abend. Refer to the *CICS VR Implementation Guide and Reference* for a list of valid values that can be specified for this parameter.

Attention: Before using CICS VR undo logging, the following sequence of events must be performed:

1. Create the default undo log stream using the prefix.UNDOLOG naming convention, where prefix is the value defined in the CICSVR_UNDOLOG_PREFIX(prefix) parameter.
2. Copy the DWWBAFJS member included in the SDWWCNTL library to the PROCLIB data set.

Refer to chapter 5, "Setting Up CICS VR VSAM batch logging", of the *CICS VR Implementation Guide and Reference* for further details.

5.5.4 RACF Authorization

If RACF or a similar security product is in place, be sure to define the CICS VR started task to RACF and assign it a userid with appropriate authorization to read and update the RCDS, log streams, etc. For example, you can run:

- RDEFINE STARTED CICSVR.* STDATA(USER(SYSTASK))
- SETR RACLIST(STARTED) REFRESH

If RACF or a similar security product is in place, and you will be using CICS VR automatic batch backout, the DWWBAFJS started task must be defined to RACF, and assigned a userid with appropriate authorization to browse the output of the batch backout job. For example, you can run:

- RDEFINE STARTED DWWBAFJS.* STDATA(USER(userid))
- SETR RACLIST(STARTED) REFRESH

If RACF or a similar security product is in place, and you are using CICS VR automated recovery, the DWWCBINF, DWWCBRRY, and DWWCBRRG started tasks must be defined to RACF. You should assign a userid with appropriate authorization to get access to data sets that are explicitly defined via DD statements in the DWWCBINF, DWWCBRRY, and DWWCBRRG jobs, and to browse outputs of these jobs. For example, you can run:

- RDEFINE STARTED DWWCBINF.* STDATA(USER(userid))
- SETR RACLIST(STARTED) REFRESH
- RDEFINE STARTED DWWCBRRY.* STDATA(USER(userid))
- SETR RACLIST(STARTED) REFRESH
- RDEFINE STARTED DWWCBRRG.* STDATA(USER(userid))
- SETR RACLIST(STARTED) REFRESH

If RACF or a similar security product is in place, and you will be using CICS VR automatic or manual inventory scavenger running by the CICS VR server address space, the DWWARSCI started task must be defined to RACF and assigned a userid with appropriate authorization to browse the output of the inventory scavenger job. For example, you can run:

- RDEFINE STARTED DWWARSCI.* STDATA(USER(userid))
- SETR RACLIST(STARTED) REFRESH

If RACF or similar security product is in place, and you will be using a setup job running during the initialization of the CICS VR server address space, the setup job started task must be defined to RACF, and assigned a userid with appropriate authorization to browse the output of the setup job. For example, you can run:

- RDEFINE STARTED DWWRMDFS.* STDATA(USER(userid))
- SETR RACLIST(STARTED) REFRESH

If RACF is in place, you should provide access to discrete RACF FACILITY class profiles for the following DFSMShsm commands and user macros:

ARCXTRCT

ARCHDEL

ARCHRCAL

ARCHRCOV

ABACKUP

BACKDS

FIXCDS

RECOVER

For information about creating discrete RACF profiles, see *"z/OS DFSMShsm Implementation and Customization Guide".*

For details see *z/OS Security Server RACF System Programmer's Guide*.

5.5.5 Preparing for CICS VR Automated Recovery

Before using CICS VR automated recovery, the following sequence of events must be performed:

- 1. Copy the DWWCBINF, DWWCBRRY, and DWWCBRRG included in the SDWWCNTL library to the PROCLIB data set.
- 2. Modify the DWWCBINF, DWWCBRRY, and DWWCBRRG jobs to suit your installation requirements. Consult instructions in the jobs for more information.
- 3. Modify CICS TS definitions as described in the "Preparing for CICS VR Automated Recovery" section of Chapter 11 of the *CICS VR Implementation Guide and Reference.*

You can use CICS VR JCL customization to modify sample jobs. For more information, refer to section "Running CICS VR JCL customization", in the *CICS VR Implementation Guide and Reference.*

5.5.6 Preparing for CICS VR Log of Logs Scan Running

Before using CICS VR automatic or manual log of logs scan running by the CICS VR server address space, the following sequence of events must be performed:

- Copy the DWWARSCA included in the SDWWCNTL library to the PROCLIB data set.
- Modify the DWWARSCA job to suit your installation requirements. Consult instructions in the job for more information.

You can use CICS VR JCL customization to modify sample jobs. For more information, refer to section "Running CICS VR JCL customization", in the *CICS VR Implementation Guide and Reference.*

5.5.7 Preparing for CICS VR Inventory Scavenger Running

Before using CICS VR V6.3 automatic or manual inventory scavenger running by the CICS VR server address space, the following sequence of events must be performed:

- Copy the DWWARSCI included in the SDWWCNTL library to the PROCLIB data set.
- Modify the DWWARSCI job to suit your installation requirements. Consult instructions in the job for more information.

You can use CICS VR JCL customization to modify sample jobs. For more information, refer to section "Running CICS VR JCL customization", in the *CICS VR Implementation Guide and Reference.*

5.5.8 Preparing for CICS VR ABARS Backup Control

Before using CICS VR ABARS Backup Control, you must use the supplied version (the load module DWWUIXIT included in SDWWLOAD) to replace a dummy version of the DFSMSdss Options Installation Exit Routine (ADRUIXIT) as it is described in z/OS DFSMS Installation Exits. You can use the supplied sample DWWUIXIT included in the SDWWCNTL to change the load module name from DWWUIXIT to ADRUIXIT as it is required for DFSMSdss.

5.6 Migration Considerations

Refer to chapter 3,"Migration Considerations", of the *CICS VR Implementation Guide and Reference* for complete migration instructions.

Different levels of CICS VR can run concurrently and independently of each other, as long as they are using different recovery control data sets (RCDSs). Also, the different levels of CICS VR should be installed in separate SMP/E target and distribution zones and reside in separate libraries.

For details of CICS TS compatibility, refer to the *CICS VR Implentation Guide and Reference*.

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 VR.

Please note the following points:

- If you want to install CICS VR 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 VR

6.1.1 SMP/E Considerations for Installing CICS VR

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

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 14. Using values lower than the recommended values can result in failures in the installation. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. See the SMP/E manuals for instructions on updating the global zone.

Figure 14. SMP/E Options Subentry Values

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

- SDFHEXCI
- SDFHLOAD
- CSSLIB

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

6.1.4 Sample Jobs

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

Figure 15. Sample Installation Jobs

Job Name	Job Type	Description	SMPTLIB Data Set
DWWSMPSU	ZONES	Sample job to set up SMP/E zones (see note below)	IBM.HCVR630.F2
DWWALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HCVR630.F2
DWWDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HCVR630.F2
DWWRECV	RECEIVE	Sample RECEIVE job	IBM.HCVR630.F2
DWWRECVE	RECEIVE	Sample RECEIVE job for electronic/disk input	IBM.HCVR630.F2
DWWAPPLY	APPLY	Sample APPLY job	IBM.HCVR630.F2
DWWACCPT	ACCEPT	Sample ACCEPT job	IBM.HCVR630.F2

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.6, “Perform SMP/E RECEIVE” on page 22) then copy the jobs from the SMPTLIB data sets to a work data set for editing and submission. See Figure 15 to find the appropriate data set.

You can also copy the sample installation jobs from the product files by submitting the following job. Before you submit the job, add a job card and change the lowercase parameters to uppercase values to meet the requirements of your site.

```
//STEP1    EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//IN       DD DSN=IBM.fmid.Fy,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=IN,OUTDD=OUT
/*
```

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

IN:

filevol is the volume serial of the DASD device where the downloaded files reside.

OUT:

jcl-library-name is the name of the output data set where the sample jobs are stored.
dasdvol is the volume serial of the DASD device where the output data set resides.

6.1.5 Prepare the installation environment

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 DWWSMPSU to create a new SMP/E global, target and distribution zones 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: DWWSMPSU 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.

6.1.6 Perform SMP/E RECEIVE

If you have obtained CICS VR as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the CICS VR 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 DWWRECEV or DWWRECVE to perform the SMP/E RECEIVE for CICS VR. Consult the instructions in the sample job for more information.

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

6.1.7 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job DWWALLOC to allocate the SMP/E target and distribution libraries for CICS VR. Consult the instructions in the sample job for more information.

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

6.1.8 Create DDDEF Entries

Edit and submit sample job DWWDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for CICS VR. Consult the instructions in the sample job for more information.

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

6.1.9 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job DWWAPPLY to perform an SMP/E APPLY CHECK for CICS VR. Consult the instructions in the sample job for more information.

   The latest HOLDDATA is available through several different portals, including https://public.dhe.ibm.com/s390/assigns/ or https://www.ibm.com/support/pages/enhanced-holddata-zos for usage instructions. 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 0 if this job runs correctly.

6.1.10 Perform SMP/E ACCEPT

Edit and submit sample job DWWACCEP to perform an SMP/E ACCEPT CHECK for CICS VR. 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.

6.1.11 Run REPORT CROSSZONE

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

After you install CICS VR, 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 VR

6.3 Product Customization

CICS VR is fully operational after the SMP/E installation is completed. Refer to IBM Products Documentation to set up CICS VR for each CICS region and to tailor the JCL and SQL statements that CICS VR uses.

The information provided on **IBM Products documentation** https://www.ibm.com/docs/en/cvrfz contains the step-by-step procedures to active the functions of CICS VR

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